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Twelfth Census of the United States.

CENSUS BULLETIN.

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MANUFACTURES.

KENTUCKY.

Hon. William R. Merriam,
Director of the Census.

Sir: I transmit herewith, for publication in bulletin form, the statistics of manufacturing and mechanical industries for the state of Kentucky for the census year 1900, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that "The schedules of inquiries relating to the products of manufacturing and mechanical establishments shall embrace the name and location of each establishment; character of organization, whether individual, cooperative, or other form; date of commencement of operations; character of business or kind of goods manufactured; amount of capital invested; number of proprietors, firm members, copartners, or officers, and the amount of their salaries; number of employees, and the amount of their wages; quantity and cost of materials used in manufactures; amount of miscellaneous expenses; quantity and value of products; time in operation during the census year; character and quantity of power used; and character and number of machines employed."

In each of the above particulars the requirements of the law have been observed, but certain of the data thus elicited are reserved for publication in the final volumes.

There were 18 cities and towns in the state withdrawn from the enumerators and their manufacturing statistics collected by special agents, in accordance with the further provision of section 7 of the census act. Wherever the phrase "urban manufactures" is used in this bulletin, it applies only to those cities and towns which were withdrawn from the enumerators and committed to special agents, and only to manufacturing establishments within the corporate limits of such places.

Four cities in Kentucky contain a population exceeding 20,000 each: Covington, Lexington, Louisville, and Newport. The manufacturing statistics of these 4 cities are presented by specified industries, and in comparison with the returns of the Eleventh Census.

Mr. Stephen D. Smith, of Louisville, rendered valuable assistance in the preparation of the text for the accompanying report.

The statistics of Kentucky are presented in 9 tables: Table 1 showing comparative figures for the state at the several censuses; Table 2 showing all the industries of the state divided between hand trades and the manufactures proper, and also the statistics of a governmental establishment, educational, eleemosynary, and penal institutions, and establishments with a product of less than $500, which three latter classes were not reported at previous censuses; Table 3 showing the statistics of the 10 leading industries of the state for 1890 and 1900; Table 4 showing the totals for the cities of Covington, Lexington, Louisville, and Newport at the censuses of 1890 and 1900; Table 5 showing the urban manufactures of the state in comparison with the totals for the entire state and the state exclusive of the cities and towns withdrawn from the enumerators; Table 6 showing the statistics for the state by counties; Table 7 showing the statistics for the state by specified industries; Table 8 showing the statistics for the cities of Covington, Lexington, Louisville, and Newport by specified industries; and Table 9 showing the totals for all industries in each of the cities and towns withdrawn from the enumerators (exclusive of those shown in Table 8).

Table 1 shows the growth of manufactures in Kentucky for the half century which terminates with the Twelfth Census. The manufacturing statistics of the censuses prior to 1850 were too imperfect and fragmentary in character to make it proper to reproduce them in such a table as a measure of industrial growth in the first half of the century. Owing to changes in the method of taking the census, comparisons between the earlier and later decades, represented in Table 1, should be drawn only in the most general way. Nevertheless, the rate of growth in Kentucky manufactures may be fairly inferred from the figures given.

In drafting the schedules of inquiry for the census of 1900 care was taken to preserve the basis of comparison with prior censuses. Comparison may be made safely with respect to all the items of inquiry except those relat-

ing to capital, salaried officials, clerks, etc., and their salaries, the average number of employees, and the total amount of wages paid. Live capital, that is, cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries, was first called for at the census of 1890. No definite attempt was made, prior to the census of 1890, to secure a return of live capital invested.

Changes were made in the inquiries relating to employees and wages in order to eliminate defects found to exist on the form of inquiry adopted in 1890. At the census of 1890 the average number of persons employed during the entire year was called for, and also the average number employed at stated weekly rates of pay, and the average number was computed for the actual time the establishments were reported as being in operation. At the census of 1900 the greatest and least numbers of employees were reported, and also the average number employed during each month of the year. The average number of wage-earners (men, women, and children) employed during the entire year was ascertained by using 12, the number of calendar months, as a divisor into the total of the average numbers reported for each month. This difference in the method of ascertaining the average number of wage-earners during the entire year may have resulted in a variation in the number, and should be considered in making comparisons.

At the census of 1890 the number and salaries of proprietors and firm members actively engaged in the business or in supervision were reported, combined with clerks and other officials. In cases where proprietors and firm members were reported without salaries, the amount that would ordinarily be paid for similar services was estimated. At the census of 1900 only the number of proprietors and firm members actively engaged in the industry or in supervision was ascertained, and no salaries were reported for this class. It is therefore impossible to compare the number and salaries of salaried officials of any character for the two censuses.

Furthermore, the schedules for 1890 included in the wage-earning class, overseers, foremen, and superintendents (not general superintendents or managers), while the census of 1900 separates from the wage-earning class such salaried employees as general superintendents, clerks, and salesmen. It is possible and probable that this change in the form of the question has resulted in eliminating from the wage-earners, as reported by the present census, many high-salaried employees included in that group for the census of 1890.

In some instances, the number of proprietors and firm members, shown in the accompanying tables, falls short of the number of establishments reported. This is accounted for by the fact that no proprietors or firm members are reported for corporations or cooperative establishments.

The reports show a capital of $104,070,791 invested in manufactures and mechanical industries in the 9,560 establishments reporting for the state of Kentucky. This sum represents the value of land, buildings, machinery, tools, and implements, and the live capital utilized, but does not include the capital stock of any of the manufacturing corporations of the state. The value of the products is returned at $154,605,115, to produce which involved an outlay of $4,687,441 for salaries of officials, clerks, etc.; $22,434,185 for wages; $19,581,630 for miscellaneous expenses, including rent, taxes, etc.; and $82,773,415 for materials used, mill supplies, freight, and fuel. It is not to be assumed, however, that the difference between the aggregate of these sums and the value of the products is, in any sense, indicative of the profits in the manufacture of the products during the census year. The census schedule takes no cognizance of the cost of selling manufactured articles, or of interest on capital invested, or of the mercantile losses incurred in the business, or of depreciation in plant. The value of the product given is the value as obtained or fixed at the shop or factory. This statement is necessary in order to avoid erroneous conclusions from the figures presented.

The value of products for the state of Kentucky, $154,605,115, is the gross value, and not the net or true value. The difference between these two should be carefully noted. The gross value is found by adding the value of products in the separate establishments. But the finished product of one establishment is often the raw material for another. In such cases the value of the former reappears in the latter, and thus the original cost of certain materials may be included several times in the gross value. The net or true value is found by subtracting from the gross value the value of all materials purchased in a partly manufactured form. In this way the duplications in the gross value are eliminated.

At the census of 1890 the schedule was so framed that it was impossible to find the net or true value. In the present census the schedule asked for the value of the materials in two classes, those purchased in the crude state and those purchased in the partly manufactured form. From the answers to these questions the net or true value of products may be computed. Thus, for Kentucky, the gross value of products for 1900 was $154,605,115. The value of materials purchased in a partly manufactured form was $45,985,916. The difference, $108,619,199, is the net or true value of products, and represents the increase in the value of raw materials resulting from the various processes of manufacture.

Very respectfully,

S. N. D. North

Chief Statistician for Manufactures.

KENTUCKY.

Table 1 shows the manufacturing and mechanical industries of the state of Kentucky as returned at the censuses of 1850 to 1900, inclusive, with the percentages of increase for each decade. This table also presents the average number of wage-earners employed by manufacturing establishments, in comparison with the total population of the state, and the value of the land and buildings owned and reported by manufacturers as capital, in comparison with the assessed value of all real estate and improvements.

TABLE 1.—COMPARATIVE SUMMARY, 1850 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.						PER CENT OF INCREASE.				
	1900	1890	1880	1870	1860	1850	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870	1850 to 1860
Number of establishments	9,560	7,745	5,328	5,390	3,450	3,609	23.4	45.4	[1]1.2	56.2	[1]4.4
Capital	$104,070,791	$79,811,980	$45,813,039	$29,277,809	$20,256,579	$11,810,462	30.4	74.2	56.5	44.5	71.5
Salaried officials, clerks, etc., number	5,079	[2]9,021	(3)	(3)	(3)	(3)	[1]43.7				
Salaries	$4,687,441	[2]$6,434,915	(3)	(3)	(3)	(3)	[1]27.2				
Wage-earners, average number	62,962	56,558	37,391	30,636	21,258	21,476	11.3	51.3	22.0	44.1	[1]1.0
Total wages	$22,434,185	$21,326,831	$11,657,814	$9,444,524	$6,020,082	$5,106,048	5.2	82.9	23.4	56.9	17.9
Men, 16 years and over	51,101	46,015	30,949	27,687	19,587	19,576	11.1	48.7	11.8	41.4	0.1
Wages	$20,216,990	$19,212,477	(3)	(3)	(3)	(3)	5.2				
Women, 16 years and over	9,174	8,280	3,529	1,159	1,671	1,900	10.8	134.6	204.5	[1]30.6	[1]12.1
Wages	$1,887,904	$1,850,514	(3)	(3)	(3)	(3)	2.0				
Children, under 16 years	2,687	2,263	2,913	1,790	(3)	(3)	18.7	[1]22.3	62.7		
Wages	$329,291	$263,840	(3)	(3)	(3)	(3)	24.8				
Miscellaneous expenses	$19,581,630	$15,879,728	(4)	(4)	(4)	(4)	23.3				
Cost of materials used	$82,773,415	$63,677,583	$47,461,890	$29,497,535	$22,295,759	$12,165,075	30.0	34.2	60.9	32.3	83.3
Value of products, including custom work and repairing	$154,605,115	$126,719,857	$75,433,377	$54,625,809	$37,931,240	$21,710,212	22.0	67.9	38.2	44.0	74.7
Total population	2,147,174	1,858,635	1,648,690	1,321,011	1,155,684	982,405	15.5	12.7	24.8	14.3	17.6
Wage-earners engaged in manufactures	62,962	56,558	37,391	30,636	21,258	21,476	11.3	51.3	22.0	44.1	[1]1.0
Per cent of total population	2.9	3.0	2.3	2.3	1.8	2.2					
Assessed value of real estate	[5]$419,400,657	$376,788,792	$265,085,908	$311,479,694	$277,925,054	$177,013,407	19.3	42.1	[1]14.9	12.1	57.0
Value of land and buildings invested in manufactures [6]	$26,097,041	$19,596,397	(3)	(3)	(3)	(3)	33.2				
Per cent of assessed value	5.8	5.2									

[1] Decrease.
[2] Includes proprietors and firm members, with their salaries; number only reported in 1900. (See Table 7.)
[3] Not reported separately.
[4] Not reported.
[5] As given in the Proceedings of the State Board of Equalization, of Kentucky, session of 1900.
[6] Does not include value of rented property.

Although Kentucky is an agricultural state, Table 1 shows that there has been a large growth in its manufacturing and mechanical industries during the half century. The population during these years increased from 982,405 to 2,147,174, or 118.6 per cent, while the average number of wage-earners employed in manufacturing establishments increased from 21,476 to 62,962, or 193.2 per cent, embracing, in 1900, 2.9 per cent of the entire population, compared with 2.2 per cent in 1850. Probably the best indication of the importance of the wage-earning class is afforded by the greatest number employed at any one time during the year. In 1900 this was 91,536, or 4.3 per cent of the total population of the state. Measured by the value of the products, the greatest percentage of increase, 74.7, was during the decade ending with the year 1860, although the greatest absolute increase was between the years 1880 and 1890.

The state of Kentucky has two extensive coal fields, one in the eastern section of the state and the other in the western, while large areas are still covered with forests of hard wood. Lack of railroad facilities delayed the development of its mineral resources, but that lack has been measurably supplied. The Ohio River, flowing along its northern border, and the Mississippi River, bounding it on the west, have long furnished access to the great river system of the central valley of the United States. Steam navigation has caused a change in the distribution of manufactures. In 1810 Lexington, situated in the central part of the state, had 144 manufacturing establishments,[1] and was a leading manufacturing point of the Southwest, but since then the river cities and towns have grown into prominence.

Table 2 divides the industries of the state between the hand trades and the manufactures proper. This table also gives the statistics for a governmental establishment, educational, eleemosynary, and penal institutions, and establishments with a product of less than $500; these were not reported at previous censuses, and therefore are omitted from the other tables and their use confined to Table 2.

[1] History of Lexington, by George W. Ranck, page 241.

TABLE 2.—SUMMARY FOR ALL ESTABLISHMENTS.

CLASSES.	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	COST OF MATERIALS USED. Total.	COST OF MATERIALS USED. Purchased in raw state.	COST OF MATERIALS USED. Purchased in partially manufactured form.	COST OF MATERIALS USED. Fuel, freight, etc.	Value of products, including custom work and repairing.
Total	12,902	$104,988,434	14,803	63,078	$22,484,575	$19,630,931	$83,022,991	$33,650,435	$46,157,274	$3,215,282	$155,339,645
Hand trades[1]	3,743	5,613,995	4,368	8,524	3,147,221	1,526,203	6,835,436	152,310	6,480,227	202,899	15,714,218
Governmental establishment	1	80,115		11	7,200		6,558		6,137	416	13,754
Educational, eleemosynary, and penal institutions	11	109,649		19	9,885	2,705	28,129	10,559	15,902	1,668	49,100
Establishments with a product of less than $500	3,330	727,879	3,570	81	33,355	46,596	214,894	65,575	149,319		671,676
All other establishments	5,817	98,456,796	6,865	54,438	19,286,964	18,055,427	75,937,979	33,421,991	39,505,689	3,010,299	138,890,897

[1] Includes bicycle and tricycle repairing, 55; blacksmithing and wheelwrighting, 1,324; boots and shoes, custom work and repairing, 288; carpentering, 313; clothing, men's, custom work and repairing, 245; clothing, women's, dressmaking, 274; dyeing and cleaning, 26; furniture, cabinetmaking, repairing, and upholstering, 66; lock and gun smithing, 27; masonry, brick and stone, 88; millinery, custom work, 353; painting, house, sign, etc., 226; paper hanging, 57; plastering and stuccowork, 48; plumbing, and gas and steam fitting, 153; sewing machine repairing, 10; watch, clock, and jewelry repairing, 190.

Of the 12,902 establishments of all classes shown in this table, 7,073, or 54.8 per cent, were small shops included in the groups of "hand trades" and "establishments with a product of less than $500." The value of the products of these establishments, consisting principally of the sums received for custom work and repairing, amounted to $16,385,894, or only 10.5 per cent of the total value of the products of the state.

In addition to the 12,902 active establishments in the state during the census year, with a capital of $104,988,434, shown in Table 2, there were 146 idle establishments, with a capital of $3,563,231, divided as follows:

INDUSTRIES.	Number of idle establishments.	Capital.	INDUSTRIES.	Number of idle establishments.	Capital.
Brick and tile	15	$236,655	Liquors, malt	1	$5,000
Coke	1	5,000	Lumber, planing mill products, including sash, doors, and blinds	1	22,000
Flouring and grist mill products	18	80,755	Lumber and timber products	25	185,868
Fruits and vegetables, canning and preserving	2	23,500	Printing and publishing, newspapers and periodicals	1	4,300
Glass	2	70,581	Woolen goods	6	1,095,060
Iron and steel	3	100,000	All other industries	30	24,110
Lime and cement	3	37,700			
Liquors, distilled	38	1,672,702			

TABLE 3.—COMPARATIVE SUMMARY OF TEN LEADING INDUSTRIES.

INDUSTRIES.	Year.	Number of establishments.	Capital.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
Total for selected industries for state	1900	3,332	$58,521,580	30,010	$10,925,167	$14,940,231	$51,176,198	$91,038,617
	1890	1,908	43,559,058	23,951	7,708,854	12,398,868	33,816,212	64,927,577
Increase, 1890 to 1900		1,424	14,962,522	6,059	3,216,313	2,541,363	17,359,986	26,711,040
Per cent of increase		74.6	34.3	25.3	41.7	20.5	51.3	41.1
Per cent of total of all industries in state	1900	34.9	56.2	47.7	48.7	76.3	61.8	59.3
	1890	24.6	54.6	42.3	36.1	78.1	53.1	51.2
Cars and general shop construction and repairs by steam railroad companies.	1900	25	1,761,958	3,572	1,841,778	55,984	2,267,578	4,248,029
	1890	9	305,229	623	353,200		225,485	588,925
Clothing, men's, factory product	1900	192	1,509,136	2,701	694,018	259,040	1,851,051	3,420,365
	1890	248	1,146,454	2,612	619,188	74,268	1,198,776	2,518,540
Flouring and grist mill products	1900	1,145	4,928,928	1,134	483,594	295,982	12,018,998	14,515,161
	1890	505	4,285,649	1,328	395,806	272,883	7,917,917	9,681,259
Foundry and machine shop products	1900	91	3,445,369	2,790	1,182,942	246,088	2,010,857	4,434,610
	1890	65	5,109,609	2,947	1,512,966	289,727	2,667,393	6,565,321
Iron and steel	1900	8	4,198,987	2,402	1,144,782	176,846	4,324,100	6,876,093
	1890	9	2,310,655	1,435	670,489	115,645	1,703,144	2,725,603
Leather, tanned, curried, and finished	1900	23	4,681,389	810	321,658	112,659	2,881,896	3,757,016
	1890	31	2,519,339	582	289,931	109,684	2,578,299	3,487,570
Liquors: Total	1900	203	17,411,708	1,703	886,681	5,682,979	4,236,285	12,973,154
	1890	155	14,971,953	2,253	864,052	8,450,422	4,729,717	17,760,545
Liquors, distilled	1900	177	12,280,054	1,112	559,439	4,182,373	3,605,316	9,786,527
	1890	126	10,966,210	1,744	543,367	7,631,619	3,876,591	15,159,648
Liquors, malt	1900	26	5,131,654	591	327,242	1,500,606	630,969	3,186,627
	1890	29	4,005,743	509	320,685	818,803	853,126	2,600,897
Lumber and timber products	1900	1,280	9,805,404	7,549	2,477,696	379,074	7,379,148	13,774,911
	1890	599	6,571,374	6,322	1,568,394	381,797	4,375,392	7,904,428

TABLE 3.—COMPARATIVE SUMMARY OF TEN LEADING INDUSTRIES—Continued.

INDUSTRIES.	Year.	Number of establishments.	Capital.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
Slaughtering:								
Total	1900	28	$1,326,976	511	$214,271	$105,694	$4,444,621	$5,717,167
	1890	26	1,447,945	414	130,767	185,116	2,604,664	3,374,011
Slaughtering and meat packing, wholesale	1900	13	70,870	42	19,434	6,269	545,373	635,685
	1890	17	1,415,373	391	119,194	130,312	2,283,997	2,968,227
Slaughtering, wholesale, not including meat packing	1900	15	1,256,106	469	194,837	99,425	3,899,248	5,081,482
	1890	9	32,572	23	11,573	4,804	320,667	405,784
Tobacco:								
Total	1900	337	9,451,725	6,838	1,677,747	7,625,885	9,761,664	21,922,111
	1890	261	4,890,851	5,435	1,304,061	2,569,326	5,820,425	11,321,375
Tobacco, chewing, smoking, and snuff	1900	59	3,485,793	3,187	850,018	7,182,022	5,221,257	14,948,192
	1890	38	2,687,471	2,479	659,906	2,320,144	2,847,031	6,788,586
Tobacco, cigars and cigarettes	1900	180	1,105,303	1,349	388,064	296,081	514,943	1,506,559
	1890	144	528,297	694	280,759	188,541	384,339	1,058,039
Tobacco, stemming and rehandling	1900	98	4,860,629	2,302	439,665	147,782	4,025,464	5,467,360
	1890	79	1,675,083	2,262	863,396	110,641	2,589,005	3,474,750

The 10 leading industries of the state in 1900, as shown in Table 3, embraced 3,332 establishments, or 34.9 per cent of the total number in the state; used a capital of $58,521,580, or 56.2 per cent of the total; gave employment to 30,010 wage-earners, or 47.7 per cent of the total number; and paid $10,925,167, or 48.7 per cent of the total wages. The value of their products was $91,638,617, or 59.3 per cent of the total. In the discussion of Table 3, which follows, these industries are ranked with reference to the value of their products.

Table 3 shows that the manufacture of tobacco is the most important industry in the state. The 337 establishments reported in 1900 gave employment to 6,838 wage-earners, or 10.9 per cent of the wage-earners employed in the state, and the products were valued at $21,922,111, or 14.2 per cent of the total value of the products of the state. In 1890 there were 261 establishments, 5,435 wage-earners, and products valued at $11,321,375. The increase in the value of products during the decade was $10,600,736, or 93.6 per cent. Settlers from the eastern part of Virginia introduced tobacco planting in what was then a county of that state, and by 1783 the Virginia legislature had established 3 warehouses in that region for the storage and inspection of the leaf.[1] Tobacco was for some years a legal tender for all debts, but in 1794 the Kentucky legislature took away its quality as a legal tender for court fees, the Constitution of the United States having taken it away in other respects. In 1810 there were 2 tobacco factories in Lexington,[2] and in 1819, 2 of the establishments located in Louisville were engaged in what was known to the trade as preparing strips for foreign markets, while the others produced cigars, snuff, and chewing tobacco. At that period, cigars were made in small establishments in nearly every town in the state, and on many of the farms, while chewing tobacco was also made in a number of these towns. Owing to its facilities for communication with the largest tobacco-growing section of the country, Louisville has been for many years a leading leaf-tobacco market of the world,[3] and its greater facilities as a distributing point have given it an added advantage over other localities in the state equally well supplied with the leaf. Tobacco industries of all kinds have tended, therefore, to concentrate in that city, although the establishments at Owensboro and Henderson do an extensive business in preparing leaf for shipment.

The manufacture of flouring and grist mill products ranks second among the industries of the state, with 1,145 establishments, 1,134 wage-earners, and products valued at $14,515,161. In 1890 there were 505 establishments, 1,328 wage-earners, and products valued at $9,681,259. The increase in the value of products during the decade was $4,833,902, or 49.9 per cent. Flouring and grist mills were early established on all the streams of the state, but only in the last decade has much been done in the way of making flour for foreign markets. A large mill in Louisville now has a considerable export trade.

There were 1,280 establishments engaged in the manufacture of lumber and timber products in 1900, the industry third in rank, with 7,549 wage-earners, and products valued at $13,774,911. In 1890 there were 599 establishments, 6,322 wage-earners, and products valued at $7,904,428. The increase in the value of products during the decade was $5,870,483, or 74.3 per cent. Logging is an extensive industry on the upper waters of the Cumberland, Kentucky, and Licking rivers, where large sawmills are also located.

There were 203 establishments engaged in the manufacture of liquors in 1900, with 1,703 wage-earners, and products valued at $12,973,154. In 1890 there were 155 establishments, 2,253 wage-earners, and products valued at $17,760,545. The decrease in the value of products during the decade was $4,787,391, or 27 per cent. This decrease was confined to the value of distilled liquors, the

[1] Memorial History of Louisville, by J. Stoddard Johnston, Vol. I, page 251.
[2] History of Lexington, page 240.
[3] Memorial History of Louisville, Vol. I, page 279.

value of malt liquors having increased during the decade. The first distillery was built at Louisville in 1783,[1] by Evans Williams. About the same time a distillery was built near Maysville, another near Bardstown, and a third near Harrodsburg. In 1787 a colony of 60 families from Maryland established distilleries in what are now Washington and Marion counties, and sent the products down Salt River, to settlements on the Ohio and Mississippi rivers.[2] When the first tax on whiskey was imposed, in 1794, it caused a whiskey rebellion in western Pennsylvania, and many distillers migrated westward, a number settling in Bourbon county. Small distilleries, making from 1 to 2 barrels of whiskey a day, multiplied rapidly. In the early days the farmer turned his corn into whiskey and fattened his hogs on the refuse. For a time whiskey was used in settling accounts. After the Civil War, the character of the distilling industry was changed by the introduction of business-like methods, and the smaller distilleries were gradually replaced by larger ones, making from 10 and 20 to 30 and 40 or more barrels a day. The product is almost wholly corn whiskey, known to the trade as "Bourbon." Owing to its facilities as a distributing point, Louisville has become the principal seat of the brewing industry of the state. The smaller breweries, located formerly at several different points, have nearly all been abandoned.

There were 8 establishments engaged in the manufacture of iron and steel in 1900, with 2,402 wage-earners, and products valued at $6,876,093. In 1890 there were 9 establishments, 1,435 wage-earners, and products valued at $2,725,603. The increase in the value of products during the decade was $4,150,490, or 152.3 per cent. Iron ore exists in large quantities in 32 counties. Furnaces were early established in Bath and Estill counties, but were abandoned because of a lack of transportation facilities.[3] Ashland is now the center of a large and growing iron industry. In 1846 William Kelly built 2 iron furnaces near Eddyville, on the lower Cumberland, and in 1851 began what was called his "air-boiling process" for converting iron into steel. This was five years before Henry Bessemer took out a patent for the pneumatic process of manufacturing steel, to which his name has been given, and during these years steamboats built at Cincinnati were using boiler plates similar to the Bessemer boiler plates, but made by the Kelly air-boiling process. Litigation about patents followed, and ultimately Kelly was allowed a royalty.[4]

There were 28 establishments engaged in the slaughtering and meat packing industry in 1900, with 511 wage-earners, and products valued at $5,717,167. In 1890 there were 26 establishments, 414 wage-earners, and products valued at $3,374,011. The increase in the value of products during the decade was $2,343,156, or 69.4 per cent. Pork packing was an early industry in Kentucky, and from the first centered in the city of Louisville, although before 1860 some packing was done at Lexington, Frankfort, and Maysville, and later at Bowling Green. Between 1850 and 1860, Louisville contended with Cincinnati for first place in the pork-packing industry of the United States; but the opening of the West, with its great grain fields, carried the supremacy away from the Ohio Valley. The use of artificial ice, permitting summer packing, has caused a great increase in general slaughtering in Louisville, where this industry is now much larger than in the old days of winter packing.

There were 91 establishments engaged in the manufacture of foundry and machine shop products in 1900, with 2,790 wage-earners, and products valued at $4,434,610. In 1890 there were 65 establishments, 2,947 wage-earners, and products valued at $5,565,321. The decrease in the value of products during the decade was $1,130,711, or 20.3 per cent. This decrease is due to the removal of several large establishments from Covington and Newport to the gas fields of Indiana.

There were 25 establishments engaged in car construction and general shop work of steam railroad companies in 1900, with 3,572 wage-earners, and products valued at $4,248,029. In 1890 there were 9 establishments, 623 wage-earners, and products valued at $588,925. The increase in the value of products during the decade was $3,659,104, or 621.3 per cent. The first railroad train in the West ran on an oval track in a machine shop in Lexington, in 1827,[5] but it was not until 1835 that the first railroad was operated in Kentucky.[6] In 1900 there were 3,056 miles of track in the state.

There were 23 establishments engaged in the tanning, currying, and finishing of leather in 1900, with 810 wage-earners, and products valued at $3,757,016. In 1890 there were 31 establishments, 582 wage-earners, and products valued at $3,487,570. The increase in the value of products during the decade was $269,446, or 7.7 per cent. From the first settlement of the state, small tanneries were established to meet neighborhood requirements. About 1848 a large custom tannery was established in Louisville, soon followed by another. The chestnut-oak tree, the bark of which furnishes the tannin for leather manufacturing in Kentucky, has an advantage over hemlock, for when it is cut down and stripped of its bark, new shoots spring from the stump. In twenty years the new tree is ready for stripping, while the hemlock tree, once cut down and stripped of its bark, is permanently destroyed. Railroad development has given access to chestnut-oak forests, and has led to the erection of tanneries in Louisville, where the industry is now mainly concentrated. Sole-leather and harness leather are the principal products, although some sheepskins are tanned for the manufacture of shoes and saddles. Tanning is still one of the state's important industries, although it reached its highest development about 1883.

[1] Memorial History of Louisville, Vol. I, page 261.
[2] Ibid.
[3] History of Kentucky, by Richard H. Collins, Vol. II, pages 47, 167, and 168.
[4] History of Kentucky, by Z. F. Smith, pages 505 and 506. Memorial History of Louisville, Vol. I, page 319.
[5] History of Lexington, page 186.
[6] Memorial History of Louisville, Vol. I, page 319. History of Kentucky, by Z. F. Smith, page 525.

There were 192 establishments engaged in the manufacture of men's clothing, factory product, in 1900, with 2,701 wage-earners, and products valued at $3,420,365. In 1890 there were 248 establishments, 2,612 wage-earners, and products valued at $2,518,540. The increase in the value of products during the decade was $901,825, or 35.8 per cent. The manufacture of jean clothing began in Louisville about 1857, and developed rapidly after the close of the Civil War, until the city became one of the great centers of this industry. The jean used is made largely in the mills of the state. In place of shears formerly used in cutting the material for clothing, machines operated by electricity, and which cut from 24 to 54 thicknesses of cloth at once, are now used. The low profit on jean clothing during the last decade has led to the manufacture of cassimere clothing from cloth made partly in Kentucky and partly in the Atlantic states.

URBAN MANUFACTURES.

Table 4 shows the totals for the manufacturing and mechanical industries of the cities of Covington, Lexington, Louisville, and Newport, as returned at the censuses of 1890 and 1900, with the percentages of increase.

TABLE 4.—COMPARATIVE SUMMARY, COVINGTON, LEXINGTON, LOUISVILLE, AND NEWPORT, 1890 AND 1900, WITH PER CENT OF INCREASE.

	Year.	Number of establishments.	Capital.	WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
				Average number.	Total wages.			
The State	1900	9,560	$104,070,791	62,962	$22,434,185	$19,581,630	$82,773,415	$154,605,115
	1890	7,745	79,811,980	56,558	21,326,831	15,879,728	63,677,583	126,719,857
Per cent of increase		23.4	30.4	11.3	5.2	23.3	30.0	22.0
Covington	1900	403	4,729,786	3,898	1,539,089	832,705	2,983,976	6,610,082
	1890	1,308	6,397,380	6,111	2,956,263	1,026,579	8,228,079	15,999,575
Per cent of increase		[1] 69.2	[1] 31.4	[1] 36.2	[1] 47.9	[1] 18.9	[1] 63.7	[1] 58.7
Lexington	1900	271	1,532,378	1,441	545,118	224,916	1,467,515	2,925,697
	1890	183	1,619,380	1,279	550,026	124,915	1,256,739	2,708,445
Per cent of increase		48.6	[1] 5.4	12.7	[1] 0.9	80.1	16.8	8.0
Louisville	1900	2,307	49,334,701	29,926	10,945,720	13,145,595	41,016,391	79,286,390
	1890	1,700	36,086,985	24,159	9,844,468	6,250,230	28,033,840	54,515,226
Per cent of increase		35.7	36.7	23.9	11.2	110.3	46.3	45.4
Newport	1900	272	2,848,435	2,561	1,155,361	866,620	2,017,773	4,888,169
	1890	1,002	3,471,388	3,776	1,692,177	335,404	3,072,313	6,687,987
Per cent of increase		[1] 72.9	[1] 17.9	[1] 32.2	[1] 31.7	158.4	[1] 34.3	[1] 26.9
Total for 4 cities	1900	3,253	58,445,300	37,826	14,185,288	15,069,836	47,485,655	93,710,338
	1890	4,193	48,075,633	35,325	15,012,934	7,737,128	40,590,971	79,911,233
Per cent of increase		[1] 22.4	21.6	7.1	[1] 5.7	94.8	17.0	17.3
Per cent of 4 cities to total for state	1900	34.0	56.2	60.1	63.2	77.0	57.4	60.6
	1890	54.1	60.2	62.5	70.5	48.7	63.7	63.1

[1] Decrease.

It appears from Table 4 that there has been an increase during the past decade in the combined manufactures of the 4 principal cities of the state. Although the number of establishments decreased from 4,193 to 3,253, or 22.4 per cent, the average number of wage-earners increased from 35,325 to 37,826, or 7.1 per cent, and the value of products increased from $79,911,233 to $93,710,338, or 17.3 per cent.

In Louisville, the leading manufacturing city in the state, the number of establishments increased during the decade from 1,700 to 2,307, or 35.7 per cent; the number of wage-earners from 24,159 to 29,926, or 23.9 per cent; and the value of products from $54,515,226 to $79,286,390, or 45.4 per cent. The number of establishments, number of wage-earners, and value of products, in this city in 1900, constituted 24.1, 47.5, and 51.3 per cent, respectively, of the totals for the state. An increase in each of these particulars is also shown for the city of Lexington, while a decrease in each particular is shown for the cities of Covington and Newport. This decrease is due mainly to the removal from Covington and Newport of 30 large establishments employing, in the aggregate, about 3,000 wage-earners. These have taken advantage of the cheaper fuel and the better shipping facilities offered in the natural gas belt of Indiana.

Table 5 presents the totals for the manufacturing industries of the 18 cities and towns withdrawn from the enumerators, places them in comparison with the totals for the entire state and the state exclusive of these cities and towns, and shows their rank in population and in value of products.

TABLE 5.—URBAN MANUFACTURES.

	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	PRODUCTS.			POPULATION.		
				Average number.	Total wages.			Value.	Rank.	Per cent of total.	Total.	Rank.	Per cent of total.
Total for state	9,560	$104,070,791	11,233	62,962	$22,434,185	$19,581,630	$82,773,415	$154,605,115	-------	100.0	2,147,174	-------	100.0
Total for urban manufactures	4,379	76,117,611	4,879	48,723	17,929,160	16,382,789	60,848,448	116,675,885	-------	75.5	412,838	-------	19.2
Ashland	82	2,980,975	83	1,620	575,152	169,151	3,046,856	4,595,809	4	3.0	6,800	11	0.3
Bellevue	29	63,313	30	66	20,839	18,342	33,619	103,558	18	0.1	6,332	13	0.3
Bowling Green	104	624,907	119	782	290,774	64,174	855,636	1,557,952	10	1.0	8,226	9	0.4
Covington	403	4,729,786	435	3,898	1,539,089	882,705	2,983,976	6,610,082	2	4.3	42,938	2	2.0
Dayton	59	193,690	62	236	86,218	6,903	125,112	314,610	16	0.2	6,104	14	0.3
Frankfort	66	1,594,791	75	367	161,474	256,229	1,181,326	2,038,125	9	1.3	9,487	8	0.4
Henderson	106	2,759,258	120	1,456	380,726	168,909	1,815,579	2,803,628	8	1.8	10,272	7	0.5
Hopkinsville	73	445,770	90	547	136,346	50,917	514,404	884,913	13	0.6	7,280	10	0.3
Lexington	271	1,532,378	290	1,441	545,118	224,916	1,467,515	2,925,697	7	1.9	26,369	4	1.2
Louisville	2,307	49,334,701	2,568	29,926	10,945,720	13,145,595	41,016,391	79,286,390	1	51.3	204,731	1	9.5
Ludlow	35	462,807	45	726	382,995	34,381	566,689	1,077,556	12	0.7	3,334	18	0.2
Mayfield	45	954,448	52	324	100,992	13,001	373,253	607,499	14	0.4	4,081	16	0.2
Maysville	95	1,125,147	119	644	194,055	52,770	621,730	1,207,560	11	0.8	6,423	12	0.3
Mt. Sterling	52	253,825	59	181	35,163	15,059	140,268	263,954	17	0.2	3,561	17	0.2
Newport	272	2,848,435	311	2,561	1,155,361	866,620	2,017,773	4,888,169	3	3.1	28,301	3	1.3
Owensboro	159	3,308,056	178	1,582	424,736	215,875	2,060,368	3,446,605	6	2.2	13,189	6	0.6
Paducah	171	2,689,121	175	2,305	918,603	233,926	1,703,324	3,627,344	5	2.3	19,446	5	0.9
Winchester	50	216,203	68	111	35,799	18,516	324,629	436,434	15	0.3	5,964	15	0.3
Total for state exclusive of urban manufactures	5,181	27,953,180	6,354	14,239	4,505,025	3,198,841	21,924,967	37,929,230	-------	24.5	1,734,336	-------	80.8
Per cent of urban manufactures to total for state	45.8	73.1	43.4	77.4	79.9	83.7	73.5	75.5	-------	-------	19.2	-------	-------

Of the 9,560 establishments in the state, 4,379, or 45.8 per cent, were located in these 18 cities and towns. The capital reported for these establishments was $76,117,611, or 73.1 per cent of that for the entire state. They furnished employment to 48,723 wage-earners, or 77.4 per cent of the total for the state; and the value of their products, $116,675,885, formed 75.5 per cent of the total for the state.

Table 6 shows the totals for the state by counties.

Table 7 shows the totals for the state by specified industries.

Table 8 shows the totals for the cities of Covington, Lexington, Louisville, and Newport by specified industries.

Table 9 shows the totals for all industries in the cities and towns withdrawn from the enumerators, exclusive of those shown in Table 8.

TABLE 6.—MANUFACTURES

[No manufactures reported

	COUNTIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
1	The State	9,560	$104,070,791	$10,493,135	$15,608,906	$25,424,506	$52,549,244	11,233	5,079	$4,687,441	62,962	$22,484,185
2	Adair	42	38,573	3,350	5,675	21,318	8,230	50	2	1,050	35	9,586
3	Allen	58	166,995	15,445	11,539	64,132	75,879	68	7	4,374	197	65,712
4	Anderson	30	1,008,220	45,295	146,000	359,190	457,735	36	13	24,620	133	91,499
5	Ballard	33	131,039	34,130	9,385	45,575	41,449	42	5	4,560	127	39,325
6	Barren	73	189,554	9,255	14,500	75,402	40,397	101	3	1,800	120	39,041
7	Bath	46	210,610	82,845	14,566	55,694	57,505	54	7	3,040	113	34,670
8	Bell	42	1,966,351	168,370	406,530	438,479	952,972	42	36	45,862	771	242,279
9	Boone	34	70,380	3,055	14,720	22,600	30,005	39	3	1,100	26	9,347
10	Bourbon	59	437,888	30,650	80,675	170,750	155,813	71	15	13,360	129	51,184
11	Boyd	130	3,235,138	183,677	727,542	711,628	1,612,291	130	87	88,888	1,843	640,865
12	Boyle	84	383,405	35,510	59,350	103,938	184,612	104	22	14,020	329	93,661
13	Bracken	35	162,848	9,035	20,885	42,670	90,208	43	7	9,500	98	23,387
14	Breathitt	17	145,305	11,050	7,095	36,080	91,080	21	5	4,600	70	21,847
15	Breckinridge	82	352,072	57,259	119,255	97,149	78,409	104	9	5,442	222	70,276
16	Bullitt	22	381,991	25,465	53,070	63,895	239,571	27	10	5,400	46	18,610
17	Butler	41	66,529	15,375	7,005	28,635	15,514	50			42	12,270
18	Caldwell	52	178,733	18,255	33,210	57,573	69,695	64	15	5,870	221	54,307
19	Calloway	33	124,823	5,245	10,591	28,405	80,582	41	15	7,195	74	14,463
20	Campbell	409	3,575,089	310,260	801,910	793,709	1,669,210	456	154	163,962	3,063	1,302,598
21	Carlisle	42	109,947	25,925	12,650	48,505	22,867	48	7	1,134	77	22,148
22	Carroll	51	528,802	23,545	67,507	172,815	264,935	60	6	4,550	160	70,348
23	Carter	48	198,110	63,975	42,771	47,805	43,558	45	4	4,460	255	65,859
24	Casey	54	57,856	3,955	3,515	30,702	19,684	70			129	36,184
25	Christian	141	652,457	60,560	136,935	173,175	281,787	184	74	38,272	689	177,034
26	Clark	65	1,733,834	956,197	81,950	109,660	591,027	88	27	24,800	459	160,095
27	Clay	23	23,522	6,227	1,235	9,720	6,340	27			20	6,010
28	Clinton	28	33,796	4,676	4,765	15,105	9,250	35	4	1,270	31	7,507
29	Crittenden	33	76,850	4,570	8,470	33,425	30,385	38	3	2,600	45	12,593
30	Cumberland	15	35,304	5,530	2,004	12,800	14,970	22			12	3,691
31	Daviess	215	3,926,782	365,565	572,780	624,387	2,364,050	241	214	132,864	1,733	470,389
32	Edmonson	20	32,780	9,665	3,760	14,195	5,160	24			38	6,997
33	Elliott	36	24,573	1,303	2,905	14,340	6,025	40			26	7,270
34	Estill	36	196,720	103,860	8,870	37,157	46,833	40	5	1,860	91	29,331
35	Fayette	321	2,550,280	177,935	403,435	650,590	1,318,320	340	186	189,945	1,625	605,274
36	Fleming	76	153,573	23,405	20,400	39,610	70,158	92	3	1,130	61	20,944
37	Floyd	23	34,265	5,450	1,785	11,370	15,660	29			24	7,251
38	Franklin	91	1,895,311	118,835	247,610	462,534	1,066,332	99	96	92,018	571	212,805
39	Fulton	36	325,323	37,783	45,260	74,180	168,100	49	1	1,200	282	92,986
40	Gallatin	21	88,913	2,940	12,420	26,980	46,573	25			50	19,410
41	Garrard	38	91,015	9,960	23,160	36,805	21,090	41	2	2,100	44	14,349
42	Grant	55	70,526	6,965	12,815	26,706	24,040	64	1	500	31	10,504
43	Graves	82	1,080,991	48,880	82,232	156,609	793,270	106	11	8,200	387	118,468
44	Grayson	57	119,115	14,964	18,006	55,450	30,695	80	3	1,160	82	24,411
45	Green	32	40,330	4,570	5,270	22,670	7,820	38			21	5,755
46	Greenup	34	57,616	6,320	8,990	22,931	19,375	37	3	1,720	88	35,652
47	Hancock	32	61,214	7,785	6,450	22,515	24,464	38	1	300	42	11,655
48	Hardin	83	275,906	17,715	40,455	99,258	118,478	99	13	7,890	119	38,552
49	Harlan	27	23,137	9,479	2,036	9,725	1,897	28			7	2,103
50	Harrison	93	548,305	28,170	96,885	189,212	234,038	107	13	7,952	149	61,410
51	Hart	47	99,814	22,498	11,965	32,722	32,629	58	1	900	51	17,076
52	Henderson	153	3,221,702	208,526	468,430	588,227	1,956,519	171	115	84,597	1,716	465,001
53	Henry	53	140,095	5,915	32,415	26,435	75,330	59	2	1,110	51	16,929
54	Hickman	18	81,526	5,600	12,830	26,980	36,116	23	9	5,260	170	57,355
55	Hopkins	117	581,818	32,495	60,240	148,707	290,376	155	27	14,524	562	157,628
56	Jackson	21	14,468	2,806	1,445	8,757	1,460	29			11	3,620
57	Jefferson	2,382	50,158,308	4,462,721	7,116,778	11,395,437	27,183,372	2,658	2,915	2,946,231	30,244	11,060,209
58	Jessamine	57	437,056	38,666	50,525	176,345	171,520	74	24	16,800	264	77,654
59	Johnson	18	20,191	2,131	1,510	7,925	8,625	23			18	6,125
60	Kenton	475	5,625,892	537,508	963,705	1,952,185	2,172,494	514	256	251,861	4,979	1,999,895
61	Knott	13	11,910	3,260	1,400	5,400	1,850	18			2	380
62	Knox	30	60,304	28,614	3,735	17,030	10,925	41	1	600	37	11,010
63	Larue	29	353,608	53,740	64,035	151,650	84,183	42	8	9,160	60	32,992
64	Laurel	42	181,807	61,170	10,300	29,120	81,217	51	8	4,850	154	52,622
65	Lawrence	57	113,808	33,902	8,674	38,339	32,393	68	8	2,034	79	25,839
66	Lee	16	75,912	35,030	2,640	22,540	15,702	15	2	967	41	14,465
67	Letcher	21	17,797	6,478	2,130	6,925	2,264	28			16	5,090
68	Lewis	60	191,394	17,490	34,030	34,682	105,192	75	7	8,650	248	67,900
69	Lincoln	87	253,582	11,905	46,820	69,543	125,264	115	5	1,725	168	49,395
70	Livingston	28	44,168	1,520	5,005	16,915	20,728	35	1	350	32	7,807
71	Logan	113	503,712	230,487	54,395	111,910	106,920	138	12	8,750	207	59,400
72	Lyon	25	181,465	24,970	5,655	28,980	121,860	32	30	14,960	367	75,847
73	McCracken	189	2,784,999	337,845	385,654	783,834	1,277,666	194	139	109,584	2,343	930,727
74	McLean	44	172,345	11,965	14,255	58,084	88,041	57	4	1,725	172	49,105
75	Madison	94	519,468	44,755	63,060	211,906	199,747	99	21	14,301	233	81,388
76	Magoffin	12	110,450	1,035	6,690	25,950	76,775	15	6	5,300	135	47,990

BY COUNTIES: 1900.

from Leslie county.]

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.				
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.	Value of products, including custom work and repairing.	
51,101	$20,216,990	9,174	$1,887,904	2,687	$329,291	$19,581,630	$855,998	$627,392	$16,682,288	$1,415,952	$32,773,415	$30,610,225	$2,163,190	$154,605,115	1
34	9,486	1	100			2,265	907	211	1,147		79,679	78,998	681	124,101	2
187	63,882	2	540	8	1,290	6,555	783	851	4,921		216,673	215,482	1,191	394,490	3
133	91,499					288,456	867	3,488	284,101		536,228	500,176	36,052	1,040,533	4
124	38,805	2	420	1	100	6,424	500	790	5,134		144,906	142,764	2,142	237,309	5
113	38,451	3	300	4	290	5,162	865	1,165	2,862	270	249,686	246,457	3,229	382,735	6
102	31,765	9	2,630	2	275	6,518	2,154	641	3,623	100	143,243	140,191	3,052	246,024	7
765	241,343			6	936	71,850	1,367	10,287	60,196		1,263,027	1,046,880	216,147	1,968,504	8
26	9,347					1,604	136	321	897	250	69,917	68,342	1,575	103,430	9
113	47,944	16	3,240			18,164	5,312	2,715	9,904	233	229,122	222,472	6,650	402,187	10
1,763	627,280	28	4,817	52	8,768	197,490	16,367	13,241	161,957	5,925	3,337,179	2,864,506	472,673	5,103,228	11
289	87,938	33	5,196	7	527	30,221	6,123	3,421	19,077	1,600	377,904	372,734	5,170	669,285	12
62	18,851	26	4,176	10	360	10,757	844	884	9,029		166,554	164,032	2,522	273,707	13
68	21,487			2	360	2,607	225	356	2,026		105,928	105,343	585	164,835	14
203	68,104	13	1,522	6	650	11,394	1,586	1,496	8,187	125	268,723	262,804	5,919	457,276	15
46	18,610					11,792	96	822	10,874		124,197	120,059	4,138	200,088	16
39	11,880	1	280	2	110	1,370	380	326	664		81,983	80,842	1,141	132,718	17
186	49,300	18	2,915	17	2,092	17,843	2,596	1,819	5,428	8,000	265,024	256,899	8,125	431,433	18
46	11,378	17	2,505	11	580	31,415	842	865	29,692	16	73,692	72,382	1,310	158,062	19
2,179	1,139,864	837	156,647	47	6,087	903,808	26,452	21,859	616,373	239,124	2,335,294	2,235,409	99,885	5,630,182	20
68	20,883	6	865	3	400	3,522	478	935	2,114		132,619	130,809	1,810	197,959	21
146	68,125	12	2,145	2	78	92,994	2,063	3,677	86,951	303	252,454	247,394	5,060	482,733	22
255	65,859					5,725	1,130	720	3,875		75,819	61,523	14,296	193,610	23
129	36,184					3,366	1,871	443	1,052		125,223	124,802	421	221,711	24
616	166,031	54	8,483	19	2,520	58,298	8,441	5,120	38,105	6,632	725,627	712,315	13,312	1,220,055	25
430	154,657	21	4,544	8	894	67,072	5,509	7,886	53,092	585	875,338	871,062	4,276	1,352,441	26
20	6,010					2,702	50	155	2,497		26,557	26,102	455	46,104	27
31	7,507					5,861	84	317	5,460		40,704	40,259	445	74,935	28
43	12,283	1	210	1	100	1,727	341	386	1,000		91,426	89,547	1,879	142,489	29
12	3,691					1,214	22	349	843		28,974	28,745	229	40,435	30
1,338	415,387	274	40,833	121	14,169	360,305	20,112	18,018	302,122	20,053	2,338,350	2,305,486	32,854	4,010,630	31
38	6,997					2,848	40	203	2,510	95	29,816	28,810	1,006	54,415	32
26	7,270					599	24	155	420		65,137	64,543	594	94,536	33
91	29,831					10,142	202	1,863	8,027	50	98,604	97,922	682	200,423	34
1,354	558,322	233	43,223	38	3,729	472,033	47,794	16,397	348,423	59,414	1,764,498	1,716,971	47,527	3,751,034	35
58	20,465	3	479			5,822	1,672	1,141	2,509	500	156,931	153,734	3,197	263,012	36
23	7,000	1	251			453	44	320	89		30,914	30,684	230	51,086	37
458	196,100	78	14,956	35	1,749	283,498	15,330	24,206	119,363	124,099	1,424,993	1,402,373	22,620	2,420,327	38
247	87,061	4	1,200	31	4,725	9,849	510	1,637	5,702	2,000	493,783	487,480	6,303	816,972	39
48	19,130	1	180	1	100	6,257	388	304	5,265	300	73,265	72,635	630	122,716	40
42	13,824	2	525			17,958	1,128	622	16,208		99,317	96,073	3,244	155,628	41
28	10,120	3	384			2,863	1,481	493	889		98,011	95,281	2,730	152,852	42
212	80,416	160	36,582	15	1,470	15,075	3,373	5,209	5,783	710	592,454	582,744	9,710	922,512	43
68	21,725	11	2,196	3	490	4,926	920	789	3,217		169,582	167,224	2,358	252,323	44
21	5,755					3,290	161	240	2,759	130	70,487	69,476	1,011	101,575	45
88	35,652					1,019	154	417	448		98,829	97,760	1,069	163,068	46
36	10,930	1	100	5	625	3,528	743	510	2,275		63,619	62,803	816	107,327	47
116	38,225	2	215	1	112	7,354	1,587	1,135	4,599	33	381,063	374,712	6,351	553,683	48
7	2,103					1,297		95	1,202		26,987	26,806	181	36,422	49
131	58,026	18	3,384			31,538	4,429	2,506	20,873	3,730	272,156	262,760	9,396	482,019	50
51	17,076					2,357	258	531	1,543	25	119,433	118,280	1,153	176,931	51
1,050	345,023	479	96,500	187	23,478	216,597	15,804	17,523	175,502	7,768	2,168,757	2,143,833	24,924	3,449,406	52
49	16,634	1	195	1	100	5,396	1,105	516	3,735	40	151,646	147,911	3,735	212,835	53
146	53,696			24	3,659	5,172	545	310	4,317		101,302	100,331	971	205,483	54
461	145,283	47	7,875	54	4,470	27,824	6,942	2,191	18,591	100	554,106	548,794	5,312	946,807	55
11	3,620					241	10	103	128		21,550	21,365	185	35,709	56
23,663	9,752,615	5,177	1,137,281	1,404	170,313	13,188,281	464,427	288,913	11,656,535	778,406	41,426,500	40,756,134	670,366	80,034,790	57
257	76,329	4	1,023	3	302	25,449	2,171	2,156	20,822	300	462,153	449,255	12,898	665,218	58
18	6,125					422	185	77	160		23,304	23,179	125	42,910	59
3,940	1,810,440	881	166,044	158	23,411	1,680,419	61,442	52,033	1,452,825	114,119	3,929,301	3,792,370	136,931	9,067,844	60
2	380					1,420		81	1,339		25,264	25,161	103	31,862	61
34	10,685			3	325	686	100	174	332	80	57,886	57,596	290	104,835	62
58	32,492	2	500			7,735	415	1,405	5,915		156,153	152,323	3,830	254,727	63
147	51,526	4	800	3	296	3,796	1,325	874	1,547	50	101,601	100,951	650	206,464	64
75	25,359	2	365	2	115	2,890	355	507	1,983	45	137,903	136,681	1,222	212,260	65
41	14,465					1,183	112	516	555		54,945	54,845	100	86,424	66
16	5,090					292	105	152	10	25	38,262	38,067	195	57,759	67
247	67,848			1	52	11,724	341	1,371	9,916	96	196,518	185,068	11,450	354,723	68
138	44,985	20	3,489	10	921	57,242	2,855	1,289	52,653	445	272,892	266,639	6,253	454,674	69
32	7,807					640	332	195	113		54,550	53,782	768	86,333	70
170	55,052	16	2,808	21	1,540	14,781	3,770	2,388	8,623		457,902	450,771	7,131	686,990	71
366	75,737	1	110			12,714	252	728	11,734		267,806	267,079	727	423,748	72
2,003	869,892	190	36,833	150	24,002	235,003	30,997	17,516	168,094	18,396	1,812,971	1,780,638	32,333	3,779,096	73
168	48,695	1	100	3	310	4,993	531	686	3,776		141,402	140,499	903	271,790	74
220	79,529	4	759	9	1,100	23,391	4,100	2,732	16,459	100	403,550	395,113	8,437	656,039	75
134	47,690	1	300			13,047	517	322	12,208		235,239	234,870	369	375,592	76

TABLE 6.—MANUFACTURES

	COUNTIES AND MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
77	Marion	70	$538,748	$31,470	$105,915	$135,435	$265,928	83	23	$16,892	267	$89,902
78	Marshall	29	54,040	9,255	7,865	27,295	9,625	38	1	900	43	14,262
79	Martin	4	29,020	3,015	20	2,975	23,010	4	1	900	27	8,100
80	Mason	139	1,273,260	176,812	210,234	290,690	595,524	169	62	52,613	699	212,901
81	Meade	37	265,766	41,415	35,010	97,010	92,331	45	9	5,100	110	27,665
82	Menifee	18	149,053	37,807	19,395	54,580	37,271	22	2	3,480	38	12,836
83	Mercer	55	266,676	14,700	50,980	104,340	96,656	70	4	1,860	75	31,486
84	Metcalfe	36	57,056	16,185	3,985	24,470	12,416	48	2	1,056	37	10,736
85	Monroe	62	80,545	13,440	11,700	37,830	17,575	90	3	275	70	22,916
86	Montgomery	75	374,245	43,990	73,795	136,005	120,455	86	12	7,904	155	44,145
87	Morgan	17	19,888	870	1,820	12,255	4,943	24	2	780	61	13,380
88	Muhlenberg	72	311,859	21,895	42,425	60,676	186,863	109	29	13,790	342	93,430
89	Nelson	58	1,017,726	44,315	207,155	222,853	543,403	73	26	28,998	150	60,123
90	Nicholas	53	174,660	13,770	24,815	53,970	77,105	64	4	4,000	81	26,479
91	Ohio	61	113,705	15,865	22,300	53,206	27,334	87	2	700	81	26,761
92	Oldham	25	25,770	4,995	4,425	8,240	8,110	27	------	------	26	4,869
93	Owen	59	111,249	3,340	9,209	35,567	63,133	75	3	1,680	70	18,960
94	Owsley	17	10,705	1,920	765	6,130	1,890	23	------	------	12	3,360
95	Pendleton	59	214,395	13,300	32,125	61,135	107,835	71	11	6,000	141	45,389
96	Perry	19	13,865	2,715	2,320	7,920	910	26	------	------	8	2,184
97	Pike	34	64,898	31,500	3,050	22,948	7,400	42	2	1,200	47	14,015
98	Powell	24	296,351	41,630	15,305	52,370	187,046	29	11	9,180	99	34,912
99	Pulaski	102	528,715	40,788	52,405	195,897	239,625	127	22	17,260	394	145,150
100	Robertson	12	15,670	1,090	3,490	6,605	4,485	16	------	------	3	893
101	Rockcastle	31	56,290	15,700	6,740	22,565	11,285	39	1	240	46	16,331
102	Rowan	35	145,650	29,190	12,680	56,306	47,474	36	7	6,300	164	50,570
103	Russell	27	28,535	2,970	4,025	16,195	5,345	34	------	------	19	5,006
104	Scott	64	201,286	12,580	51,235	67,100	70,371	81	4	2,320	100	36,608
105	Shelby	53	177,048	15,040	29,890	61,033	71,085	66	8	3,940	66	25,734
106	Simpson	34	105,076	5,910	15,275	43,760	40,131	39	3	2,220	82	23,519
107	Spencer	36	60,485	3,610	8,750	21,275	26,800	33	3	1,700	52	15,470
108	Taylor	45	218,006	6,608	16,515	29,818	165,065	51	3	2,100	123	41,322
109	Todd	52	83,870	9,328	12,575	35,947	26,020	63	2	800	56	16,209
110	Trigg	26	75,340	8,664	11,940	33,420	21,816	36	------	------	26	8,485
111	Trimble	18	116,860	1,480	67,905	40,235	7,240	23	2	2,400	41	20,101
112	Union	94	599,502	38,347	92,347	181,739	292,069	121	15	17,970	280	102,762
113	Warren	146	811,629	81,122	125,510	234,943	370,054	184	54	37,222	835	307,148
114	Washington	39	59,394	4,484	10,360	26,080	18,470	46	1	250	35	11,249
115	Wayne	40	45,356	3,650	7,100	21,475	13,131	54	------	------	25	7,230
116	Webster	56	161,499	13,775	34,222	47,895	65,607	69	4	1,154	105	32,191
117	Whitley	110	326,761	39,071	20,784	99,967	166,939	138	13	9,355	267	91,752
118	Wolfe	31	116,261	60,281	4,040	37,030	14,910	41	4	1,740	75	24,640
119	Woodford	55	383,383	21,935	181,855	192,540	487,053	62	31	43,855	162	56,643

TABLE 7.—MANUFACTURES BY

1	All industries	9,560	$104,070,791	$10,493,135	$15,603,906	$25,424,506	$52,549,244	11,233	5,079	$4,687,441	62,962	$22,434,185
2	Agricultural implements	9	1,735,595	169,400	189,887	240,550	1,135,758	6	95	124,720	680	300,106
3	Awnings, tents, and sails	6	18,195	2,000	1,430	1,575	13,190	6	2	550	29	11,977
4	Baking and yeast powders	4	9,325	100	150	1,275	7,800	8	12	2,020	13	3,049
5	Baskets, and rattan and willow ware	11	7,087	850	2,655	137	3,445	13	------	------	2	930
6	Bicycle and tricycle repairing	55	50,451	4,000	4,950	15,596	25,905	67	2	110	53	17,366
7	Blacksmithing and wheelwrighting	1,324	1,004,026	174,532	238,568	193,411	397,515	1,536	4	1,224	728	271,872
8	Bookbinding and blank book making	3	6,100	------	------	4,700	1,400	3	------	------	12	2,840
9	Boot and shoe uppers	4	6,688	------	------	1,540	5,148	7	------	------	14	5,969
10	Boots and shoes, custom work and repairing.	288	142,835	30,562	39,184	31,092	41,997	299	1	468	128	46,947
11	Boots and shoes, factory product	7	254,382	------	------	44,456	209,926	12	63	37,075	207	50,819
12	Bottling	5	59,427	7,000	5,000	4,097	43,330	8	17	19,322	35	12,694
13	Boxes, wooden packing	9	482,784	96,275	39,986	95,424	251,099	8	21	17,857	630	186,973
14	Brass castings and brass finishing	5	31,772	------	------	6,793	24,979	7	------	------	33	12,784
15	Bread and other bakery products	226	860,600	166,050	306,450	234,634	153,466	243	79	39,246	606	215,918
16	Brick and tile	84	805,446	144,280	297,087	143,330	220,749	97	36	25,843	918	251,547
17	Brooms and brushes	34	153,216	5,290	10,545	9,436	127,945	46	25	17,154	180	45,890
18	Carpentering	313	544,035	60,337	70,707	70,066	342,875	397	31	16,928	1,451	668,732
19	Carpets, rag	5	4,339	900	1,500	1,685	254	4	------	------	8	1,340
20	Carriage and wagon materials	17	658,150	86,500	107,689	179,335	284,626	8	42	42,082	578	187,096
21	Carriages and wagons	151	3,084,793	271,364	463,311	227,393	2,122,725	196	122	116,935	1,677	625,304
22	Cars and general shop construction and repairs by steam railroad companies.	25	1,761,958	252,430	484,950	442,561	582,017	------	96	82,689	3,572	1,841,778
23	Cheese and butter, urban dairy products.	18	4,022	175	250	565	3,032	20	1	75	9	2,726
24	Cheese, butter, and condensed milk, factory product.	9	18,640	165	1,450	5,665	11,360	14	------	------	17	5,206
25	Clothing, men's, custom work and repairing.	245	1,399,194	51,976	77,000	73,743	1,196,475	284	115	107,697	1,632	492,995
26	Clothing, men's, factory product	192	1,509,136	24,442	53,430	90,439	1,340,825	210	172	136,915	2,701	694,018

BY COUNTIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.				
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.	Value of products, including custom work and repairing.	
261	$89,009	3	$562	3	$831	$176,876	$2,118	$5,321	$168,677	$760	$410,628	$402,985	$7,643	$854,728	77
43	14,262					822		482	340		94,563	93,453	1,110	145,562	78
27	8,100					260		210	50		11,575	11,565	10	30,695	79
524	189,988	101	16,719	74	6,194	55,680	10,697	7,851	36,092	1,040	668,616	652,072	16,544	1,317,865	80
68	18,565	25	6,500	17	2,600	20,007	110	958	18,839	100	176,086	173,313	2,773	262,864	81
38	12,836					4,277		207	4,070		91,420	91,226	194	124,387	82
71	30,611	4	875			14,070	2,794	1,725	9,051	500	201,607	195,999	5,608	312,784	83
37	10,736					1,959	211	394	1,354		73,791	73,263	528	116,303	84
66	22,299	3	552	1	65	5,845	476	557	4,812		132,199	130,614	1,585	224,695	85
134	39,280	19	4,710	2	155	166,689	5,722	4,033	150,843	6,091	216,063	209,308	6,755	545,975	86
61	18,380					554	215	110	229		23,863	23,412	451	56,480	87
275	90,371	33	4,482	34	3,577	53,548	1,496	3,114	48,938		341,473	337,365	4,108	652,746	88
150	60,123					92,842	413	4,846	87,583		406,763	388,413	18,350	751,760	89
72	24,855	7	1,374	2	250	6,180	3,820	998	1,362		149,698	147,315	2,383	238,325	90
81	26,761					3,699	384	781	2,434	100	153,601	152,177	1,424	243,656	91
14	3,245	12	1,624			1,141	598	93	295	150	14,925	14,419	506	35,222	92
48	14,870	22	4,090			3,438	1,651	387	1,400		182,160	180,029	2,131	259,433	93
12	3,360					221	60	71	90		17,861	17,734	127	29,751	94
133	44,359	8	1,030			12,868	1,169	1,189	10,510		221,015	216,990	4,025	402,679	95
8	2,184					206		106	100		19,344	19,249	95	26,642	96
47	14,015					2,530	286	434	1,810		68,242	67,797	445	109,427	97
96	34,232			3	680	34,200	531	1,475	32,194		202,680	202,538	142	343,020	98
381	143,315	3	690	10	1,145	19,851	1,186	2,285	16,170	210	455,260	451,709	3,551	783,099	99
2	743	1	150			415	185	95	135		15,977	15,520	457	25,272	100
46	16,331					1,683	310	260	1,113		56,608	55,271	1,337	102,289	101
161	50,150			3	420	4,813	790	663	3,360		137,457	136,247	1,210	275,592	102
19	5,006					621	192	194	235		47,425	47,280	145	70,467	103
87	34,055	11	2,288	2	265	13,373	5,318	1,337	6,718		244,754	237,053	7,701	387,146	104
65	25,662			1	72	6,467	1,233	954	4,280		213,069	208,804	4,265	308,214	105
66	21,007	13	2,278	3	234	7,467	648	812	6,007		169,157	165,888	3,269	250,875	106
50	15,130	1	220	1	120	4,044	1,866	396	1,682	100	86,353	84,869	1,484	139,582	107
121	41,102			2	220	2,742	460	711	1,571		328,466	326,176	2,290	455,927	108
51	15,179	4	955	1	75	4,277	1,590	541	2,106	40	89,491	87,219	2,272	158,435	109
24	8,270			2	215	1,617	420	557	640		106,633	106,024	609	148,125	110
37	19,351	4	750			6,465	292	567	5,601	5	148,062	143,268	4,794	214,164	111
243	95,582	31	6,100	6	1,130	20,407	2,789	2,339	15,067	212	496,486	484,054	12,432	772,324	112
711	281,241	111	24,605	13	1,302	94,466	11,329	6,137	65,178	11,822	991,898	977,897	14,001	1,782,391	113
32	11,099			3	150	1,821	671	363	787		112,393	110,510	1,883	156,597	114
25	7,280					1,133	388	283	462		65,834	65,364	470	91,248	115
83	28,551	10	2,085	12	1,555	6,280	871	974	3,935	500	149,775	146,935	2,840	248,663	116
261	90,886	5	810	1	56	7,950	1,292	3,220	3,388	50	341,011	340,111	900	610,526	117
75	24,640					1,294	89	858	347		84,536	83,944	592	151,373	118
140	53,213	22	3,430			64,007	3,354	11,404	49,249		389,205	367,704	21,501	687,399	119

SPECIFIED INDUSTRIES: 1900.

51,101	$20,216,990	9,174	$1,887,904	2,687	$329,291	$19,581,630	$855,998	$627,392	$16,682,288	$1,415,952	$82,773,415	$80,610,225	$2,163,190	$154,605,115	1
679	299,846			1	260	148,009	914	12,072	135,023		466,193	455,876	10,317	1,320,714	2
14	8,491	15	3,486			3,978	1,684	121	1,523	650	24,043	23,867	176	55,165	3
6	1,986	5	775	2	288	2,189	372	35	1,782		13,281	13,213	18	23,791	4
2	930					138	90	32	16		3,170	3,089	81	10,115	5
46	16,510			7	856	9,995	6,677	282	2,711	325	37,941	37,004	937	113,640	6
716	270,320			12	1,552	60,789	41,144	6,000	10,028	3,617	467,581	434,581	32,950	1,645,425	7
4	1,590	8	1,250			716	480	43	193		2,977	2,877	100	11,169	8
14	5,969					1,482	570	37	875		13,714	13,660	54	26,458	9
125	46,491	2	360	1	96	24,845	19,436	1,422	3,061	926	109,256	107,149	2,107	352,495	10
94	30,629	69	14,664	44	5,526	64,313	3,294	14,397	4,842	41,780	456,018	454,404	1,614	630,358	11
24	9,944	11	2,750			7,920	2,140	757	5,023		98,125	97,961	164	163,668	12
551	172,787	14	3,132	65	11,054	9,581	1,100	383	8,098		379,074	366,613	12,461	692,894	13
25	10,984	8	1,800			3,095	1,466	11	1,618		58,877	57,335	1,542	89,760	14
492	198,427	106	15,933	8	1,558	75,652	32,976	7,436	35,240		837,811	812,017	25,794	1,644,415	15
874	246,757			44	4,790	23,718	4,045	4,127	14,021	1,525	127,603	32,898	94,705	630,839	16
161	41,604	15	3,754	4	532	30,087	2,516	529	11,042	16,000	282,402	281,527	875	489,763	17
1,450	668,456			1	276	641,915	14,996	3,113	17,196	606,610	1,639,174	1,637,118	2,056	3,617,952	18
5	740	3	600			459	260	41	158		551	526	25	4,404	19
534	180,694	22	3,926	22	2,476	57,251	181	4,419	52,651		426,005	417,373	8,632	814,235	20
1,628	615,812	14	3,405	35	6,087	144,774	13,195	12,454	118,625	500	1,500,815	1,488,568	17,247	2,866,699	21
3,564	1,888,893	8	2,885			55,984	35	16,185	39,814		2,267,578	2,218,056	49,522	4,248,029	22
9	2,726					1,992	1,849	10	133		27,440	27,300	140	40,877	23
14	4,916	2	160	1	130	1,261	826	59	376		55,447	55,077	370	77,035	24
718	338,872	800	143,735	114	10,388	315,489	60,087	7,000	84,484	163,918	1,406,203	1,399,002	7,201	2,313,667	25
602	237,620	1,993	444,795	106	11,603	259,040	25,898	6,518	108,519	118,105	1,851,051	1,839,310	11,741	3,420,365	26

TABLE 7.—MANUFACTURES BY

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
27	Clothing, women's, dressmaking	274	$210,132	$23,950	$38,130	$31,023	$117,029	305	22	$18,664	1,058	$236,109
28	Clothing, women's, factory product	9	17,875			3,575	14,300	15	3	2,190	91	21,844
29	Coffee and spice, roasting and grinding.	5	75,000	8,000	10,000	11,600	50,400	6	4	8,600	19	14,454
30	Coke	5	198,533	1,900	17,800	166,078	12,755		8	5,600	126	47,806
31	Confectionery	50	423,217	19,700	35,485	74,507	293,525	52	89	68,526	570	123,074
32	Cooperage	81	1,041,079	96,570	87,014	150,456	707,039	90	44	64,392	1,289	318,997
33	Cordage and twine	4	403,653	1,500	40,200	178,647	183,306	2	18	21,804	384	116,312
34	Cotton goods	6	1,867,605	77,016	273,428	869,363	647,798		24	33,761	1,351	280,407
35	Dyeing and cleaning	26	24,397	2,850	6,150	11,615	3,782	26	4	2,160	47	15,188
36	Dyeing and finishing textiles	3	161,239	7,800	28,922	55,455	69,062	3	7	9,090	116	45,225
37	Electrical apparatus and supplies	4	76,077			34,811	41,266	3	7	6,379	56	24,396
38	Electrical construction and repairs	16	25,125	400	600	4,600	19,525	20	4	2,594	43	19,353
39	Electroplating	4	5,220	1,000	250	3,550	420	6			7	2,764
40	Engraving, steel, including plate printing.	3	16,764			12,170	4,594	3	3	400	24	13,125
41	Fertilizers	4	335,974	20,000	27,500	40,783	247,686	2	16	17,650	89	39,738
42	Flouring and grist mill products	1,145	4,928,928	440,784	964,408	1,893,110	1,630,626	1,465	171	125,969	1,134	483,594
43	Food preparations	7	7,525	1,350	1,300	1,785	3,090	8	2	752	10	3,754
44	Foundry and machine shop products	91	3,445,869	468,617	533,552	890,895	1,552,305	86	225	230,134	2,790	1,182,942
45	Fruits and vegetables, canning and preserving.	8	95,600	6,000	18,150	34,400	37,050	7	12	5,840	231	36,903
46	Fur goods	4	18,465	700	300	1,065	16,400	6	4	2,288	35	13,976
47	Furniture, cabinetmaking, repairing, and upholstering.	66	72,102	12,815	12,215	11,490	35,582	81	3	816	97	39,747
48	Furniture, factory product	24	1,352,518	93,902	139,223	204,855	914,538	28	72	65,981	918	333,238
49	Gas, illuminating and heating	17	4,495,722	304,077	310,185	3,570,690	310,770		60	51,129	279	121,744
50	Glass, cutting, staining, and ornamenting.	4	14,635			910	13,725	5	1	200	19	13,480
51	Hairwork	4	2,870			195	2,675	5			9	1,545
52	Hats and caps, not including fur hats and wool hats.	5	13,975	1,200	1,850	2,300	8,625	7	2	1,950	26	7,342
53	House furnishing goods, not elsewhere specified.	3	34,785			5,500	29,285	6			44	11,678
54	Ice, artificial	31	1,200,117	91,890	241,474	763,581	103,172	22	52	32,600	192	84,321
55	Instruments, professional and scientific	3	11,030			1,715	9,315	3	1	780	7	3,148
56	Iron and steel	8	4,198,987	181,998	918,000	1,132,857	1,966,132		95	138,504	2,402	1,144,782
57	Ironwork, architectural and ornamental.	10	281,273	34,600	56,968	98,012	91,693	8	30	25,256	193	63,085
58	Jewelry	4	13,412			3,712	9,700	5	1	936	29	14,262
59	Leather, tanned, curried, and finished	23	4,681,389	249,842	597,407	439,040	3,395,100	17	53	61,063	810	321,658
60	Lime and cement	12	604,969	134,961	221,446	104,465	144,097	12	13	7,440	313	106,201
61	Liquors, distilled	177	12,280,054	1,204,073	2,250,022	3,065,812	5,760,147	188	248	327,657	1,112	559,439
62	Liquors, malt	26	5,131,654	504,115	1,870,761	1,310,336	1,446,442	14	124	192,525	591	327,242
63	Lock and gun smithing	27	30,305	4,110	4,655	12,145	9,395	31	1	600	25	11,003
64	Looking-glass and picture frames	23	44,320	6,500	13,350	3,840	20,630	32	3	800	24	11,376
65	Lumber and timber products	1,280	9,805,404	2,644,006	585,097	2,272,310	4,303,991	1,699	337	258,910	7,549	2,477,696
66	Lumber, planing mill products, including sash, doors, and blinds.	90	1,508,038	177,688	212,092	288,405	829,853	123	80	57,694	981	379,273
67	Malt	3	24,500			3,000	21,500	3	3	4,200	26	15,631
68	Marble and stone work	35	194,788	42,477	16,734	67,323	68,254	61	10	7,385	296	110,057
69	Masonry, brick and stone	88	409,424	37,343	24,332	60,823	286,926	110	21	19,140	783	381,081
70	Mattresses and spring beds	12	16,555	1,450	1,550	2,630	10,925	16	7	4,746	31	13,421
71	Millinery, custom work	353	623,442	52,085	109,830	22,989	438,538	417	76	32,133	762	186,766
72	Mineral and soda waters	30	167,555	36,655	24,770	57,030	49,100	37	10	7,424	88	34,657
73	Monuments and tombstones	64	353,690	62,396	57,120	27,680	206,494	83	40	54,217	253	122,670
74	Musical instruments, pianos and materials.	4	118,250	9,500	15,000	36,250	57,500	4	3	1,440	43	21,885
75	Oil, cottonseed and cake	3	2,029,296	40,680	165,546	309,656	1,513,414		30	52,877	180	59,070
76	Optical goods	4	10,100		300	1,350	8,450	3	2	1,250	7	2,622
77	Painting, house, sign, etc	226	181,512	27,146	29,045	36,109	89,212	280	8	4,328	656	287,193
78	Paints	9	174,586	20,422	25,500	27,837	100,827	7	12	12,900	52	20,326
79	Paper hanging	57	182,370	16,760	25,625	6,102	133,883	81	18	10,678	249	104,841
80	Patent medicines and compounds	34	358,951	20,440	46,700	30,372	256,439	39	58	59,504	189	64,518
81	Paving and paving materials	42	641,986	240,015	37,950	169,117	194,904	43	43	32,913	1,008	367,374
82	Perfumery and cosmetics	5	4,514			930	3,584	5			7	1,450
83	Photography	112	105,754	4,445	7,722	58,496	35,091	117	16	3,091	79	33,515
84	Pickles, preserves, and sauces	4	146,115	10,500	34,000	80,101	71,514	5	20	19,360	262	36,850
85	Pipes, tobacco	3	21,600	2,400	2,900	12,000	4,300	5	9	7,300	73	14,220
86	Plastering and stucco work	48	36,932	8,960	11,265	4,375	12,332	56	4	2,928	118	63,570
87	Plumbing, and gas and steam fitting	153	508,332	28,936	40,775	56,813	381,808	179	50	28,845	621	271,268
88	Pottery, terra cotta, and fire-clay products.	16	698,560	118,553	233,852	95,783	250,372	11	47	45,416	841	233,253
89	Printing and publishing, book and job	82	737,502	37,000	20,425	398,702	281,375	83	73	64,110	709	275,438
90	Printing and publishing, newspapers and periodicals.	248	2,683,855	294,025	290,240	929,157	1,170,438	225	367	325,851	1,154	521,739
91	Pumps, not including steam pumps	3	5,800	1,500	500	2,450	1,350	4			2	986
92	Roofing and roofing materials	60	209,180	28,910	47,915	34,955	97,400	63	19	12,320	206	88,534
93	Saddlery and harness	218	1,278,214	62,430	96,665	85,343	1,033,776	261	86	66,302	809	348,162
94	Sewing machine repairing	10	5,161	900	1,500	1,109	1,652	7	2	1,520	10	2,806
95	Ship and boat building, wooden	10	60,377	12,100	8,300	12,075	27,902	14	6	3,785	104	48,090
96	Shirts	9	51,679			7,575	44,104	13	16	7,400	164	37,554

SPECIFIED INDUSTRIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
5	$2,664	1,025	$230,671	28	$2,774	$40,440	$28,539	$1,022	$9,759	$1,120	$330,475	$327,257	$3,218	$364,130	27
10	4,400	81	17,444			8,131	1,683		6,433	15	78,300	77,918	382	130,756	28
18	14,304	1	150			4,043	1,795	742	1,506		132,592	131,323	1,269	178,420	29
126	47,806					7,393	50	720	6,623		75,234	75,014	220	161,454	30
223	96,058	342	25,994	5	1,022	77,985	22,153	2,955	52,877		589,149	580,361	8,788	1,214,816	31
1,286	318,634			3	363	39,741	3,401	7,037	28,593	710	894,701	891,955	2,746	1,563,078	32
250	91,596	105	23,121	29	1,595	35,287	1,430	1,433	32,424		268,587	265,212	3,375	478,701	33
430	126,130	591	116,081	330	38,196	105,796	2,078	9,843	83,349	10,526	972,244	951,707	20,537	1,663,712	34
25	10,306	19	4,600	8	282	10,044	7,343	508	1,708	480	8,486	6,834	1,652	54,959	35
88	39,987	25	4,138	8	1,100	9,702	360	640	8,702		84,023	77,543	6,480	179,123	36
37	21,801	18	2,461	1	134	11,526	2,325	142	8,029	1,030	66,285	65,186	1,099	117,680	37
40	18,982			3	371	3,507	2,398	187	800	122	37,712	37,427	285	78,140	38
6	2,608			1	156	404	263	26	115		2,430	1,678	752	9,650	39
23	13,047			1	78	1,828	804	97	927		2,002	1,261	741	26,798	40
89	39,738					16,508	2,400	2,938	11,170		166,215	161,835	4,380	321,245	41
1,131	483,032	2	442	1	120	295,982	8,836	38,535	246,446	2,165	12,018,998	11,874,647	144,351	14,515,161	42
7	3,416			3	338	1,301	680	46	575		23,512	22,182	1,330	40,722	43
2,779	1,180,220			11	2,722	246,088	13,465	21,330	208,478	2,815	2,010,857	1,934,822	76,035	4,434,610	44
89	19,248	105	14,094	37	3,561	10,100		254	9,846		75,346	73,781	1,565	192,787	45
6	4,600	29	9,376			2,794	2,106	50	463	175	19,611	19,550	61	52,000	46
91	38,895	4	596	2	256	8,312	6,260	478	1,274	300	54,157	52,842	1,315	158,894	47
885	324,813	1	225	32	8,200	169,665	9,494	7,743	83,428	69,000	647,943	638,072	9,871	1,504,083	48
279	121,744					194,579	60	83,945	110,574		139,194	136,221	2,973	670,804	49
19	13,480					2,407	1,420	8	979		9,511	9,375	136	34,650	50
1	200	7	1,145	1	200	1,211	674	12	525		2,787	2,740	47	7,815	51
13	5,176	13	2,166			1,396	595	61	740		18,802	18,717	85	47,295	52
18	7,522	26	4,156			7,095	2,035	40	5,020		64,960	64,645	315	112,400	53
188	84,041			4	280	64,879	555	8,961	55,363		81,564	23,484	58,080	454,497	54
7	3,148					624	396	37	91	100	1,241	955	286	10,372	55
2,387	1,141,862			15	2,920	176,846	9,047	13,246	154,553		4,324,100	3,524,913	799,187	6,876,093	56
192	62,968			1	117	22,206	3,219	2,030	16,957		126,926	123,360	3,566	249,870	57
23	13,100	4	850	2	312	1,402	996	36	330	40	17,110	16,873	237	40,478	58
810	321,658					112,659	1,950	18,455	92,254		2,881,896	2,865,092	16,804	3,757,016	59
308	105,897			5	304	30,493	260	2,627	19,606	8,000	114,815	84,856	29,959	296,949	60
1,079	554,319	29	4,628	4	492	4,182,373	10,231	67,205	4,094,989	9,948	3,605,316	3,399,930	205,386	9,786,527	61
573	323,662	3	364	15	3,216	1,500,606	1,760	30,222	1,468,624		630,969	569,782	61,187	3,186,627	62
22	10,343	2	400	1	260	3,897	2,874	224	799		13,919	13,451	468	50,715	63
22	11,076	1	150	1	150	3,496	2,572	275	589	60	36,819	36,572	247	75,357	64
7,385	2,451,590	4	887	160	25,219	379,074	18,821	50,505	309,748		7,379,148	7,378,266	882	13,774,911	65
963	376,439	2	250	16	2,584	101,882	7,459	13,115	40,057	41,251	1,089,331	1,070,790	18,541	1,891,517	66
26	15,631					14,768	3,900	1,424	9,444		160,126	155,480	4,646	203,713	67
294	109,732	1	200	1	125	14,770	5,759	1,157	7,379	475	98,016	93,880	4,136	328,908	68
780	380,351			3	730	156,503	3,712	1,588	17,057	134,206	657,955	646,258	11,697	1,410,121	69
28	12,783	3	688			2,049	1,337	67	541	104	41,391	41,076	315	80,237	70
12	3,615	743	182,369	7	782	81,208	57,538	4,674	18,976	20	762,683	758,103	4,580	1,492,960	71
79	32,474			9	2,183	12,441	3,872	1,195	7,374		62,736	61,268	1,468	185,720	72
252	122,598			1	72	26,972	4,793	2,010	9,419	10,750	369,923	368,519	1,404	678,350	73
42	21,705			1	180	2,258	120	426	912	800	70,770	68,580	2,190	112,920	74
166	56,470	8	1,664	6	936	68,632		1,735	66,897		4,225,390	4,214,197	11,193	4,683,343	75
7	2,622					3,803	1,340	113	2,175	175	12,316	12,141	175	28,100	76
643	284,081	1	100	12	3,012	25,738	12,959	1,432	9,187	2,160	244,646	244,059	587	799,322	77
46	18,826	6	1,500			7,848	1,440	838	5,570		263,952	261,261	2,691	359,085	78
236	103,103	1	132	12	1,606	29,628	11,483	1,228	12,567	4,350	144,506	143,972	534	373,102	79
142	56,505	43	7,631	4	382	365,007	14,674	2,220	342,113	6,000	327,573	322,989	4,584	1,099,774	80
1,003	366,684			5	690	38,953	4,570	1,504	24,786	8,093	398,900	386,089	12,811	1,107,515	81
5	1,338			2	112	932	352	25	555		2,715	2,615	100	7,967	82
63	30,804	12	2,347	4	364	27,730	18,288	913	6,674	1,855	70,177	68,733	1,444	238,842	83
122	22,450	140	14,400			9,892	1,020	782	8,090		205,989	203,157	2,832	319,428	84
51	12,350	10	920	12	950	1,098	360	220	518		7,897	6,297	1,600	40,640	85
118	63,570					3,718	1,661	273	1,784		74,380	73,752	628	199,399	86
599	268,443			22	2,825	75,371	26,325	3,153	23,383	22,510	822,756	818,663	4,093	1,470,739	87
801	226,569	10	1,729	30	4,955	41,157	708	2,893	36,670	886	198,659	127,120	71,539	724,255	88
518	239,243	163	32,324	28	3,871	70,835	28,074	4,143	34,768	3,850	369,095	357,692	11,403	1,000,479	89
1,015	491,715	102	26,260	37	3,764	825,093	50,601	12,273	189,450	72,769	445,000	418,835	26,165	2,240,724	90
2	986					432	222	45	165		2,884	2,881	3	11,745	91
203	88,134			3	400	24,699	6,117	1,954	6,508	10,120	316,265	313,676	2,589	546,910	92
721	333,270	41	8,234	47	6,658	85,095	32,371	7,822	44,819	83	1,194,950	1,186,110	8,840	2,119,799	93
7	2,258	2	392	1	156	1,216	929	73	149	65	5,418	5,309	109	14,503	94
104	48,090					7,804	245	564	6,199	796	20,775	20,076	699	97,492	95
20	7,864	137	29,234	7	456	10,044	3,185	30	6,829		55,345	52,919	2,426	119,821	96

TABLE 7.—MANUFACTURES BY

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
97	Slaughtering and meat packing, wholesale.	13	$70,870	$15,300	$14,300	$6,000	$35,270	16			42	$19,434
98	Slaughtering, wholesale, not including meat packing.	15	1,256,106	85,160	157,550	210,133	803,263	15	62	$51,799	469	194,837
99	Soap and candles	4	211,201	8,930	44,676	53,311	104,284	5	15	13,224	62	21,246
100	Sporting goods	5	25,310	4,800	3,300	9,200	8,010	5	1	1,350	9	5,348
101	Stamped ware	4	67,625			19,400	48,225	7	1	900	67	24,700
102	Sugar and molasses, refining	5	126,300	18,500	24,700	22,100	61,000	10	12	8,200	31	14,979
103	Tinsmithing, coppersmithing, and sheet-iron working.	210	652,987	65,608	107,855	193,473	286,051	252	43	26,831	644	251,017
104	Tobacco, chewing, smoking, and snuff	59	3,485,793	86,938	580,984	726,253	2,091,618	58	493	524,758	3,187	850,018
105	Tobacco, cigars and cigarettes	180	1,105,303	77,650	95,395	24,126	908,132	200	81	67,677	1,349	388,064
106	Tobacco, stemming and rehandling	98	4,860,629	163,285	472,940	220,240	4,004,164	143	155	113,189	2,302	439,665
107	Trunks and valises	8	146,320	11,000	22,000	9,176	104,144	13	11	8,480	154	51,974
108	Upholstering materials	12	263,666	16,504	29,150	31,516	186,496	18	5	2,800	199	42,510
109	Varnish	3	187,749	8,500	25,775	13,807	139,667		32	26,554	41	19,940
110	Vinegar and cider	9	368,900	30,000	47,500	59,098	232,307	22	99	62,906	66	30,620
111	Watch, clock, and jewelry repairing	190	189,345	10,505	20,920	49,095	108,825	212	5	2,228	106	49,737
112	Wirework, including wire rope and cable.	9	12,720			5,500	7,220	12	5	2,880	39	13,294
113	Wood, turned and carved	18	99,670	11,705	16,285	39,360	32,320	17	15	12,728	284	103,062
114	Woolen goods	36	1,588,816	32,956	157,195	340,422	1,058,244	13	20	28,972	618	144,874
115	All other industries[1]	102	3,548,869	260,175	493,207	923,008	1,871,979	83	189	203,558	2,508	970,222

[1] Embraces ammunition, 2; artificial limbs, 1; axle grease, 1; bags, other than paper, 1; belting and hose, leather, 1; bicycles and tricycles, 1; bluing, 1; boot and shoe cut stock, 1; boxes, cigar, 2; boxes, fancy and paper, 2; bridges, 2; buttons, 1; cars and general shop construction and repairs by street railroad companies, 1; cars, steam railroad, not including operations of railroad companies, 1; charcoal, 1; chemicals, 1; china decorating, 1; coffins, burial cases, and undertakers' goods, 1; cordials and sirups, 1; cutlery and edge tools, 2; dentists' materials, 1; druggists' preparations, not including prescriptions, 2; dye stuffs and extracts, 1; engraving and diesinking, 2; fancy articles, not elsewhere specified, 1; flavoring extracts, 2; foundry supplies, 1; furnishing goods, men's, 1; gas machines and meters, 2; grease and tallow, 2; hammocks, 1; hand stamps, 2; hardware, 2; hones and whetstones, 1; iron and steel, bolts, nuts, washers, and rivets, 1; iron and steel, forgings, 1; jute and jute goods, 1; kaolin and other earth grinding, 1; lamps and reflectors, 1; leather goods, 1; linen goods, 1;

TABLE 8.—MANUFACTURES IN CITIES

COVINGTON.

1	All industries	403	$4,729,786	$452,285	$719,298	$1,648,406	$1,909,797	435	217	$214,360	3,898	$1,539,089
2	Bicycle and tricycle repairing	3	2,025			450	1,575	5			8	750
3	Blacksmithing and wheelwrighting	19	8,965	1,300	1,850	2,740	3,075	22			21	7,620
4	Boots and shoes, custom work and repairing.	27	11,020	3,050	4,200	2,115	1,655	28			7	2,490
5	Bread and other bakery products	20	15,990	2,700	3,400	5,015	4,875	26			31	12,425
6	Brick and tile	3	20,725	6,000	3,375	4,350	7,000	4	1	1,200	25	6,860
7	Carpentering	28	40,135	5,850	4,300	4,960	25,025	36			83	47,496
8	Carriages and wagons	4	22,650	6,000	4,500	3,000	9,150	6			22	9,420
9	Clothing, men's, custom work and repairing.	15	35,435	4,350	5,700	4,810	20,575	15			24	10,082
10	Clothing, men's, factory product	82	31,582	4,117	6,850	13,690	6,925	88			572	127,396
11	Clothing, women's, dressmaking	6	2,640			540	2,100	6			15	3,100
12	Confectionery	3	3,200			1,550	1,650	4	2	3,750	5	1,255
13	Dyeing and cleaning	3	4,850	1,500	2,250	900	200	3			5	1,040
14	Foundry and machine shop products	9	295,608	21,600	23,803	114,921	135,284	6	30	23,026	297	146,512
15	Furniture, cabinetmaking, repairing, and upholstering.	4	4,775	2,500	1,500	140	635	4			2	770
16	Liquors, malt	3	765,180	113,272	217,218	168,159	266,531		18	28,890	84	51,970
17	Lumber, planing mill products, including sash, doors, and blinds.	3	123,512	24,944	23,950	25,700	48,918	2	3	2,000	55	23,898
18	Marble and stone work	3	11,900	3,000	800	6,100	2,000	4			22	11,120
19	Masonry, brick and stone	6	37,300	3,000	1,000	4,900	28,400	9			49	26,500
20	Millinery, custom work	12	49,585	7,000	5,000	1,285	36,300	13			40	11,714
21	Painting, house, sign, etc	17	15,620	2,075	2,125	1,720	9,700	17	2	1,168	52	20,832
22	Plumbing, and gas and steam fitting	13	19,725	2,500	1,500	2,925	12,800	13	1	300	45	24,528
23	Printing and publishing, book and job	6	16,325			11,600	4,725	7			13	5,527
24	Printing and publishing, newspapers and periodicals.	3	10,025			6,800	3,225	3	5	8,075	23	7,644
25	Roofing and roofing materials	7	13,929	3,210	3,190	2,520	5,009	7	2	516	17	8,260
26	Saddlery and harness	6	14,025	2,000	3,000	1,950	7,075	7			7	2,863
27	Slaughtering and meat packing, wholesale.	3	16,300	1,000	1,000	800	13,500	5			12	5,844
28	Tinsmithing, coppersmithing, and sheet-iron working.	14	95,533	1,650	2,400	63,848	27,635	17	2	780	117	36,085
29	Tobacco, chewing, smoking, and snuff	4	172,340	3,100	13,000	21,800	134,440	1	42	39,573	128	36,155
30	Tobacco, cigars and cigarettes	15	44,697	9,400	8,850	847	25,600	17	4	2,725	37	14,629
31	Watch, clock, and jewelry repairing	7	2,600	500	1,000	550	550	7			7	2,500
32	All other industries[1]	55	2,821,590	216,667	373,537	1,167,721	1,063,665	53	105	102,357	2,078	871,803

[1] Embraces awnings, tents, and sails, 1; boot and shoe uppers, 1; boxes, wooden packing, 2; carpets, rag, 1; cars and general shop construction and repairs by steam railroad companies, 2; clothing, women's, factory product, 1; cooperage, 1; cordage and twine, 1; cotton goods, 1; dyeing and finishing textiles, 1; flouring and grist mill products, 1; foundry supplies, 1; furniture, factory product, 2; gas, illuminating and heating, 1; hairwork, 1; hats and caps, not including fur hats and wool hats, 1; ice, artificial, 1; iron and steel, 2; ironwork, architectural and ornamental, 2; jewelry, 1; leather, tanned, curried, and finished, 1; liquors, distilled, 1; looking-glass and picture frames, 2; mineral and soda waters, 1; monuments and tombstones, 2; paints, 2; paper hanging, 1; perfumery and cosmetics, 2;

SPECIFIED INDUSTRIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
42	$19,434					$6,269	$420	$874	$4,947	$28	$545,373	$543,778	$1,595	$635,685	97
465	194,277	4	$560			99,425	2,240	6,398	90,787		3,899,248	3,872,513	26,735	5,081,482	98
49	17,547	13	3,699			13,583		296	13,287		188,207	184,888	3,319	236,538	99
9	5,348					1,363	408	81	874		2,419	2,279	140	19,566	100
68	23,790	2	520	2	$390	16,130	1,180	50	14,900		86,198	85,445	753	162,500	101
29	14,439	1	360	1	180	3,432	350	267	2,815		287,174	285,905	1,269	361,900	102
582	239,523	5	786	57	10,708	52,503	24,746	5,475	22,107	175	583,864	575,150	8,714	1,219,360	103
2,202	670,054	567	137,549	418	42,415	7,182,022	15,956	22,556	7,143,510		5,221,257	5,180,005	41,252	14,948,192	104
671	274,254	452	91,200	226	22,610	296,081	20,004	4,951	271,126		514,943	512,362	2,581	1,506,559	105
1,656	346,769	382	63,979	264	28,917	147,782	16,934	19,643	109,105	2,100	4,025,464	4,008,517	16,947	5,467,360	106
139	49,405	15	2,569			25,659	3,738	1,036	20,885		99,144	98,236	908	236,958	107
197	42,210			2	300	15,390	1,990	1,258	12,142		291,804	289,259	2,545	401,289	108
41	19,940					3,841	240	1,061	2,540		205,668	204,674	994	334,978	109
53	28,346	11	1,993	2	281	25,536	2,748	1,753	21,035		214,572	210,932	3,640	462,078	110
101	49,021	1	300	4	416	37,035	19,289	1,528	4,408	11,810	55,950	54,164	1,786	282,195	111
89	13,294					3,222	2,048	40	1,134		16,652	16,487	165	53,662	112
283	102,737			1	325	5,207	1,766	615	2,826		144,006	141,230	2,776	342,525	113
149	50,350	364	79,966	105	14,558	48,644	556	6,365	41,723		405,775	397,162	8,613	746,684	114
1,947	869,484	400	82,550	161	18,188	224,378	24,407	11,208	168,804	19,959	2,703,012	2,631,702	71,310	4,891,807	115

lithographing and engraving, 1; millinery and lace goods, 2; mirrors, 2; models and patterns, 2; mucilage and paste, 2; musical instruments and materials, not specified, 2; musical instruments, organs and materials, 2; oil, not elsewhere specified, 2; oleomargarine, 1; photographic materials, 2; photolithographing and photoengraving, 2; plumbers' supplies, 1; pulp, from fiber other than wood, 1; refrigerators, 2; safes and vaults, 1; saws, 2; scales and balances, 1; sewing machines and attachments, 1; show cases, 1; silversmithing, 2; smelting and refining, not from the ore, 1; soda water apparatus, 1; steam fittings and heating apparatus, 1; steam packing, 1; stencils and brands, 2; stereotyping and electrotyping, 1; surgical appliances, 1; tin and terne plate, 1; umbrellas and canes, 2; watch cases, 1; windmills, 1; window shades, 1; woodenware, not elsewhere specified, 1; wool pulling, 1; worsted goods, 1.

BY SPECIFIED INDUSTRIES: 1900.

COVINGTON.

2,992	$1,365,411	760	$151,834	146	$21,844	$832,705	$52,004	$39,260	$640,956	$100,485	$2,983,976	$2,865,832	$118,144	$6,610,082	1
3	750					550	425		125		3,200	3,175	25	7,600	2
19	7,345			2	275	1,996	1,848	83	70		8,425	7,830	595	30,798	3
6	2,390	1	100			1,574	1,203	178	193		6,947	6,833	114	24,195	4
24	11,159	6	1,110	1	156	3,846	3,090	138	618		44,642	43,315	1,327	86,200	5
21	6,440			4	420	1,463	325	250	888		3,162	242	2,920	19,850	6
83	47,496					73,052	1,065	337	381	71,269	100,934	100,868	66	276,748	7
21	9,300			1	120	1,960	700	300	960		7,303	7,055	248	25,823	8
16	8,720	4	912	4	450	20,766	2,156	405	1,580	16,625	45,390	45,190	200	96,955	9
79	33,919	471	91,411	22	2,066	7,565	4,647	236	1,577	1,105	1,420	12	1,408	188,517	10
		13	2,885	2	215	613	438	30	95	50	2,470	2,425	45	9,074	11
2	600	1	155	2	500	1,604	720	39	845		12,296	12,191	105	26,520	12
3	550	2	490			380	175	50	155		470	370	100	3,700	13
297	146,512					20,209	2,002	1,527	16,680		171,380	164,018	7,362	410,470	14
2	770					286	228	48	10		1,891	1,871	20	5,370	15
84	51,970					150,859		6,581	144,278		65,578	55,346	10,232	397,458	16
55	23,898					4,333		968	3,365		60,540	58,978	1,562	99,861	17
22	11,120					1,162	750	72	190	150	10,100	9,550	550	29,500	18
49	26,500					1,196	457	85	654		33,100	33,010	90	75,065	19
		40	11,714			3,299	1,355	145	1,799		47,850	47,800	50	81,700	20
51	20,582			1	250	1,595	1,118	147	330		14,170	14,140	30	55,237	21
45	24,523					2,979	1,861	147	971		30,895	30,670	225	75,350	22
12	5,215	1	312			1,682	1,218	89	375		7,178	6,742	436	19,145	23
22	7,519	1	125			2,530	720	10	1,540	260	6,091	5,676	415	37,830	24
17	8,260					923	433	100	390		18,966	18,806	160	37,105	25
6	2,713			1	150	1,992	682	217	1,093		6,794	6,634	160	16,600	26
12	5,844					570	300	70	200		229,431	229,031	400	257,080	27
72	26,885			45	9,200	5,295	3,859	834	602		112,395	111,605	790	180,745	28
79	25,955	49	10,200			261,934	8,569	973	252,442		151,162	149,897	1,265	541,158	29
32	14,039			5	590	10,151	957	273	8,921		23,520	23,462	58	66,283	30
7	2,500					580	505		75		1,315	1,300	15	9,450	31
1,851	831,937	171	32,420	56	7,452	245,711	10,203	24,928	199,554	11,026	1,754,961	1,667,790	87,171	3,418,695	32

photography, 1; plastering and stuccowork, 1; pottery, terra cotta, and fire-clay products, 1; safes and vaults, 1; sewing machine repairing, 1; ship and boat building, wooden, 1; slaughtering, wholesale, not including meat packing, 1; stamped ware, 1; tin and terne plate, 1; tobacco, stemming and rehandling, 1; trunks and valises, 1; upholstering materials, 1; vinegar and cider, 1; wirework, including wire rope and cable, 2; wood, turned and carved, 1; woolen goods, 1; wool pulling, 1.

TABLE 8.—MANUFACTURES IN CITIES

LEXINGTON.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
1	All industries	271	$1,532,378	$119,116	$176,904	$552,691	$683,667	290	161	$108,230	1,441	$545,118
2	Bicycle and tricycle repairing	4	8,000			2,350	5,650	4			7	2,540
3	Blacksmithing and wheelwrighting	22	25,011	5,500	2,925	3,455	13,131	24	1	150	28	10,514
4	Boots and shoes, custom work and repairing.	10	3,773	772	125	1,204	1,672	10			12	3,838
5	Bread and other bakery products	7	19,375	5,600	5,900	3,195	4,680	8	4	1,962	21	6,522
6	Carpentering	12	37,712		400	1,490	35,822	15	1	416	73	32,740
7	Carriages and wagons	7	56,311	10,000	17,700	4,450	24,161	9	2	530	44	19,635
8	Clothing, men's, custom work and repairing.	12	30,362	300	600	2,075	27,387	13	3	2,786	57	27,697
9	Clothing, women's, dressmaking	26	42,082	4,350	7,350	2,692	27,690	29	8	11,200	135	27,414
10	Cooperage	4	23,345	2,500	2,500	2,200	16,145	5	2	1,080	31	10,821
11	Flouring and grist mill products	4	118,767	8,000	21,000	26,100	63,667	2	9	8,000	21	12,341
12	Foundry and machine shop products	4	24,263	1,000	800	13,100	9,363	4	4	3,630	20	6,532
13	Furniture, cabinetmaking, repairing, and upholstering.	7	6,580		260	906	5,414	10			6	1,263
14	Lock and gun smithing	3	3,700			1,650	2,050	4			8	1,874
15	Lumber, planing mill products, including sash, doors, and blinds.	4	109,680	9,500	13,500	19,286	67,394	4	12	10,040	125	54,046
16	Marble and stone work	3	3,810	585	325	600	2,300	4			9	9,124
17	Masonry, brick and stone	6	5,350	300	500	1,380	3,170	7			42	15,190
18	Millinery, custom work	15	31,872	3,750	2,200	1,212	24,710	18	5	2,151	38	6,441
19	Painting, house, sign, etc	9	18,145			1,345	16,800	11	3	1,560	66	25,836
20	Photography	6	7,487			4,800	2,687	7	2	840	5	1,696
21	Plumbing, and gas and steam fitting	7	29,876			3,333	26,543	9	9	4,815	41	17,858
22	Printing and publishing, book and job	10	41,550			24,350	17,200	8	7	2,168	54	18,531
23	Printing and publishing, newspapers and periodicals.	16	82,561			27,750	54,811	6	40	29,062	67	28,891
24	Roofing and roofing materials	3	2,644			575	2,069	4			8	3,100
25	Saddlery and harness	9	20,164	250	350	2,150	17,414	10			23	10,953
26	Tinsmithing, coppersmithing, and sheet-iron working.	11	27,298	1,300	3,600	4,983	17,415	18	5	1,820	35	12,669
27	Upholstering materials	6	126,478	10,204	18,700	13,386	84,188	9	4	1,700	119	19,471
28	Watch, clock, and jewelry repairing	11	12,780			3,850	8,930	12	1	200	14	8,024
29	All other industries[1]	33	613,402	55,205	78,169	378,824	101,204	31	39	24,120	337	139,557

[1] Embraces awnings, tents, and sails, 1; brick and tile, 1; cars and general shop construction and repairs by steam railroad companies, 2; cheese, butter, and condensed milk, factory product, 1; confectionery, 2; dyeing and cleaning, 2; electrical construction and repairs, 1; gas, illuminating and heating, 1; ice, artificial, 2; liquors, distilled, 1; lumber and timber products, 2; mattresses and spring beds, 2; mineral and soda waters, 2; paper hanging, 1; patent medicines and compounds, 1;

LOUISVILLE.

1	All industries	2,307	$49,334,701	$4,368,981	$6,929,847	$11,196,678	$26,839,195	2,568	2,893	$2,929,141	29,926	$10,945,720
2	Agricultural implements	4	1,583,066	162,000	176,687	232,000	1,012,379	1	90	113,420	634	282,499
3	Baking and yeast powders	4	9,325	100	150	1,275	7,800	8	12	2,020	13	3,049
4	Bicycle and tricycle repairing	25	19,207	2,050	2,650	5,952	8,555	30	2	110	27	9,695
5	Blacksmithing and wheelwrighting	90	82,202	23,145	15,220	14,892	28,945	99			159	78,929
6	Boot and shoe uppers	3	6,388			1,440	4,948	5			13	5,629
7	Boots and shoes, custom work and repairing.	121	47,736	7,135	10,670	12,714	17,217	125	1	468	73	28,808
8	Boots and shoes, factory product	3	89,268			18,058	71,210	6	30	14,075	168	39,919
9	Bottling	3	53,342	7,000	5,000	1,842	39,500	5	16	18,722	30	11,500
10	Boxes, wooden packing	5	450,557	95,675	37,000	86,783	231,099	5	18	15,840	599	179,789
11	Brass castings and brass finishing	3	20,672			5,693	14,979	5			28	9,784
12	Bread and other bakery products	130	684,225	125,925	236,600	198,979	122,721	135	69	36,209	437	150,620
13	Brick and tile	9	256,090	49,700	112,078	34,201	60,111	7	11	9,328	298	92,519
14	Brooms and brushes	9	42,414	900	3,600	2,480	35,434	12	10	7,794	32	11,402
15	Carpentering	139	273,088	30,382	36,575	33,476	172,655	176	19	9,292	760	328,656
16	Carriage and wagon materials	6	300,657	59,850	34,789	91,094	114,924	1	12	14,460	192	63,559
17	Carriages and wagons	26	1,887,148	140,050	307,100	117,273	1,322,716	35	56	76,507	766	304,253
18	Cars and general shop construction and repairs by steam railroad companies.	5	654,533	77,500	149,310	96,652	331,071		20	16,210	1,563	816,825
19	Cheese and butter, urban dairy products.	18	4,022	175	250	565	3,032	20	1	75	9	2,726
20	Cheese, butter, and condensed milk, factory product.	4	14,925	50	300	4,165	10,410	9			11	4,310
21	Clothing, men's, custom work and repairing.	117	1,142,782	27,951	37,200	48,988	1,028,643	136	105	99,587	1,233	356,084
22	Clothing, men's, factory product	11	1,122,833	1,800	3,700	36,533	1,080,800	20	125	121,226	1,115	353,456
23	Clothing, women's, dressmaking	170	110,069	12,800	19,055	19,274	58,940	185	12	6,784	672	161,518
24	Clothing, women's, factory product	6	16,875			2,675	14,200	12	3	2,190	64	16,474
25	Coffee and spice, roasting and grinding	5	75,000	3,000	10,000	11,600	50,400	6	4	3,600	19	14,454
26	Confectionery	29	391,632	16,575	28,535	66,777	279,745	31	84	63,732	527	112,303
27	Cooperage	18	841,397	83,680	70,514	133,010	554,193	17	38	61,712	1,104	252,855
28	Dyeing and cleaning	13	15,090	1,000	3,250	8,425	2,415	12	4	2,160	34	11,704
29	Electrical apparatus and supplies	3	45,077			14,811	30,266	3	4	4,020	36	20,231
30	Electrical construction and repairs	11	11,475	400	600	2,650	7,825	15	1	858	31	14,467
31	Electroplating	3	2,620			2,350	270	4			5	2,064

BY SPECIFIED INDUSTRIES: 1900—Continued.

LEXINGTON.

Average number of wage-earners and total wages—continued.						Miscellaneous expenses.					Cost of materials used.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
1,213	$504,628	200	$38,023	28	$2,467	$224,916	$46,349	$12,093	$107,188	$59,286	$1,467,515	$1,434,292	$33,223	$2,925,697	1
7	2,540					1,744	1,080	25	639		2,030	1,927	103	14,898	2
27	10,466			1	48	3,199	2,473	160	566		10,647	10,087	560	45,249	3
12	3,838					1,219	928	32	259		3,789	3,762	27	16,931	4
21	6,522					1,451	900	147	404		28,195	26,984	1,211	60,619	5
73	32,740					50,156	1,452	40	1,113	47,551	134,440	134,440		256,550	6
44	19,635					3,757	934	900	1,923		18,178	17,570	608	58,184	7
52	26,156	4	1,456	1	85	10,161	5,941	269	3,119	832	46,448	46,136	312	111,085	8
1	1,200	134	26,214			5,377	2,835	246	2,296		53,654	53,554	100	127,637	9
31	10,821					1,133	400	255	478		28,010	27,935	75	53,410	10
21	12,341					21,760		1,176	20,584		325,901	322,116	3,785	419,636	11
19	6,480			1	52	1,739	960	130	649		5,978	5,448	530	22,384	12
6	1,263					739	594	27	118		4,596	4,576	20	14,491	13
3	1,874					652	432	37	183		1,347	1,332	15	6,850	14
122	63,742			3	304	9,493	2,700	1,003	5,790		125,068	123,608	1,460	258,024	15
9	9,124					425	240	30	155		4,860	4,860		19,500	16
42	15,190					4,404	264	20	120	4,000	57,595	57,395	200	84,865	17
		38	6,441			5,424	3,449	318	1,657		38,935	38,896	39	83,404	18
66	25,836					2,125	1,043	272	810		23,126	23,101	25	68,700	19
2	1,426	3	270			1,912	1,094	78	740		3,548	3,423	125	14,035	20
41	17,858					5,153	1,944	268	2,456	485	44,738	44,615	123	88,266	21
42	16,423	12	2,108			4,523	2,798	387	1,138	200	23,469	22,354	1,115	63,300	22
59	27,754	6	895	2	242	15,443	2,819	260	7,421	4,943	15,441	12,940	2,501	110,950	23
8	3,100					1,318	465	80	773		4,622	4,590	32	11,073	24
23	10,953					2,555	1,760	198	597		12,655	12,511	144	34,535	25
33	12,573			2	96	3,109	2,105	140	839	25	21,146	20,746	400	49,416	26
119	19,471					6,280	1,160	589	4,531		140,604	140,056	548	191,751	27
14	8,024					2,015	1,545		270	200	4,508	4,477	31	24,596	28
316	137,278	3	639	18	1,610	57,650	4,034	5,006	47,560	1,050	283,987	264,853	19,134	615,358	29

paving and paving materials, 2; *photolithographing and photoengraving*, 1; *plastering and stuccowork*, 2; *slaughtering, wholesale, not including meat packing*, 1; soap and candles, 1; tobacco, chewing, smoking, and snuff, 2; tobacco, cigars and cigarettes, 1; wirework, including wire rope and cable, 1.

LOUISVILLE.

23,348	$9,638,562	5,175	$1,136,945	1,403	$170,213	$13,145,595	$462,452	$286,338	$11,618,542	$778,263	$41,016,391	$40,369,370	$647,021	$79,286,390	1
633	282,239			1	260	144,785	875	11,277	132,633		430,431	423,204	7,227	1,227,288	2
6	1,986	5	775	2	288	2,189	372	35	1,782		13,231	13,213	18	23,791	3
21	9,041			6	654	4,549	3,373	73	778	325	16,551	16,072	479	49,757	4
156	78,441			3	488	11,149	8,145	660	1,676	668	69,897	67,009	2,888	238,419	5
13	5,629					1,422	510	37	875		13,334	13,280	54	24,678	6
72	28,548	1	260			14,279	11,689	586	1,280	724	54,212	53,225	987	177,714	7
75	23,729	49	10,664	44	5,526	6,586	1,980	199	4,407		124,845	123,410	1,435	206,624	8
20	9,000	10	2,500			7,043	1,700	693	4,650		69,660	69,566	94	127,133	9
528	166,441	14	3,032	57	10,316	7,555	320	224	7,011		359,512	347,884	11,628	654,881	10
20	7,984	8	1,800			2,739	1,120	11	1,608		17,147	16,385	762	37,250	11
336	135,393	95	13,981	6	1,246	52,502	18,232	4,986	29,284		610,757	592,683	18,074	1,163,945	12
295	92,249			3	300	7,404	2,100	1,039	4,265		62,987	19,939	43,048	255,573	13
17	7,666	13	3,324	2	412	12,758	1,176	80	4,502	7,000	75,892	75,607	285	162,402	14
759	328,380			1	276	229,079	8,949	1,619	7,830	210,681	744,672	743,415	1,257	1,639,023	15
187	62,859			5	700	12,020	106	1,706	10,208		175,306	170,245	5,061	316,578	16
745	300,486	1	300	20	3,467	77,738	5,376	4,937	67,175	250	805,897	798,927	6,970	1,442,104	17
1,558	814,996	5	1,829			30,042	35	5,654	24,353		1,389,127	1,365,586	23,541	2,252,204	18
9	2,726					1,992	1,849	10	133		27,440	27,300	140	40,877	19
10	4,180			1	130	948	744	36	168		48,611	48,416	195	67,352	20
461	218,259	668	128,347	104	9,478	246,616	38,521	4,561	74,593	128,941	1,157,129	1,153,008	4,121	2,179,537	21
206	122,582	853	224,026	56	6,848	229,716	18,698	5,036	89,482	116,500	1,516,322	1,510,178	6,144	2,530,910	22
4	1,464	644	157,689	24	2,365	28,050	20,604	591	6,045	810	213,588	211,681	1,857	564,859	23
8	3,320	56	13,154			7,803	1,425		6,363	15	75,668	75,305	363	119,577	24
18	14,304	1	150			4,043	1,795	742	1,506		132,592	131,323	1,269	178,420	25
201	88,860	324	23,129	2	314	69,618	18,293	2,656	48,669		546,788	538,810	7,978	1,116,808	26
1,102	252,555			2	300	32,960	980	5,921	26,059		543,307	542,685	622	1,046,475	27
18	7,960	14	3,562	2	182	8,068	5,911	403	1,274	480	5,982	4,879	1,103	40,260	28
36	20,231					9,896	1,965	142	6,759	1,030	60,085	59,586	499	97,280	29
28	14,096			3	371	2,268	1,594	34	518	122	24,279	24,142	137	53,990	30
4	1,908			1	156	327	263	9	55		1,566	854	712	7,250	31

TABLE 8.—MANUFACTURES IN CITIES

LOUISVILLE—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
32	Engraving, steel, including plate printing.	3	$16,764			$12,170	$4,594	3	3	$400	24	$13,125
33	Fertilizers	3	274,974	$5,000	$21,500	30,788	217,686		16	17,650	63	29,738
34	Flouring and grist mill products	6	507,260	106,470	60,130	127,275	213,385	4	27	31,980	116	57,882
35	Food preparations	5	3,425	850	500	785	1,290	7	1	500	4	758
36	Foundry and machine shop products	38	2,552,335	351,907	402,232	596,332	1,201,864	28	158	181,411	2,016	812,469
37	Fur goods	4	18,465	700	300	1,065	16,400	6	4	2,288	35	13,976
38	Furniture, cabinetmaking, repairing, and upholstering.	29	36,161	8,250	4,950	4,959	18,002	34	3	316	71	31,462
39	Furniture, factory product	16	480,783	60,202	68,040	86,131	266,410	24	30	19,737	603	217,210
40	Glass, cutting, staining, and ornamenting.	3	14,285			660	13,625	4	1	200	19	13,480
41	Hairwork	3	2,835			185	2,650	4			8	1,470
42	Hats and caps, not including fur hats and wool hats.	3	12,050	800	1,500	1,800	7,950	4	2	1,950	24	6,852
43	House furnishing goods, not elsewhere specified.	3	34,785			5,500	29,285	6			44	11,678
44	Ice, artificial	7	371,821	34,500	104,000	203,221	30,100	4	12	10,140	50	27,372
45	Instruments, professional and scientific	3	11,030			1,715	9,315	3	1	780	7	3,148
46	Ironwork, architectural and ornamental.	6	240,951	30,600	51,768	80,871	77,712	4	28	23,906	165	52,257
47	Jewelry	3	13,200			3,700	9,500	4	1	936	25	13,412
48	Leather, tanned, curried, and finished	15	3,597,579	210,332	443,967	260,515	2,682,765	8	40	49,369	575	250,103
49	Lime and cement	3	575,294	129,521	216,966	103,200	125,607	1	3	5,000	250	94,788
50	Liquors, distilled	9	3,432,539	689,600	585,000	831,098	1,326,841	8	60	76,257	186	98,498
51	Liquors, malt	19	2,734,994	262,624	973,599	832,946	665,825	14	62	97,671	317	179,834
52	Lock and gun smithing	14	17,475	2,750	3,050	6,970	4,705	17	1	600	19	8,049
53	Looking-glass and picture frames	7	10,515			1,960	8,555	12	3	800	9	5,600
54	Lumber and timber products	9	645,154	56,507	55,700	117,230	415,717	8	37	42,773	873	278,822
55	Lumber, planing mill products, including sash, doors, and blinds.	13	496,411	62,307	76,407	57,869	299,828	13	33	28,719	254	107,913
56	Malt	3	24,500			3,000	21,500	3	3	4,200	26	15,631
57	Marble and stone work	9	131,100	29,677	11,874	39,584	49,965	25	5	4,585	150	54,034
58	Masonry, brick and stone	49	244,442	30,600	17,600	16,173	180,069	59	10	10,620	399	215,035
59	Mattresses and spring beds	7	12,965	950	1,050	1,815	9,150	8	3	4,646	27	11,657
60	Millinery, custom work	56	168,810	10,200	24,950	4,123	129,537	64	40	20,124	316	86,165
61	Mineral and soda waters	10	63,245	21,900	11,300	19,020	11,025	11	7	5,444	37	14,127
62	Monuments and tombstones	10	233,078	43,152	49,100	14,937	125,889	9	21	47,460	144	73,509
63	Oil, cottonseed and cake	3	2,029,296	40,680	165,546	309,656	1,513,414		30	52,877	180	59,070
64	Optical goods	3	9,400			1,100	8,300	2	2	1,250	7	2,622
65	Painting, house, sign, etc	121	88,649	16,700	20,375	18,174	33,400	144	3	1,600	369	172,339
66	Paints	7	158,081	16,422	21,500	25,337	94,822	4	11	12,000	45	17,426
67	Paper hanging	40	139,310	12,560	15,625	4,567	106,558	57	17	10,574	186	78,845
68	Patent medicines and compounds	29	247,466	16,540	39,100	13,269	178,557	31	56	56,504	108	43,978
69	Paving and paving materials	22	235,262	13,500	18,550	86,467	116,745	24	21	19,226	611	268,487
70	Perfumery and cosmetics	3	2,704			620	2,084	3			4	1,163
71	Photography	26	32,698	500	2,000	15,778	14,420	28	6	1,072	43	20,982
72	Pickles, preserves, and sauces	3	90,115	4,500	14,000	15,101	56,514	5	19	17,360	88	14,050
73	Plastering and stuccowork	31	20,727	3,510	7,640	3,190	6,387	36	3	2,080	60	36,313
74	Plumbing, and gas and steam fitting	78	336,007	15,486	25,675	32,035	262,811	96	33	19,804	349	154,071
75	Printing and publishing, book and job	45	631,577	32,750	17,825	330,777	250,225	49	60	60,257	601	235,535
76	Printing and publishing, newspapers and periodicals.	52	1,911,287	265,550	249,300	491,280	905,157	32	255	250,956	464	283,349
77	Pumps, not including steam pumps	3	5,800	1,500	500	2,450	1,350	4			2	986
78	Roofing and roofing materials	29	126,047	8,875	18,650	22,535	75,987	29	15	10,524	144	62,352
79	Saddlery and harness	43	658,600	20,695	25,555	41,630	570,720	51	62	51,064	414	176,074
80	Sewing machine repairing	6	4,086	900	1,500	724	962	3	1	1,040	8	2,414
81	Shirts	9	51,679			7,575	44,104	13	16	7,400	104	37,554
82	Slaughtering and meat packing, wholesale.	4	40,950	10,900	9,150	3,050	17,850	5			15	7,220
83	Slaughtering, wholesale, not including meat packing.	8	1,177,476	65,160	139,300	194,253	778,763	9	52	45,739	434	182,197
84	Sporting goods	3	13,710	3,000	1,000	6,200	3,510	2	1	1,350	7	4,148
85	Tinsmithing, coppersmithing, and sheet-iron working.	77	245,074	24,368	47,045	73,229	100,432	89	28	20,591	299	119,810
86	Tobacco, chewing, smoking, and snuff	24	2,894,999	65,240	511,074	633,813	1,684,872	24	388	443,878	2,710	748,121
87	Tobacco, cigars and cigarettes	92	902,227	50,425	53,820	13,800	779,182	99	55	53,794	1,045	290,159
88	Tobacco, stemming and rehandling	14	1,475,051	43,910	96,010	141,000	1,194,101	18	25	37,406	727	155,365
89	Trunks and valises	6	143,795	11,000	22,000	9,051	101,744	11	11	8,480	152	50,529
90	Varnish	3	187,749	8,500	25,775	13,807	139,667		32	26,554	41	19,940
91	Vinegar and cider	7	313,400	24,000	29,500	39,093	220,807	21	93	59,666	54	22,520
92	Watch, clock, and jewelry repairing	45	46,828	2,600	2,550	9,793	31,885	52	1	468	43	19,428
93	Wirework, including wire rope and cable.	5	10,010			4,650	5,360	4	5	2,880	33	11,970
94	Wood, turned and carved	7	13,920	4,815	3,725	3,010	2,370	9			17	7,512
95	All other industries[1]	98	7,857,781	506,153	854,202	3,855,440	2,641,986	85	227	261,386	2,994	1,099,126

[1] Embraces ammunition, 2; artificial limbs, 1; awnings, tents, and sails, 2; axle grease, 1; bags, other than paper, 1; baskets, and rattan and willow ware, 2; belting and hose, leather, 1; bluing, 1; bookbinding and blank book making, 1; boot and shoe cut stock, 1; boxes, cigar, 1; boxes, fancy and paper, 1; bridges, 2; buttons, 1; carpets, rag, 2; cars and general shop construction and repairs by street railroad companies, 1; chemicals, 1; coffins, burial cases, and undertakers' goods, 1; coke, 1; cordage and twine, 1; cordials and sirups, 1; cotton goods, 1; cutlery and edge tools, 2; dentists' materials, 1; druggists' preparations, not including prescriptions, 2; dyeing and finishing textiles, 1; engraving and diesinking, 2; flavoring extracts, 2; furnishing goods, men's, 1; gas, illuminating and heating, 2; gas machines and meters, 1; grease and tallow, 2; hammocks, 1; hand stamps, 2; hones and whetstones, 1; iron and steel, 1; iron and steel, bolts, nuts, washers, and rivets, 1; iron and steel, forgings, 1; jute and jute goods, 1; linen goods, 1; millinery and lace goods, 2; mirrors, 2; models and patterns, 1; mucilage

BY SPECIFIED INDUSTRIES: 1900—Continued.

LOUISVILLE—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
23	$13,047			1	$78	$1,828	$804	$97	$927		$2,002	$1,261	$741	$26,798	32
63	29,788					16,208	2,400	2,888	10,970		144,965	142,085	2,880	272,045	33
114	57,440	2	$442			107,041	160	4,084	102,797		1,586,737	1,574,280	12,457	1,824,575	34
1	420			3	338	768	560	33	175		15,290	14,560	730	22,297	35
2,008	810,181			8	2,288	194,882	8,633	15,160	169,749	$1,340	1,484,371	1,442,590	41,781	3,233,222	36
6	4,600	29	9,376			2,794	2,106	50	468	175	19,611	19,550	61	52,000	37
67	30,906	2	300	2	256	5,702	4,245	299	858	300	35,849	34,779	1,070	103,438	38
586	212,610			17	4,600	45,552	7,044	5,067	33,441		296,997	290,846	6,151	705,517	39
19	13,480					2,307	1,320	8	979		9,511	9,375	136	33,850	40
1	200	6	1,070	1	200	1,031	524	12	495		2,512	2,465	47	6,815	41
12	4,936	12	1,916			1,066	420	46	600		16,925	16,860	65	40,750	42
18	7,522	26	4,156			7,095	2,035	40	5,020		64,960	64,645	315	112,400	43
50	27,372					21,590	125	2,733	18,732		35,096	7,370	27,726	132,395	44
7	3,148					624	396	37	91	100	1,241	955	286	10,372	45
165	52,257					20,922	2,923	1,580	16,419		98,354	95,690	2,664	197,852	46
23	13,100			2	312	1,166	960	36	130	40	16,850	16,613	237	38,478	47
575	250,103					92,338	975	14,682	76,681		2,373,135	2,358,708	14,427	3,114,731	48
250	94,783					21,748		2,542	19,206		103,486	79,479	24,007	249,763	49
186	98,493					1,762,614		18,809	1,743,805		802,087	753,513	48,574	2,908,947	50
313	179,190	3	364	1	280	829,313	1,760	14,564	812,989		381,064	342,547	38,517	1,782,220	51
16	7,389	2	400	1	260	2,393	1,957	101	335		9,161	8,802	359	29,080	52
9	5,600					1,556	1,280	72	204		20,426	20,409	17	36,567	53
867	277,466			6	1,356	42,541	2,856	2,460	37,225		543,940	543,340	600	1,068,219	54
252	107,683			2	230	40,933	694	3,894	12,094	24,251	275,983	270,975	5,008	490,542	55
26	15,631					14,768	3,900	1,424	9,444		160,126	155,480	4,646	203,713	56
149	53,834	1	200			7,692	2,975	846	3,871		58,630	57,329	1,301	160,304	57
396	214,470			3	615	137,072	2,450	788	5,615	128,269	296,364	291,870	4,494	790,849	58
25	10,959	2	598			1,599	997	43	455	104	35,942	35,777	165	70,076	59
11	3,315	302	82,320	3	530	34,747	27,840	1,074	5,833		313,276	312,183	1,093	602,649	60
32	13,050			5	1,077	5,320	2,186	154	2,980		16,932	16,521	411	69,596	61
144	73,509					18,281	1,815	1,113	5,303	10,000	196,062	195,133	929	364,785	62
166	56,470	8	1,664	6	936	68,632		1,735	66,897		4,225,390	4,214,197	11,193	4,683,343	63
7	2,622					3,670	1,240	105	2,150	175	11,700	11,535	165	26,500	64
358	169,941			11	2,398	16,849	7,551	642	6,656	2,000	136,605	136,368	237	455,610	65
39	15,926	6	1,500			6,158	1,340	588	4,230		253,107	250,576	2,531	331,185	66
174	77,239			12	1,606	25,091	8,695	843	11,353	4,200	105,177	104,712	465	280,627	67
82	39,345	25	4,451	1	182	341,484	18,509	1,736	320,239	6,000	268,924	266,455	2,469	939,930	68
606	267,797			5	690	29,572	2,401	652	19,619	6,900	342,083	335,026	7,057	826,355	69
4	1,163					472	192	5	275		2,175	2,155	20	5,787	70
38	19,856	4	976	1	100	13,348	9,544	280	2,699	825	26,831	26,375	456	96,719	71
37	7,450	51	6,600			9,284	1,020	510	7,754		145,814	144,482	1,332	218,928	72
60	36,313					2,744	1,227	123	1,394		42,438	41,926	512	120,627	73
832	151,886			17	2,185	55,192	15,614	1,592	16,361	21,625	542,563	539,927	2,636	938,292	74
429	203,085	146	29,112	26	8,338	59,249	21,476	3,240	32,120	2,413	319,998	311,342	8,656	854,547	75
414	267,668	46	14,851	4	830	252,267	27,147	7,661	155,396	62,063	285,030	271,283	13,747	1,350,931	76
2	986					432	222	45	165		2,884	2,881	3	11,745	77
141	61,952			3	400	20,083	4,197	1,349	4,417	10,120	246,996	245,464	1,532	415,234	78
374	168,488	21	5,238	19	2,348	39,104	12,238	3,340	23,458	68	722,239	718,173	4,066	1,167,400	79
7	2,258			1	156	1,012	735	63	149	65	4,637	4,543	94	11,103	80
20	7,864	137	29,234	7	456	10,044	3,185	30	6,829		55,845	52,919	2,426	119,821	81
15	7,220					4,200		710	3,490		180,285	180,085	200	213,370	82
483	181,937	1	260			96,112	1,200	5,705	89,207		3,648,201	3,622,956	25,245	4,771,608	83
7	4,148					748	408	40	300		1,445	1,345	100	11,906	84
286	117,872	5	786	8	1,152	25,589	9,366	1,870	14,203	150	258,137	253,716	4,421	563,252	85
1,946	601,612	421	111,749	343	34,760	6,618,729	4,772	18,960	6,594,997		4,861,060	4,826,971	34,089	13,693,700	86
445	188,869	400	81,693	200	19,597	229,662	13,092	3,399	213,171		373,870	372,453	1,417	1,096,666	87
634	135,885	60	15,500	33	3,980	35,138	291	4,304	30,543		1,185,765	1,176,568	9,197	1,740,211	88
137	47,960	15	2,569			25,406	3,580	1,001	20,825		98,396	97,488	908	232,308	89
41	19,940					3,841	240	1,061	2,540		205,668	204,674	994	334,978	90
41	20,246	11	1,993	2	281	23,771	2,448	1,288	20,035		188,860	186,170	2,690	413,828	91
39	19,012			4	416	18,765	7,009	507	1,027	10,222	20,562	20,049	513	99,922	92
33	11,970					2,447	1,630	24	793		10,711	10,576	135	42,300	93
17	7,512					655	318	169	168		3,478	2,921	557	18,475	94
2,024	922,116	670	139,105	300	37,905	396,265	21,525	74,168	281,260	19,312	3,435,367	3,319,252	116,115	6,401,355	95

and paste, 1; musical instruments and materials, not specified, 1; musical instruments, organs and materials, 2; musical instruments, pianos and materials, 1; oil, not elsewhere specified, 2; oleomargarine, 1; photographic materials, 2; photolithographing and photoengraving, 1; plumbers' supplies, 1; pottery, terra cotta, and fire-clay products, 2; refrigerators, 1; saws, 2; scales and balances, 1; sewing machines and attachments, 1; show cases, 1; smelting and refining, not from the ore, 1; soap and candles, 2; soda water apparatus, 1; stamped ware, 1; steam fittings and heating apparatus, 1; steam packing, 1; stencils and brands, 2; stereotyping and electrotyping, 1; sugar and molasses, refining, 2; surgical appliances, 1; umbrellas and canes, 1; upholstering materials, 1; windmills, 1; window shades, 1; woodenware, not elsewhere specified, 1; woolen goods, 2; worsted goods, 1.

TABLE 8.—MANUFACTURES IN CITIES

NEWPORT.

	MANUFACTURING AND MECHANICAL INDUSTRIES, AND CITIES AND TOWNS.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
1	All industries	272	$2,848,435	$249,285	$673,648	$603,408	$1,322,149	311	132	$142,404	2,561	$1,155,361
2	Blacksmithing and wheelwrighting	9	17,125	3,750	3,400	3,400	6,575	11			20	11,290
3	Boots and shoes, custom work and repairing.	11	4,290	700	1,150	2,070	370	12			9	2,962
4	Bread and other bakery products	18	29,890	5,600	16,150	3,790	4,350	18			31	12,868
5	Carpentering	19	22,867	6,100	2,700	3,575	10,492	23	1	540	81	44,579
6	Carriages and wagons	3	15,105	7,250	3,155	1,350	3,350	4			9	5,120
7	Clothing, men's, custom work and repairing.	6	54,190	8,500	19,500	690	25,500	7			27	13,238
8	Clothing, men's, factory product	56	52,970	5,750	13,305	13,615	20,300	61			554	124,971
9	Clothing, women's, dressmaking	5	1,000			500	500	6			14	3,478
10	Confectionery	4	2,155	400	450	900	405	4			5	1,270
11	Foundry and machine shop products	4	246,111	34,910	39,200	50,500	121,501	4	8	6,157	197	122,124
12	Furniture, cabinetmaking, repairing, and upholstering.	3	8,050	1,500	3,000	650	2,900	3			10	3,096
13	Lumber, planing mill products, including sash, doors, and blinds.	3	79,000	5,500	16,500	19,000	38,000	6	3	2,175	56	18,755
14	Masonry, brick and stone	7	5,225	600	900	725	3,000	11			46	32,914
15	Millinery, custom work	6	21,580	3,000	7,000	230	11,350	7			23	6,290
16	Painting, house, sign, etc	12	5,276	350	300	1,610	3,016	19			27	14,212
17	Paper hanging	5	20,625	2,000	6,500	425	11,700	10	1	104	20	8,332
18	Paving and paving materials	3	15,360	4,500	400	4,800	5,660	5	1	800	32	13,178
19	Plumbing, and gas and steam fitting	13	17,425	1,700	1,300	3,975	10,450	14	3	726	49	19,123
20	Saddlery and harness	4	9,510	2,000	5,000	360	2,150	4			2	1,460
21	Tinsmithing, coppersmithing, and sheet-iron working.	10	27,760	7,300	7,260	2,825	9,875	12			20	9,648
22	Tobacco, cigars and cigarettes	23	25,536	5,775	6,925	2,536	10,300	25	1	700	70	20,768
23	Watch, clock, and jewelry repairing	5	10,632			1,327	9,305	6	1	260	6	1,854
24	All other industries [1]	43	2,156,753	141,550	519,548	484,555	1,011,100	39	113	130,942	1,253	663,826

[1] Embraces awnings, tents, and sails, 1; bicycle and tricycle repairing, 2; boots and shoes, factory product, 1; bottling, 1; brick and tile, 2; carpets, rag, 2; carriage and wagon materials, 1; clothing, women's, factory product, 1; cooperage, 1; dyeing and cleaning, 1; electrical construction and repairs, 2; fancy articles, not elsewhere specified, 1; flouring and grist mill products, 1; glass, cutting, staining, and ornamenting, 1; hardware, 1; hats and caps, not including fur hats and wool hats, 1; ice, artificial, 1; iron and steel, 1; ironwork, architectural and ornamental, 1; lamps and reflectors, 1; liquors, malt, 1; lithographing and

TABLE 9.—MANUFACTURES IN CITIES AND

1	Total for cities and towns	1,126	$17,672,311	$1,322,596	$2,732,189	$3,826,634	$9,790,892	1,275	801	$604,547	10,897	$3,743,872
2	Ashland	82	2,980,975	121,947	703,917	662,163	1,492,948	83	72	82,346	1,620	575,152
3	Bellevue	20	63,313	6,750	7,950	42,803	5,810	30	3	1,686	66	20,839
4	Bowling Green	104	624,907	57,700	77,225	190,413	299,569	119	48	34,107	782	290,774
5	Dayton	59	193,690	23,750	24,575	55,910	89,455	62	4	2,440	236	36,218
6	Frankfort	66	1,594,791	114,115	194,225	354,294	932,157	75	89	83,888	367	161,474
7	Henderson	106	2,759,258	155,270	350,388	473,577	1,780,028	120	77	58,821	1,456	380,726
8	Hopkinsville	73	445,770	42,360	100,090	115,140	188,180	90	68	30,747	547	136,346
9	Ludlow	35	462,807	12,928	127,882	174,321	147,676	45	30	21,411	726	382,995
10	Mayfield	45	954,448	22,100	72,302	115,571	744,475	52	10	8,040	324	100,992
11	Maysville	95	1,125,147	127,087	174,984	265,085	557,991	119	60	50,793	644	194,055
12	Mt. Sterling	52	253,825	19,000	46,450	76,515	111,860	59	9	6,004	131	35,163
13	Owensboro	159	3,308,056	278,374	439,627	503,133	2,086,922	173	189	112,767	1,582	424,736
14	Paducah	171	2,689,121	322,540	378,804	763,774	1,224,003	175	136	108,137	2,305	918,603
15	Winchester	50	216,203	18,675	33,775	33,935	129,818	68	6	3,300	111	35,799

BY SPECIFIED INDUSTRIES: 1900—Continued.

NEWPORT.

Average number of wage-earners and total wages—continued.						Miscellaneous expenses.					Cost of materials used.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
1,885	$1,020,385	639	$130,656	37	$4,320	$866,620	$22,869	$18,783	$599,905	$225,063	$2,017,773	$1,932,149	$85,624	$4,888,169	1
20	11,290					3,611	948	98	15	2,550	12,672	12,222	450	39,356	2
9	2,962					612	506	32	22	52	4,446	4,347	99	13,013	3
29	12,462	1	250	1	156	2,157	1,587	448	122		39,181	37,913	1,268	78,600	4
81	44,579					220,174	1,016	164	1,125	217,869	109,199	109,193	6	414,843	5
9	5,120					304		192	112		9,588	9,503	85	24,135	6
24	12,582	3	656			2,102	264	706	232	900	19,826	19,660	166	48,340	7
82	34,787	456	88,865	16	1,319	6,444	2,059	397	3,488	500	14,225	12,377	1,848	201,540	8
		14	3,478			485	430		5		748	714	34	8,408	9
3	1,030	2	240			882	660	131	91		4,860	4,705	155	11,939	10
197	122,124					13,796		2,372	11,424		241,877	228,137	13,740	414,962	11
8	2,800	2	296			215	160	20	35		3,600	3,565	35	8,900	12
54	18,505	2	250			2,198	400	1,128	670		62,995	61,927	1,068	104,238	13
46	32,914					220	144	26	50		33,982	33,982		81,849	14
		23	6,290			1,348	851	446	51		29,703	29,575	128	47,712	15
27	14,212					636	450	11	15	160	10,594	10,585	9	40,531	16
19	8,200	1	132			857	516	219	122		12,984	12,925	59	30,710	17
32	13,178					231	90	35	106		13,137	12,837	300	34,716	18
49	19,128					2,697	1,894	196	207	400	47,855	47,622	233	93,975	19
2	1,460					342	161	128	53		10,602	10,578	24	14,932	20
20	9,648					1,016	564	299	153		31,179	30,949	230	56,549	21
47	15,093	23	5,675			16,312	1,426	252	14,634		19,540	19,276	264	71,614	22
6	1,854					723	658	51	14		3,797	3,760	37	11,400	23
1,121	636,457	112	24,524	20	2,845	589,308	8,085	11,432	567,159	2,632	1,281,183	1,215,797	65,386	3,035,907	24

engraving, 1; looking-glass and picture frames, 1; marble and stone work, 1; mineral and soda waters, 1; monuments and tombstones, 1; mucilage and paste, 1; photography, 1; pipes, tobacco, 1; plastering and stuccowork, 1; printing and publishing, book and job, 2; printing and publishing, newspapers and periodicals, 1; roofing and roofing materials, 2; slaughtering and meat packing, wholesale, 1; slaughtering, wholesale, not including meat packing, 1; tobacco, chewing, smoking, and snuff, 1; watch cases, 1.

TOWNS UNDER 20,000 IN POPULATION: 1900.

8,740	$3,370,238	1,528	$292,439	629	$81,195	$1,312,953	$139,109	$114,957	$839,274	$219,613	$13,362,793	$12,732,602	$630,191	$22,965,547	1
1,556	564,320	14	2,314	50	8,518	169,151	14,972	11,680	137,449	5,050	3,046,856	2,575,506	471,350	4,595,809	2
38	15,940	26	4,494	2	405	18,342	1,218	1,181	2,793	13,150	33,619	32,600	1,019	103,558	3
658	264,867	111	24,605	13	1,302	64,174	11,162	5,188	36,002	11,822	855,636	844,030	11,606	1,557,952	4
147	70,227	86	15,454	3	537	6,903	1,131	732	5,040		125,112	119,144	5,968	314,610	5
333	154,614	28	6,556	6	304	256,229	10,300	22,871	98,979	124,079	1,181,326	1,165,465	15,861	2,038,125	6
848	271,775	427	86,243	181	22,708	168,909	15,694	15,601	130,246	7,368	1,815,579	1,796,158	19,421	2,803,628	7
481	126,163	51	7,983	15	2,200	50,917	7,229	4,018	33,338	6,332	514,404	503,993	10,411	884,913	8
695	376,831	27	5,514	4	650	34,381	3,564	3,577	17,240	10,000	566,689	556,042	10,647	1,077,556	9
149	62,940	160	36,582	15	1,470	13,001	3,114	4,533	4,644	710	373,253	366,184	7,069	607,499	10
473	172,082	100	16,579	71	5,394	52,770	10,125	7,056	34,589	1,000	621,730	609,677	12,053	1,207,560	11
110	30,298	19	4,710	2	155	15,059	5,137	2,095	6,759	1,068	140,268	135,855	4,413	263,954	12
1,198	371,142	269	40,133	115	13,461	215,675	18,999	16,505	160,118	20,053	2,060,368	2,035,457	24,911	3,446,605	13
1,967	857,958	189	36,728	149	23,917	233,926	30,955	17,152	167,423	18,396	1,703,324	1,671,766	31,558	3,627,344	14
87	31,081	21	4,544	3	174	13,516	5,509	2,768	4,654	585	324,629	320,725	3,904	436,434	15

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Twelfth Census of the United States.

CENSUS BULLETIN.

No. 135. WASHINGTON, D. C. January 30, 1902.

METHODS AND RESULTS.

METHODS OF ESTIMATING POPULATION.

Hon. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I have the honor to transmit herewith, for publication as a Census Bulletin, the results of a study made in accordance with your instructions into the accuracy of the methods of estimating population in vogue, especially in large cities.

The main methods are four: The first assumes that the city's rate of growth between any two successive censuses is maintained during the following decade; the second assumes a constant or known ratio between the total population and the vote cast; the third assumes a constant or known ratio between the total population and the number of children of school age; and the fourth assumes a constant or known ratio between the total population and the number of names in the city directory.

As these methods are used mainly in estimating the population of cities, the study has been confined for the most part to the 78 cities, each of which has over 50,000 inhabitants, and extended to the states only where information for the cities is lacking.

The bulletin is based in part upon the published results of the Twelfth Census and in part upon information contained in state and municipal documents courteously supplied to the Census Office by the secretaries of state, the state superintendents of public instruction, and other state or municipal officers. Where published figures of the Twelfth Census are used, reference is made to the source; the figures drawn from other authorities and used in the present bulletin are reproduced in the last two tables, to facilitate the critical examination of the results.

The main conclusions of the study may be summarized as follows:

1. In half of the 78 cities examined the per cent of growth between 1890 and 1900 differed by 18 or more from the per cent of growth between 1880 and 1890. Therefore, the assumption that under present conditions the rate of growth of a given city tends to remain the same is inadmissible.

2. The number of votes cast at an election in a large city, affected as it is by the ratio of males to population, the ratio of adult males to all males, the ratio of citizens to all male adults, the ratio of legal voters to citizens, and the ratio of actual voters to legal voters, stands in no constant or uniform relation to the population. In Albany, Columbus, and Dayton there were less than four inhabitants to each vote cast at the presidential election of 1900, while in several Northern cities there were more than eight and in certain Southern cities more than twelve to each vote cast.

3. In the states and territories the increase of population runs by no means parallel with the increase of votes. Even when the Southern states are disregarded, as having few large cities, and exceptional conditions affecting the number of votes, still the per cent of gain in the vote for the decade is likely to be as much as 8 greater or less than the corresponding per cent for population.

4. The number of children of school age is a more accurate index of total population than prior rate of increase or vote cast. This method gives estimates of population half of which fall within 6 per cent of the truth.

5. But the number of children of school age in a city is so seldom given with close accuracy by a school census, that this method is found of little practical value.

6. The ordinary method of estimating the population of a large city, that based on the number of names in the city directory, results uniformly in too large a figure and usually in very serious inaccuracy.

A quotation from Samuel Johnson which James A. Garfield made in 1870 puts the whole subject in a nutshell: "To count is a modern practice; the ancient method was to guess and where numbers are guessed they are always magnified." A combination of counting and guessing is

better than a guess not founded on a count, but when it differs from the results of a thorough and complete enumeration it is entitled to no standing.

To the general conclusion of the bulletin that none of the four ways of estimating population hitherto employed is worthy of use, it may be objected that negative results such as this are of little value, that city officials require for various purposes estimates of the city's population, are ready to accept the best simple method, but must have some method.

A method of estimating urban growth under present American conditions, which is certainly simpler and probably more accurate than any of the four here examined, may be commended to the consideration of interested city officials. This is to add for each year after 1900 one-tenth of the city's increase from 1890 to 1900. It is merely a rule of thumb and without rational justification. But between 1880 and 1890 the 78 cities together increased in population by an average annual amount of 407,028, and between 1890 and 1900 by an average annual amount of 414,793. As the rate of increase for the cities collectively fell from 46.8 per cent between 1880 and 1890 to 32.5 per cent between 1890 and 1900, but the total amount of increase between 1890 and 1900 exceeded by less than 2 per cent the total amount between 1880 and 1890, it is evident that the assumption of a constant amount is much nearer the truth than the assumption of a constant rate. If this method had been applied to the cities for 1900, the results in half the cases would have been within 6 per cent of the truth, closer than estimates based upon vote cast or number of names in the directory, and as close as the estimates resulting from an accurate census of school children, were that obtainable. From the point of view of local authorities, however, it may be an objection to this simple method that, on the basis of the estimates for 1900, it is as likely to result in an underestimate as in an overestimate, while the method now most in vogue, that based on the number of names in the city directory, produces nearly always an overestimate.

It is not the intention of this bulletin to criticise the use of these methods where nothing better can be secured; the aim has been merely to give the reasons of the Census Office for doubting that the results of such methods are entitled to serious consideration when they contradict those of a careful enumeration.

Yours respectfully,

Walter F. Willcox

Chief Statistician for Methods and Results.

METHODS OF ESTIMATING POPULATION.

The results of the Federal Census, giving the population of the several states and territories, are accepted without challenge, both by Congress and by the country. But the accuracy of the figures for the population of a city is sometimes disputed or denied. Criticism of this character is made usually in good faith and is entitled to candid consideration. It is the object of the following bulletin to examine the bases for such criticism and indicate how far they seem adequate.

All such criticism of census figures assumes openly or tacitly either that a city's population can be determined in some other way with greater accuracy, or that an inconsistency between the census results and indications derived from other sources believed to be more accurate is warrant for rejecting the former. Various alternative ways of determining the population have been invoked, but for the purpose in hand the following are all that are important:

1. An estimate reached by assuming that the rate of growth between any two successive censuses, is maintained during the following decade.
2. An estimate based upon the number of votes cast at an election.
3. An estimate based upon a school census.
4. An estimate based upon a directory canvass.

I. ESTIMATES REACHED BY ASSUMING A CONSTANT RATE OF GROWTH.

The assumption that a city grew during the ten years from 1890 to 1900 at the same rate at which it grew during the ten years from 1880 to 1890 may be brought to the test of general American experience. The United States as a whole, excluding Alaska and the insular territories, increased between 1880 and 1890, 24.9 per cent, but between 1890 and 1900, 20.9 per cent, a decided reduction in rate of growth. Among the states and territories 19 grew at a higher rate and 29 at a lower rate in the last ten years than they did in the earlier decade.[1] In only two, Massachusetts and Tennessee, was the per cent of increase between 1890 and 1900 within five-tenths (0.5) of what it was between 1880 and 1890 and in half of the states and territories it differed from that of ten years before by more than five (5). So far as indications derived from the rates of growth in the states and territories can be applied to the cities, therefore, they show the chances to be even that the per cent of increase in a city during the ten years, 1890–1900, would differ from its per cent of increase during the preceding ten years by 5 or more, and the chances would be about 25 to 1 against its per cent of increase during the second decade being within five-tenths (0.5) of what it was in the first.

But, as a rule, and other things being equal, the smaller the population the less the chance that its rate of growth from decade to decade will be the same. Hence, cities as a class would be expected to show a rate of growth less uniform than that of states. How far this anticipation conforms to the facts appears from Table 1 (page 4). This table shows for the last two decades, 1880–1890 and 1890–1900, the rate of growth of each of the 78 cities of the United States which in 1900 had over 50,000 people, and the differences between these rates. To make the evidence of the table clearer the cities are arranged in the order of this difference, those in which the rate of growth, 1890–1900, was greater coming first, and those in which it was less, following. In no case, except that of New York city, has allowance been made for any change in the city's boundaries between 1880 and 1900.

Scrutiny of the table will show that in half of the cities the rate of growth between 1890 and 1900 differed by more than 18 per cent from the same city's rate of growth between 1880 and 1890; that is, in 39 of the 78 cities the increase between 1890 and 1900 was more than 18 per cent greater or more than 18 per cent less than it was during the preceding decade. If in the case of each city allowance were made for the effect of changes in city boundaries between 1880 and 1900, the table would be somewhat changed, but probably such corrections would not affect materially the inference to be drawn from it. As it stands it shows that American cities have a less constant rate of growth than the states and territories. It shows, also, that in default of evidence to the contrary the rate of growth in a city during the last decade would be likely to differ from its own rate of growth in the preceding ten years by 18 per cent. In only 1 of the 78 cities, Philadelphia, was the rate of growth the same during the two decades, and in only 4 did the rate during the second decade come within 1 per cent of that during the first.

We may conclude that the assumption on which this method of disputing census figures rests is without warrant in general American experience.

[1] Omitting Indian Territory and Oklahoma, where prior to 1890 no census was taken.

TABLE 1.—PER CENTS OF INCREASE OF POPULATION, 1890–1900 AND 1880–1890, AND DIFFERENCE BETWEEN THEM FOR CITIES HAVING IN 1900 AT LEAST 50,000 INHABITANTS.[1]

CITY.	PER CENT OF INCREASE.		Difference.	CITY.	PER CENT OF INCREASE.		Difference.
	1890–1900	1880–1890			1890–1900	1880–1890	
St. Joseph, Mo	96.8	61.3	35.5	Baltimore, Md	17.2	30.7	13.5
Portland, Me	37.7	7.7	30.0	Savannah, Ga	25.6	40.6	15.0
Lawrence, Mass	40.1	14.1	26.0	Erie, Pa	29.8	46.5	16.7
Hartford, Conn	50.0	26.7	23.3	Cleveland, Ohio	46.1	63.2	17.1
Indianapolis, Ind	60.4	40.5	19.9	Pittsburg, Pa	34.8	52.6	17.8
Springfield, Mass	40.5	32.5	8.0	Dayton, Ohio	39.4	58.3	18.9
Providence, R. I	32.9	26.0	6.9	Paterson, N. J	34.2	53.5	19.3
New Orleans, La	18.6	12.0	6.6	Wilmington, Del	24.5	44.6	20.1
New York, N. Y	37.1	31.2	5.9	Lynn, Mass	22.9	45.6	22.7
Elizabeth, N. J	38.0	33.8	4.2	Richmond, Va	4.5	28.0	23.5
New Haven, Conn	32.9	29.3	3.6	Wilkesbarre, Pa	37.1	61.6	24.5
Newark, N. J	35.3	33.2	2.1	Buffalo, N. Y	37.8	64.8	27.0
New Bedford, Mass	53.3	51.7	1.6	Columbus, Ohio	42.4	70.7	28.3
Boston, Mass	25.1	23.6	1.5	Rochester, N. Y	21.4	49.8	28.4
Philadelphia, Pa	23.6	23.6	0.0	Scranton, Pa	35.6	64.0	28.4
Toledo, Ohio	61.9	62.4	0.5	Bridgeport, Conn	45.3	76.8	31.5
Harrisburg, Pa	27.4	28.0	0.6	Memphis, Tenn	58.6	92.0	33.4
Reading, Pa	34.6	35.5	0.9	Milwaukee, Wis	39.5	76.9	37.4
St. Louis, Mo	27.3	28.9	1.6	Atlanta, Ga	37.1	75.2	38.1
Utica, N. Y	28.1	29.8	1.7	Detroit, Mich	38.8	77.0	38.2
Cambridge, Mass	31.2	33.0	1.8	San Antonio, Tex	41.5	83.3	41.8
Louisville, Ky	27.1	30.2	3.1	Grand Rapids, Mich	45.3	88.3	43.0
Oakland, Cal	37.5	40.9	3.4	Syracuse, N. Y	23.0	70.2	47.2
Peoria, Ill	36.7	40.2	3.5	Evansville, Ind	16.3	73.3	57.0
Hoboken, N. J	36.0	40.8	4.8	Chicago, Ill	54.4	118.6	64.2
Worcester, Mass	39.9	45.2	5.3	Trenton, N. J	27.6	92.1	64.5
Albany, N. Y	—0.8	4.6	5.4	Portland, Oreg	94.9	163.9	69.0
Manchester, N. H	29.1	35.2	6.1	Nashville, Tenn	6.2	75.7	69.5
Cincinnati, Ohio	9.8	16.4	6.6	Salt Lake City, Utah	19.4	115.9	96.5
Somerville, Mass	53.5	61.0	7.5	Des Moines, Iowa	24.0	123.5	99.5
Troy, N. Y	—0.5	7.4	7.9	Kansas City, Mo	23.4	137.9	114.5
Charleston, S. C	1.6	9.9	8.3	Denver, Colo	25.4	199.5	174.1
Jersey City, N. J	26.6	35.0	8.4	St. Paul, Minn	22.5	221.1	198.6
Lowell, Mass	22.2	30.6	8.4	Minneapolis, Minn	23.1	251.4	228.3
Washington, D. C	21.0	29.7	8.7	Los Angeles, Cal	103.4	350.6	247.2
Camden, N. J	30.2	40.0	9.8	Omaha, Nebr	—27.0	360.2	387.2
Allegheny, Pa	23.4	33.8	10.4	Duluth, Minn	60.0	850.8	790.8
Fall River, Mass	40.9	52.0	11.1	Seattle, Wash	88.3	1,112.5	1,024.2
San Francisco, Cal	14.6	27.8	13.2	Kansas City, Kans	34.2	1,097.4	1,063.2

[1] Data from Twelfth Census, Vol. I, Table 7, pages 434–437, or Bulletin 70, Table 9, pages 9 and 10.

II. ESTIMATES BASED UPON THE NUMBER OF VOTES.

The method just analyzed depends upon illegitimate deduction from census figures; all other methods rest upon results from some other source. To test them it is needful to examine the accuracy of the basis figures and of the argument by which the total population is inferred therefrom.

A city's population is often estimated by multiplying the total vote at a recent election by some round number, such as 5. The abstract of vote cast is found in official documents, which may be assumed to be substantially accurate, though minor numerical errors frequently exist. How near to the truth is the assumption that the total population of a city is likely to be about five times the number of votes? It is evident that the ratio of votes to population must tend to vary as one or more of the following elements varies:

1. The proportion of males in the total population except in the cases of Denver and Salt Lake City, where women are entitled to vote.

2. The proportion of males of voting age, that is, 21 or over, in the total male population.

3. The proportion that the citizens make of the total males of voting age. By "citizens" is meant those who by birth or naturalization are citizens of the United States. The term for present purposes also includes in a few states aliens who have indicated an intention to become naturalized, by taking out first papers, and who are allowed after a fixed time to register and vote.

4. The proportion of "citizens" as thus defined who satisfy the legal conditions of residence in the state, city, and voting district required as a prerequisite to voting.

5. The proportion of resident "citizens" who possess at the given election the educational or other qualifications, or have paid the tax imposed in some states as a condition of voting.

6. The proportion of qualified voters who exercise their right to vote at the election in question by casting a ballot.

7. The proportion of ballots cast that appears in the largest total vote.

Of the foregoing conditions influencing the ratio of votes counted to total population not all are subject to statistical measurement. The census reports the number of each sex, the number of males of voting age, and the number of aliens. But neither from the census nor from any other source of information can the number of "citizens" who meet the residence, educational, or tax requirements, be derived. The election returns, as published, seldom give the total number of ballots counted, but only the total for each of a list of candidates and the scattering. Election returns were requested from the secretaries of state, but for 18 of the 78 cities could not be had. The figures reported were not used for Salt Lake

City, because women have the ballot there, nor for Troy, because the election returns related to a larger area than the census returns. Washington, D. C., has no part in a presidential election.

In the following table a statistical measure is presented for all the measurable elements affecting the ratio of votes cast to total population. Column 1 gives the per cent of males in the total population; column 2, the per cent of males over 21 years of age in the male population; column 3, the result of combining 1 and 2, the per cent of males over 21 years of age in the total population; column 4, the per cent of "citizens," so far as the census has enumerated that class, in the total adult male population; column 5, the per cent of the votes cast at the presidential election of 1900 to all "citizens;" column 6, the result of combining 4 and 5, the per cent of the votes cast at the presidential election of 1900 to the males over 21 years of age; and, finally, column 7, the combined result of all the factors, gives the per cent of the votes cast to the total population. The largest and smallest figures in the column in which they stand are printed in italic in order to call attention to the range of difference among the several cities in the matter to which the column relates. Thus, in the first column, Charleston, S. C., has the lowest and Seattle, Wash., the highest proportion of males to total population, and the difference between these two italicized figures, 18.0, is the range among the 78 cities in reference to this particular.

TABLE 2.—PERCENTAGE FIGURES BEARING UPON THE RELATION BETWEEN TOTAL VOTE CAST AND TOTAL POPULATION FOR CITIES HAVING AT LEAST 50,000 INHABITANTS: 1900.[1]

CITY.	Per cent of males in total population.	Per cent of males over 21 years of age in total male population.	Per cent of males over 21 years of age in total population.	Per cent of "citizens" in total males over 21 years of age.	Per cent of votes cast Nov. 6, 1900, to total "citizens."	Per cent of votes cast Nov. 6, 1900, to total males over 21 years of age.	Per cent of votes cast Nov. 6, 1900, to total population.
Maine:							
Portland	47.3	65.1	30.8	89.3	57.8	51.6	15.9
New Hampshire:							
Manchester	46.7	57.9	27.0	81.1	78.2	63.4	17.1
Massachusetts:							
Boston	49.0	64.0	31.4	84.2	56.4	47.5	14.9
Worcester	49.9	60.5	30.2	78.3	65.1	51.0	15.4
Fall River	47.9	53.4	25.6	*72.1*	58.4	42.2	10.8
Lowell	47.3	60.2	28.5	74.8	65.6	49.1	14.0
Cambridge	48.4	60.4	29.2	81.1	52.1	42.3	12.4
Lynn	48.6	64.5	31.4	86.4	59.3	51.3	16.1
Lawrence	48.4	58.9	28.5	75.5	69.0	52.1	14.8
New Bedford	47.6	57.8	27.5	72.6	56.2	40.8	11.2
Springfield	47.7	62.4	29.8	86.2	63.5	54.7	16.3
Somerville	47.8	61.7	29.4	83.7	51.5	43.1	12.7
Rhode Island:							
Providence	48.5	62.5	30.3	83.7	49.4	41.4	12.5
Connecticut:							
New Haven	49.9	60.5	30.2	86.7	81.1	70.3	21.2
Hartford	51.0	65.4	33.4	83.4	68.2	56.9	19.0
Bridgeport	49.8	62.0	30.9	84.0	75.3	63.2	19.6
New York:							
New York	49.6	59.1	29.3	80.3	75.0	60.3	17.7
Buffalo	49.6	56.0	27.8	90.9	76.6	69.6	19.4
Rochester	47.7	58.6	27.9	94.4	82.5	77.9	21.8
Syracuse	48.5	61.9	30.0	94.2	82.5	77.8	23.3
Albany	47.8	63.1	30.2	97.2	89.1	86.6	26.1
Troy	46.2	60.8	28.1	96.8	(2)	(2)	(2)
Utica	47.7	60.3	28.8	95.0	83.9	79.7	22.9
New Jersey:							
Newark	49.2	58.3	28.7	87.8	80.0	70.2	20.1
Jersey City	50.4	58.0	29.2	86.9	78.1	67.8	19.8
Paterson	49.3	57.1	28.2	85.4	83.2	71.1	20.0
Camden	48.9	59.9	29.3	94.7	83.9	79.4	23.3
Trenton	50.5	59.7	30.2	91.1	83.3	75.8	22.9
Hoboken	50.5	56.9	28.8	82.3	71.3	58.7	16.9
Elizabeth	50.8	57.4	29.1	86.8	80.7	70.1	20.4
Pennsylvania:							
Philadelphia	49.0	61.0	29.9	89.5	67.8	60.7	18.2
Pittsburg	51.5	58.3	30.0	85.9			
Allegheny	51.3	59.8	30.7	88.5			
Scranton	50.2	54.8	27.5	89.0			
Reading	49.6	57.5	28.5	96.1			
Erie	50.3	58.4	29.4	93.3			
Wilkesbarre	48.7	53.8	26.2	90.7			
Harrisburg	48.5	60.4	29.3	93.9			
Delaware:							
Wilmington	50.2	60.3	30.3	94.7	76.3	72.3	21.9
Maryland:							
Baltimore	47.8	58.1	27.8	96.4	83.0	80.0	22.2
District of Columbia:							
Washington	47.4	63.5	30.1	97.2	(3)	(3)	(3)
Virginia:							
Richmond	47.0	58.7	27.6	99.0	42.8	42.4	11.7
South Carolina:							
Charleston	*45.9*	55.4	*25.4*	98.2			
Georgia:							
Atlanta	46.0	56.0	25.8	98.5	22.3	22.0	*5.7*
Savannah	47.8	61.7	29.5	97.5	*21.5*	*21.0*	6.2
Ohio:							
Cleveland	50.5	57.9	29.2	88.5	78.2	69.2	20.2
Cincinnati	48.2	59.1	28.5	97.9	85.0	83.2	23.7
Toledo	49.8	58.3	29.0	96.0	77.4	74.2	21.5
Columbus	50.4	63.3	31.9	98.5	81.7	80.5	25.7
Dayton	49.4	61.1	30.2	98.3	89.1	*87.5*	*26.4*
Indiana:							
Indianapolis	49.4	62.9	31.1	99.1			
Evansville	48.8	58.2	28.4	*99.6*			
Illinois:							
Chicago	50.8	59.2	30.1	90.9	79.9	72.8	21.8
Peoria	51.2	63.0	32.3	97.8			

[1] Data from Twelfth Census, Vol. I, Tables 23, 80, and 82 (pages 609, ff.; 930, ff.; and 936, ff.), and the present bulletin, Table 9.
[2] Election returns are for a larger area than the census returns.
[3] No elections held in Washington, D. C.

TABLE 2.—PERCENTAGE FIGURES BEARING UPON THE RELATION BETWEEN TOTAL VOTE CAST AND TOTAL POPULATION FOR CITIES HAVING AT LEAST 50,000 INHABITANTS: 1900—Continued.

CITY.	Per cent of males in total population.	Per cent of males over 21 years of age in total male population.	Per cent of males over 21 years of age in total population.	Per cent of "citizens" in total males over 21 years of age.	Per cent of votes cast Nov. 6, 1900, to total "citizens."	Per cent of votes cast Nov. 6, 1900, to total males over 21 years of age.	Per cent of votes cast Nov. 6, 1900, to total population.
Michigan:							
Detroit	48.7	56.6	27.6	88.3	79.6	70.2	19.4
Grand Rapids	48.5	58.6	28.4	91.3	*95.7*	87.3	24.8
Wisconsin:							
Milwaukee	49.3	53.4	26.3	95.6	81.2	77.6	20.4
Minnesota:							
Minneapolis	50.9	61.8	31.4	88.2	68.9	60.7	19.1
St. Paul	51.8	60.5	31.3	93.1	53.6	49.9	15.6
Duluth	56.4	63.4	35.8	80.8	56.3	45.5	16.3
Iowa:							
Des Moines	49.8	61.1	30.4	97.8	77.2	75.5	23.0
Missouri:							
St. Louis	50.1	59.6	29.9	96.1	75.7	72.7	21.7
Kansas City	50.5	64.9	32.8	98.5	71.5	70.4	23.1
St. Joseph	55.1	60.6	33.4	99.0	39.3	38.8	13.0
Nebraska:							
Omaha	52.7	64.0	33.8	97.7	61.4	59.9	20.2
Kansas:							
Kansas City	51.9	58.4	30.3	98.1	70.8	69.4	21.0
Kentucky:							
Louisville	48.6	59.9	29.1	98.3	70.6	69.4	20.2
Tennessee:							
Memphis	51.1	60.1	30.7	98.4	----------	----------	----------
Nashville	47.4	57.9	27.4	99.2	----------	----------	----------
Louisiana:							
New Orleans	47.4	55.5	26.3	95.4	31.6	30.1	7.9
Texas:							
San Antonio	49.0	55.5	27.2	95.7	----------	----------	----------
Colorado:							
Denver	49.8	64.1	31.9	96.5	----------	----------	----------
Utah:							
Salt Lake City	48.3	*52.8*	25.5	92.1	(1)	(1)	*36.6*
Washington:							
Seattle	*63.9*	*76.7*	*49.0*	91.2	35.6	32.4	15.9
Oregon:							
Portland	58.8	72.2	42.4	77.2	42.9	33.1	14.1
California:							
San Francisco	53.9	69.8	37.6	83.3	58.8	49.0	18.4
Los Angeles	49.3	65.4	32.3	89.6	----------	----------	----------
Oakland	49.2	63.3	31.1	87.8	----------	----------	----------
All cities	49.7	60.0	29.8	88.8	[2]71.5	[2]63.0	[2]18.8

[1] Right of franchise extended to women.

[2] Ratio for the 58 cities for which election returns were available.

The first column of Table 2 shows that the male population of these cities as a whole is a trifle less than half (49.7 per cent) of the entire population, but that in the several cities the proportion is by no means the same. Closer examination, however, shows that in 61 of the 78 cities, or nearly four-fifths, the male population is between 47 and 51 per cent of the total, and in half of them it is between 48.5 and 50.5 per cent. Aside from a few cities, where the male population is greatly in excess, the proportion of the sexes does not depart far from equality.

From the second column of Table 2 it appears that the male adults are just three-fifths (60.0 per cent) of the total male population. In Salt Lake City they are little more than half (52.8 per cent); in Seattle, more than three-fourths (76.7 per cent). In nearly half (38) of the cities the male adults are between 58 and 62 per cent of the total number of males.

The third column of Table 2, presenting in combination the two preceding columns, shows that in Charleston only about one-fourth (25.4 per cent) of the population are adult males, while in Seattle nearly one-half (49.0 per cent) are adult males. Nearly three-tenths (29.8 per cent) of the population of the 78 cities taken collectively are potential voters.

In advancing from the topic of sex and age composition to that of "citizenship" the statistical basis becomes less secure. The requirements for "citizenship" vary in the several states. In most of them aliens are not allowed to vote, but in a few states, as already explained, aliens who have indicated their intention to become citizens by taking out first papers and have resided in the state for a specified time thereafter, are given the privilege of the ballot, and thus for the purposes of this discussion, are "citizens." The Twelfth Census inquired about each foreign born male adult, whether he was an alien, had taken out his first papers, or was a full-fledged citizen of the United States. But the enumerators were often unable to obtain this information. In Fall River one-ninth (11.2 per cent) and in Manchester one-tenth (10.3 per cent) of the adult males were persons of foreign birth whose condition of citizenship was not reported. In the computations, the results of which are presented in the fourth and fifth columns of Table 2, the number of "citizens" has been obtained by subtracting from the total number of males over 21 years of age the aliens and, except in the few states where they are allowed to vote, the foreign born who have advanced toward citizenship only so far as to have taken out their first papers. The total thus reached would include substantially all who would be entitled to vote, together with some who would not, because of failure to meet the residence, educational, or tax requirements.

From column 4 of Table 2 it appears that in these 78 cities nearly nine-tenths (88.8 per cent) of the men are citizens or of unknown status, and probably entitled to vote, provided they meet the other requirements of the state or territorial law. In Fall River, the ratio is lowest (72.1 per cent), while in Evansville, it is highest (99.6 per cent).

No information could be obtained which would serve,

even approximately, as a statistical measure of the influence exercised separately by any one of the last conditions in the preceding list of those affecting the ratio of votes cast to population (page 4). They are important factors, but elude separate statistical measurement. The ratio of votes cast, November 6, 1900, to the total number of citizens, however, is some index of the joint effect exercised by these four conditions. To obtain the ratio, the vote cast at the presidential election of 1900 was analyzed with the aid of information furnished through the courtesy of the respective secretaries of state. To determine the total number of votes cast and counted in each city, the following figures were compared so far as they were obtainable:

1. The sum of the votes for the presidential electors receiving the largest number of votes in each party.

2. The sum of the votes for the several candidates for election to the national House of Representatives.

3. The sums of the votes for the several candidates for governor and other state offices.

The largest of these sums was assumed to be the best approximation to the total number of votes cast. In this way the totals found in Table 9 (page 14) were obtained and from them the per cents presented in columns 5, 6, and 7 of Table 2 were computed.

In these columns only 58 of the 78 cities are included. For 18 cities the secretaries of state were unable to supply the needed information. Among them was Chicago, but as the figures for Cook county were available and as 92.4 per cent of its population live in Chicago, the figures for Cook county have been employed.

Column 5 of Table 2 shows that in the 58 cities here included, the vote cast November 6, 1900, amounted to over seven-tenths (71.5 per cent) of the "citizen" population, and that the several cities differed more in this per cent than they did in any of the preceding, the vote in Savannah being about one-fifth (21.5 per cent) of the "citizen" population and in Grand Rapids over nineteen-twentieths (95.7 per cent).

In order to avoid the objection that the number of "citizens" obtained in the manner already explained must involve some errors, a sixth column has been added wherein is given the ratio that the vote cast November 6, 1900, bears to the entire adult male population.

From column 6 it appears that the votes cast November 6, 1900, in the 58 cities were about five-eighths (63.0 per cent) of the total male population of voting age; in Savannah, only about one-fifth (21.0 per cent) of the adult male population voted, and in Dayton seven-eighths (87.5 per cent) voted.

The seventh and last column of Table 2 shows the net result of the six preceding. It appears that in the 58 cities one-sixth (18.8 per cent) of the population voted at the presidential election of 1900. In determining the average given in the last line of this column the figures for Salt Lake City have been excluded, since in that city alone of those appearing in this column, women are entitled to vote. This explains the very high proportion of votes cast to total population in Salt Lake City. With that exception the largest proportion was found in Dayton, where over one-fourth of the population (26.4 per cent) voted. The lowest per cent was in Atlanta, where only about one-seventeenth (5.7 per cent) voted. The great range between these extremes is sufficient evidence that in the different American cities the vote cast bears very different ratios to the population, and that the assumption of a uniform ratio between these elements can not be admitted.

To bring out this conclusion with greater clearness, Table 3 has been prepared. It employs not the usual census method, but the ordinary or popular method of stating the numerical relation between the vote and the population, that is, not as a per cent, but as the number of inhabitants to each vote. The cities are arranged not geographically, but according to the size of the ratio.

TABLE 3.—NUMBER OF INHABITANTS, JUNE 1, 1900, TO EACH VOTE CAST NOVEMBER 6, 1900.

Salt Lake City, Utah	2.73	Rochester, N. Y	4.60	Buffalo, N. Y	5.17	Boston, Mass	6.70
Dayton, Ohio	3.79	St. Louis, Mo	4.60	Minneapolis, Minn	5.24	Lawrence, Mass	6.75
Albany, N. Y	3.82	Toledo, Ohio	4.64	Hartford, Conn	5.27	Portland, Oreg	7.11
Columbus, Ohio	3.89	New Haven, Conn	4.72	San Francisco, Cal	5.42	Lowell, Mass	7.14
Grand Rapids, Mich	4.03	Kansas City, Kans	4.75	Philadelphia, Pa	5.51	St. Joseph, Mo	7.71
Cincinnati, Ohio	4.22	Elizabeth, N. J	4.90	New York, N. Y	5.66	Somerville, Mass	7.88
Syracuse, N. Y	4.29	Milwaukee, Wis	4.90	Manchester, N. H	5.84	Providence, R. I	7.99
Camden, N. J	4.30	Omaha, Nebr	4.94	Hoboken, N. J	5.92	Cambridge, Mass	8.09
Kansas City, Mo	4.33	Cleveland, Ohio	4.95	Springfield, Mass	6.14	Richmond, Va	8.57
Des Moines, Iowa	4.35	Louisville, Ky	4.95	Duluth, Minn	6.15	New Bedford, Mass	8.92
Utica, N. Y	4.36	Newark, N. J	4.97	Lynn, Mass	6.22	Fall River, Mass	9.27
Trenton, N. J	4.37	Paterson, N. J	4.99	Portland, Me	6.30	New Orleans, La	12.64
Baltimore, Md	4.50	Jersey City, N. J	5.05	Seattle, Wash	6.30	Savannah, Ga	16.18
Wilmington, Del	4.57	Bridgeport, Conn	5.11	St. Paul, Minn	6.40	Atlanta, Ga	17.61
Chicago, Ill	4.58	Detroit, Mich	5.16	Worcester, Mass	6.50		

Table 3 shows how very wide of the mark in nearly all of these cities would be an estimate of the population made by multiplying the vote cast by any single ratio, and that this method of estimating a city's population is without foundation.

While Table 3 proves that no single ratio for the different American cities is possible, it might still be urged that the ratio of a city once determined would remain approximately constant for a series of years. It has been found impracticable at this date to get the figures for the vote of these cities in 1880 and 1890, and so to examine this objection in the light of city election statistics. But the figures for the states and territories have been obtained, and from them Table 4 has been prepared. After searching all accessible state publications, about two-fifths of the figures for 1880 and 1890 had to be drawn from such private publications as the American Almanac and the Tribune Almanac.

As no presidential election was held in 1890, and as the vote at other elections is usually smaller, the vote in 1890 was estimated by taking the average of the vote for presidential electors in 1888 and 1892, except for 5 states, in which the vote in 1890 for some state officer was higher than the average thus obtained. Aside from this difference, the method of determining the highest vote was like that already described for the cities (page 7), but more laborious, because the votes for a longer list of officers were available for comparison.

Where local criticism of census figures has been made, it has not infrequently taken this form: The vote cast in 1900 increased over that of 1890 by such a per cent and the reported population by a per cent so much smaller as to seem incredible. In the form stated the objection overlooks the fact that the vote in 1890 was smaller in most states and cities than it would have been had a President been elected in that year. But when this difficulty is met, as in the method here employed, by estimating the vote in 1890 from the average of the votes for 1888 and 1892, the question still remains: Does the increase in population run closely parallel with the increase in votes? Light is thrown upon the question by Table 4. It has been cast in the form of a comparison by states and territories between the increase of population and the increase of votes during the last two decades.

TABLE 4.—PER CENT OF INCREASE IN POPULATION AND IN VOTE CAST, 1890–1900 AND 1880–1890.[1]

STATE OR TERRITORY.	PER CENT OF INCREASE 1890–1900.		PER CENT OF INCREASE 1880–1890.	
	In population.	In vote cast.	In population.	In vote cast.
The United States	20.9	18.8	24.9	26.7
North Atlantic division	20.9	15.9	19.9	17.5
Maine	5.0	−3.6	1.9	−17.2
New Hampshire	9.3	2.6	8.5	4.0
Vermont	3.4	12.6	0.0	−15.7
Massachusetts	25.3	12.8	25.6	30.2
Rhode Island	24.0	20.4	24.9	60.7
Connecticut	21.7	13.7	19.8	19.9
New York	21.1	16.5	18.0	20.3
New Jersey	30.4	25.1	27.7	30.4
Pennsylvania	19.9	17.3	22.8	14.3
South Atlantic division	17.9	1.6	16.6	10.2
Delaware	9.6	19.3	14.9	19.6
Maryland	14.0	24.7	11.5	22.6
District of Columbia	21.0	----------	29.7	----------
Virginia	12.0	−9.7	9.5	40.2
West Virginia	25.7	33.6	23.3	46.6
North Carolina	17.1	10.7	15.6	17.3
South Carolina	16.4	−32.2	15.6	−57.9
Georgia	20.6	−32.6	19.1	−0.1
Florida	35.0	−22.6	45.2	−1.0
North Central division	17.5	24.4	28.8	35.5
Ohio	13.2	23.0	14.8	16.6
Indiana	14.8	21.8	10.8	15.9
Illinois	26.0	39.6	24.3	30.4
Michigan	15.6	16.4	27.9	33.6
Wisconsin	22.2	21.9	28.2	35.9
North Central division—Cont'd.				
Minnesota	33.7	20.1	66.7	75.9
Iowa	16.7	25.2	17.7	31.3
Missouri	16.0	28.7	23.6	33.8
North Dakota	67.1	59.7	278.4	300.1
South Dakota	15.2	24.0		
Nebraska	0.3	12.8	184.1	14.5
Kansas	3.0	8.0	43.3	62.8
South Central division	26.1	4.7	23.0	25.8
Kentucky	15.5	36.5	12.7	28.2
Tennessee	14.3	−3.5	14.6	16.9
Alabama	20.8	−20.4	19.8	15.1
Mississippi	20.3	−30.0	14.0	−27.5
Louisiana	23.5	−33.2	19.0	10.5
Arkansas	16.3	−30.5	40.6	65.6
Indian Territory	117.6	----------	----------	----------
Oklahoma	407.6	768.0	----------	----------
Texas	36.4	15.4	40.4	47.6
Western division	31.9	[2] 63.3	71.3	[3] 69.3
Montana	70.3	104.7	237.5	119.6
Idaho	82.7	[2] 218.1	168.8	175.1
Wyoming	47.9	53.7	192.0	[3] 109.1
Colorado	30.6	[2] 138.5	112.1	73.4
New Mexico	21.9	22.0	28.5	58.6
Arizona	39.3	50.0	47.4	43.9
Utah	31.3	[2] 299.2	44.4	16.9
Nevada	−10.6	−17.7	−26.5	−32.6
Washington	45.0	96.2	365.1	246.4
Oregon	30.2	14.5	79.5	80.2
California	22.4	16.4	39.7	58.1

[1] Data from Twelfth Census, Vol. 1, Tables VI and 2 (Bulletin 64, Tables 6 and 8) and Table 10 of this bulletin.
[2] Woman suffrage granted in Colorado, Idaho, and Utah between 1890 and 1900.
[3] Woman suffrage granted in Wyoming in 1889.

In the United States as a whole the divergence at each decade between the rate of increase of population and that of votes is not wide. In the earlier period the vote increased about 2 per cent faster than the population; in the later the relation of the two was reversed.

But in the five great groups of states a much greater diversity appears. Between 1880 and 1890 the population of the North Atlantic, South Atlantic, and Western divisions increased more rapidly than the vote, while in the North Central and South Central divisions the rates of increase in the vote were the greater. Between 1890 and 1900 the population of the North Atlantic, South Atlantic, and South Central groups increased much more rapidly than the vote; in the North Central and Western groups the increase in vote was the more rapid.

The real test of the hypothesis, however, is found neither in the figures for the United States as a whole, nor in those for the five divisions, but in those for the several states. The table shows for the two decades 94 cases in which there might be a coincidence between the rate of increase of population and that of vote cast. In only 4, namely, Connecticut and Oregon from 1880 to 1890, and Michigan and Wisconsin from 1890 to 1900, were the two rates within 1 per cent of agreeing. This indicates that in American states and territories under present conditions there is not one chance in twenty that the increase of population will keep even pace with that of votes cast. In half of these 94 instances the per cent of decennial increase of population differed from that of vote cast by more than 12. The table shows, also, that the variation between increase of votes and increase of population in the Southern and Western states is much greater than it is in the North Atlantic and North Central divisions, where most of the great cities of the country lie. But even in the North Atlantic and North Central states, in half of the 41 cases the per cent of decennial increase

of population differed by 8, or more, from the per cent of decennial increase in vote cast. Evidence previously offered has shown that the variations in such figures for cities are usually greater than they are for states. Hence, the argument applies to cities *a fortiori*, and the conclusion that in no way can a sound inference be drawn from the figures of vote cast to the population of a city seems established beyond reasonable doubt.

III. ESTIMATES BASED UPON A SCHOOL CENSUS.

Most of the states and territories provide by statute for a periodical census of the population of school age. It is usually taken annually and the results published in state and municipal reports. For the purpose of such a census the school age as specified by statute is not the same in the several states and territories, the lower limit ranging from 4 to 8 years and the upper from 14 to 20 years. The smallest number of years included is 10 and the highest 17. The most ordinary limits are 6 and 20, and 5 and 20, the former established by 11, the latter by 9 states. From the number of persons of school age as thus returned, an estimate of the population of a city is sometimes derived by multiplying the number of school children enumerated by the ratio which that class of persons is thought to bear to the total population. The accuracy of such an estimate depends upon the accuracy of the ratio and the accuracy of the school census.

The ratio that naturally suggests itself as the best to employ in such a case, is that derived from the figures of the next preceding census for the city under examination. Table 5 has been constructed to test the accuracy of this assumption. The limits of school age used by the Federal Census, namely 5 to 20, inclusive, have been adopted, no other being available.

TABLE 5.—RATIO OF CHILDREN OF SCHOOL AGE (5-20) TO POPULATION IN 1900 AND 1890, AND PER CENT OF ERROR IN ESTIMATES REACHED BY USE IN 1900 OF RATIO ESTABLISHED IN 1890, FOR CITIES HAVING IN 1900 AT LEAST 50,000 INHABITANTS.[1]

CITY.	NUMBER IN TOTAL POPULATION TO EACH PERSON OF SCHOOL AGE (5-20)—		Per cent of error in estimate reached by multiplying number of persons (5-20) in 1900 by ratio (1890) of persons 5-20 to total population in city named.
	1900	1890	
Maine:			
Portland	3.97	3.58	9.7
New Hampshire:			
Manchester	3.32	3.12	6.2
Massachusetts:			
Boston	3.90	3.66	6.1
Worcester	3.49	3.35	4.0
Fall River	2.95	2.85	3.4
Lowell	3.48	3.24	7.0
Cambridge	3.60	3.35	7.0
Lynn	3.87	3.79	2.0
Lawrence	3.40	3.20	5.8
New Bedford	3.31	3.39	[2]2.4
Springfield	3.76	3.62	3.8
Somerville	3.79	3.55	6.3
Rhode Island:			
Providence	3.66	3.48	5.0
Connecticut:			
New Haven	3.51	3.33	5.2
Hartford	3.94	3.62	8.1
Bridgeport	3.57	3.37	5.5
New York:			
New York	3.34	3.28	1.9
Buffalo	3.08	3.10	[2]0.6
Rochester	3.28	3.14	4.3
Syracuse	3.48	3.25	7.3
Albany	3.54	3.13	11.5
Troy	3.44	3.20	7.0
Utica	3.47	3.27	6.8
New Jersey:			
Newark	3.29	3.09	6.0
Jersey City	3.25	3.06	5.9
Paterson	3.17	2.97	6.3
Camden	3.31	3.23	2.4
Trenton	3.28	3.17	3.4
Hoboken	3.17	3.00	5.5
Elizabeth	3.21	3.01	6.3
Pennsylvania:			
Philadelphia	3.50	3.38	3.4
Pittsburg	3.17	2.98	6.1
Allegheny	3.25	3.02	7.2
Scranton	2.97	2.80	5.9
Reading	3.15	2.95	6.4
Erie	3.19	2.91	8.7
Wilkesbarre	2.96	2.79	5.7
Harrisburg	3.30	3.09	6.3
Delaware:			
Wilmington	3.32	3.27	1.4
Maryland:			
Baltimore	3.17	3.10	2.3
District of Columbia:			
Washington	3.61	3.11	13.7
Virginia:			
Richmond	3.17	2.95	6.8
South Carolina:			
Charleston	2.98	2.93	1.8
Georgia:			
Atlanta	2.99	2.85	4.6
Savannah	3.31	3.12	5.8
Ohio:			
Cleveland	3.13	3.01	3.8
Cincinnati	3.23	3.08	4.7
Toledo	3.17	2.97	6.4
Columbus	3.43	3.15	8.2
Dayton	3.37	3.10	7.9
Indiana:			
Indianapolis	3.48	3.15	9.5
Evansville	3.09	2.91	5.8
Illinois:			
Chicago	3.23	3.25	[2]0.6
Peoria	3.44	3.25	5.4
Michigan:			
Detroit	3.11	3.06	1.7
Grand Rapids	3.20	3.15	1.5
Wisconsin:			
Milwaukee	2.89	2.87	0.6
Minnesota:			
Minneapolis	3.36	3.68	[2]9.6
St. Paul	3.17	3.44	[2]8.5
Duluth	3.43	4.15	[2]21.1
Iowa:			
Des Moines	3.38	2.84	14.9
Missouri:			
St. Louis	3.20	3.02	5.7
Kansas City	3.53	3.47	1.7
St. Joseph	3.04	2.93	3.7
Nebraska:			
Omaha	3.35	3.24	3.4
Kansas:			
Kansas City	3.10	3.03	2.3
Kentucky:			
Louisville	3.27	3.01	8.1
Tennessee:			
Memphis	3.19	3.15	1.2
Nashville	3.10	2.88	7.2
Louisiana:			
New Orleans	3.03	2.90	4.4
Texas:			
San Antonio	2.90	2.91	[2]0.2
Colorado:			
Denver	3.58	4.06	[2]13.5
Utah:			
Salt Lake City	2.91	3.03	[2]4.1
Washington:			
Seattle	4.43	4.37	1.3
Oregon:			
Portland	3.90	4.29	[2]10.1
California:			
San Francisco	3.95	3.58	9.3
Los Angeles	3.59	3.48	3.2
Oakland	3.46	3.20	7.5
All cities	3.33	3.22	

[1] Data from Twelfth Census Bulletins 67, 75, 77, 79, 81, 86, 89, 91, 94, 97, and 102, Table 6; and Eleventh Census Population, Part I, Table 72, page 742.
[2] Estimate too high.

The first entry on the last line of the table shows that the number of children between 5 and 20 years of age in 1900 for all the 78 cities collectively must be multiplied by 3.33 to get the entire population in 1900. But at the time these estimates were needed and made the census of 1890 was the last the figures for which were available, except for cities lying in states which had taken a state census between 1890 and 1900. The ratios for 1890 are given in the second column of Table 5. The entry in the last line of this column shows that the number of children between 5 and 20 years of age in 1890 for all the 78 cities collectively must be multiplied by 3.22 to get the entire population in 1890. To estimate the population in 1900 of any city on the list, its population of school age, which is supposed to be known, might be multiplied by the ratio which the number of persons of school age in 1890 bore to the total population in that year. The per cent of error resulting from this method of estimate is given for each city in column 3. In 68 of the 78 cities an estimate so reached would be too small, this being due, as shown by examination of columns 1 and 2, to the decreasing proportion of children of school age in most of these cities. The average error of these 78 estimates is 5.7 per cent.

The evidence indicates that, if the number of children of school age is known, an estimate of a city's population can be made therefrom with greater accuracy than from the population of the last two censuses or from the number of votes cast at a presidential election.

The point remaining for examination is the accuracy of school censuses. By correspondence with state and municipal officers the figures for school censuses in 1900 have been obtained for 47 cities. But in only 4 are the age limits the same as those published by the Federal census, namely, 5–20, and, in consequence, the information from these sources can not be compared with much confidence in the results. But for the states and territories the Twelfth Census reports both the ages 5–20, as in the cities, and the ages 5–17. There are 8 states and territories from which, in one way or the other, comparable returns are obtained. But there are also 17 states and territories in which the school age adopted by state authority differs by only 1 year from one or the other of those adopted by the Federal Government, 7 states and territories in which it differs by 2, and 1 in which it differs by 3 years. As the Eleventh Census reported the population of each state and territory classified by single years of age, and as the age composition of a state's population varies but little from decade to decade, it is possible to estimate with reasonable accuracy from the returns of the Twelfth Census the population of a state in 1900 within the age limits adopted by the state.

In the following tables such a process of estimating has been used wherever the limits of school age reported by the Twelfth Census did not agree with those of the states:

TABLE 6.—COMPARISON OF STATE SCHOOL CENSUSES OF 1900 WITH RESULTS OF TWELFTH CENSUS.

STATE OR TERRITORY.	Age limits for state school census.	Persons of school age by state census.	PERSONS WITHIN SAME AGE LIMITS BY TWELFTH CENSUS.		Probable per cent of error in state school census.	STATE OR TERRITORY.	Age limits for state school census.	Persons of school age by state census.	PERSONS WITHIN SAME AGE LIMITS BY TWELFTH CENSUS.		Probable per cent of error in state school census.
			Enumerated.	Estimated.					Enumerated.	Estimated.	
Arizona	6–17	20,833		28,890	—27.9	New Hampshire	5–15	71,544		73,510	—2.7
Arkansas	6–20	484,619		492,960	—1.7	New Jersey	5–17	457,479	470,741		—2.8
California	5–16	361,157		314,140	+15.0	New Mexico	5–20	53,008	69,712		—21.0
Colorado	6–20	153,142		148,180	+3.3	North Carolina	6–20	659,629		703,290	—6.2
Florida	6–20	161,428		184,240	—12.4	North Dakota	6–19	92,009		96,380	—4.5
Idaho	5–20	54,839	54,964		—0.2	Ohio	6–20	1,226,366		1,252,800	—2.1
Illinois	6–20	1,588,895		1,476,160	+7.6	Oklahoma	6–20	127,921		135,850	—5.8
Indiana	6–20	756,004		788,310	—4.1	Oregon	4–19	133,181		134,280	—0.8
Iowa	5–20	731,154	767,870		—4.8	Rhode Island	5–15	82,239		84,140	—2.3
Kansas	5–20	508,854	527,560		—3.5	Tennessee	6–20	768,843		729,870	+5.3
Kentucky	6–19	727,531		702,860	+3.5	Texas	8–17	706,546		761,590	—7.2
Maine	4–20	211,085		213,130	—1.0	Utah	6–17	62,297		81,420	—23.5
Michigan	5–19	721,698		745,560	—3.2	Vermont	5–20	90,648	98,614		—8.1
Missouri	6–19	986,665		969,830	+1.7	Washington	5–20	139,097	158,245		—12.1
Montana	6–20	57,210		60,340	—5.2	West Virginia	6–20	307,581		332,050	—7.4
Nebraska	5–20	377,791	386,384		—2.2	Wisconsin	4–19	731,063		747,640	—2.2
Nevada	6–17	9,075		8,370	+8.4						

In the 8 instances in which the age limits of the two censuses are the same, and in which resort to estimates was unnecessary, the school census was deficient by amounts ranging between two-tenths of 1 per cent for Idaho and 24.0 per cent for New Mexico. Of the 25 cases in which recourse to estimates was necessary, the school census was apparently deficient in 18, including all states east of the Mississippi River except Illinois, Kentucky, and Tennessee. It is probable that the state school censuses do not include Indian children of school age, and that this partly accounts for the wide discrepancies in several Western states. But even in the Eastern states the results are so divergent as to cast doubt upon the state censuses of school children.

It might be urged that to count the children of school age in cities is far easier than to count them throughout an entire state, and that the city school censuses may be more accurate than would appear by analogy from Table 6. The force of the objection may be weakened, if not destroyed, in the following way. The population of nearly all our large cities is increasing decade by decade, and probably also year by year. If so, the number of school children should increase slowly but steadily. A bad census, except in the rare cases where fraud is an element, results almost invariably in an undercount. If the

city school censuses as a class are sometimes bad and sometimes good, this will probably be reflected in very irregular increases from year to year in the reported number of school children. Indeed, a careless census taken the year after a thorough one might report a smaller number of school children than was found by its predecessor. To show the irregular increases in the reported number of school children Table 7 has been prepared. It includes figures for the 38 cities regarding which the facts have been secured. The first column gives the highest amount and the third the highest per cent of increase in the reported numbers of school children at two successive years between 1890 and 1900; the second column gives the lowest amount and the fourth the lowest per cent of increase, or, where there has been a decrease, the highest per cent of decrease between any two such years; the fifth column gives the difference between the third and fourth, and so measures roughly the fluctuations in the reported figures for the ten years. A small figure in column 5 is an indication, although not a proof, that the school censuses for each year have been accurate; a large figure in column 5 is an indication that some, at least, of the school censuses in that city between 1890 and 1900 were inaccurate.

TABLE 7.—LIMITS IN AMOUNT AND IN RATE OF INCREASE OF PERSONS OF SCHOOL AGE FOR ANY YEAR BETWEEN 1890 AND 1900.

CITY.	Amount of increase for any year between 1890 and 1900.		Per cent of increase for any year between 1890 and 1900.		Range of per cents, i. e., difference between two preceding columns.
	Highest.	Lowest.	Highest.	Lowest.	
Maine:					
Portland	541	−1,143	3.9	−9.5	13.4
Massachusetts:					
Boston	3,639	144	4.3	0.2	4.1
Worcester	903	137	4.7	0.7	4.0
Fall River	1,342	−839	7.7	−4.2	11.9
Lowell	3,047	−1,958	22.8	−11.9	34.7
Cambridge	1,351	−365	9.8	−2.5	12.3
Lynn	789	−436	8.5	−4.1	12.6
Lawrence	482	−150	4.8	−1.7	6.5
New Bedford	1,384	−393	15.5	−3.5	19.0
Springfield	536	39	6.1	0.5	5.6
Somerville	981	−360	10.3	−3.7	14.0
Rhode Island:					
Providence	2,762	−626	10.6	−2.4	13.0
Connecticut:					
New Haven	722	156	3.6	0.8	2.8
Hartford	940	−67	8.1	−0.6	8.7
Bridgeport	1,255	−455	8.3	−3.3	11.6
New Jersey:					
Newark	4,008	−3,469	7.8	−6.0	13.8
Jersey City	9,969	−14,173	15.3	−20.3	35.6
Paterson	1,979	−605	7.4	−2.7	10.1
Camden	2,589	−2,102	16.5	−11.8	28.3
Trenton	1,354	−251	8.5	−1.7	10.2
Hoboken	1,641	−4,118	10.4	−21.3	31.7
Elizabeth	587	−35	5.6	−0.3	5.9
Ohio:					
Cleveland	4,615	1,992	6.1	2.2	3.9
Cincinnati	11,104	−1,345	12.7	−1.4	14.1
Toledo	3,264	−1,263	11.7	−4.3	16.0
Columbus	2,020	−163	6.6	−0.6	7.2
Dayton	1,549	−778	8.1	−4.1	12.2
Michigan:					
Detroit	7,827	−6,755	10.8	−8.5	19.3
Grand Rapids	3,775	−940	22.8	−3.6	26.4
Wisconsin:					
Milwaukee	4,372	742	5.5	0.8	4.7
Iowa:					
Des Moines	1,102	103	6.9	0.7	6.2
Nebraska:					
Omaha	3,019	−1,998	11.3	−5.8	17.1
Kansas:					
Kansas City	1,302	−435	11.2	−3.7	14.9
Utah:					
Salt Lake City	1,221	64	13.8	0.5	13.3
Oregon:					
Portland	920	−348	6.9	−1.8	8.7
California:					
San Francisco	3,073	−944	4.7	−1.2	5.9
Los Angeles	3,723	217	22.0	2.0	20.0
Oakland	1,269	−283	10.2	−2.1	12.3

It is hardly possible to demand more evidence than is contained in Table 7, that city school censuses as a class are not entitled to implicit acceptance. In 29 of the 38 cities the number of school children enumerated at some year between 1890 and 1900, was less than the number enumerated the preceding year. The conclusion may be confirmed, however, by quoting a few typical admissions found in the reports.

DETROIT.—"The result of the census enumeration for several years past has been very unsatisfactory." (Board of Education Annual Report, 1893, p. 14.)

JERSEY CITY.—"The utter unreliability of these returns renders them, as has been proved, a very unsafe guide." (Board of Education Annual Report, 1897, p. 50.)

"Enough has been given to show that error is generally prevalent in the census reports of the whole state." (Ibid., 1898, p. 34.)

CAMBRIDGE.—"School returns show more children in the schools, public and private, than were found by the enumerators." (School Committee Annual Report, 1899, p. 53.)

NEW BEDFORD.—"The returns this year prove that the census of 1896 was short from 500 to 700 children." (School Committee Annual Report, 1897, pp. 4-5.)

SYRACUSE.—"The results of the enumeration were totally void of any reliable information." (Board of Education Annual Report, 1895, p. 21.)

On the whole, therefore, city school censuses and *a fortiori* estimates of total population based upon them do not compare in accuracy with a complete enumeration.

IV. ESTIMATES BASED UPON A DIRECTORY CANVASS.

An estimate of population is based more often perhaps on the number of names in the city directory than on any other figure. This is not due to the fact that the number of names in the directory is a more trustworthy index of population, but to the fact that many publishers of directories in each issue estimate the population. During the canvass they gain information that would be of much service in making an estimate, and are better prepared than others for the task. The directory estimate, based upon information gained annually and published by well-known firms, is given a wider circulation than is accorded to estimates made in other ways. Even where a directory publisher does not print an estimate in the directory, as is true in the majority of cases, he may give one out to the local newspapers, based upon the results of his canvass, or other persons may make estimates resting on the number of names in the directory.

These estimates are made by multiplying the number of names in the directory by a ratio assumed to represent

the most probable number of persons in the total population to each name in the directory. It is more usual for directory publishers to print the number of names contained in the directory than it is for them to base thereon an estimate of the city's population. They seldom explain, however, the meaning of this phrase "number of names," and it does not, as might at first be thought, carry its meaning on its face. Does it include not merely persons, but firms, buildings, societies, and public institutions, of which entry is frequently made in the directory? Does it include each entry of the same name where two or more such entries appear as cross references? The meager evidence obtainable indicates that "number of names" means number of entries. In that case a considerable per cent of duplicates or inadmissible entries is involved. This per cent may be different in the same city for different years. Another possibility of error arises in the fact that the names in very few directories are carefully counted; usually the number of names stated is an estimate.

Furthermore the entries in a directory do not include the names of all adults, for those of married women seldom appear. Unmarried women living with their families and not engaged in any business are usually omitted. The age limit below which persons are excluded varies from 16 to 21. In a large city many men may be regarded as floating or transient population. Their addresses change so often that it is of little use to include them in a directory. Their social or business importance is so slight that the value of the directory to its public would be little heightened, if all their names appeared. The proportionate importance of this class, and the directory publisher's treatment of it, vary in the different cities and probably from time to time in the same city.

The directory publisher is not bound in any way to restrict his list to persons residing within the corporate limits of the municipality. A great many persons residing outside, but doing business in the city, are included in the city directories. Oftentimes residents of those suburbs which are an integral part of the city, viewed as a business center, are included even when they do not have a place of business within the corporate limits of the larger city.

The starting point of a directory must usually be the directory of the same city for the preceding year. Many of the residents have died or removed since the previous canvass. Many others have come to reside in the city since that time, or have begun business there. The names of the former must be expunged, those of the latter added. To get the necessary information and decide upon each case takes time and money. The efficiency with which this work is done varies in the different cities and in the same city at different periods.

For all these reasons the phrase "number of names" does not sharply define any class of the population and in consequence the ratio between the "number of names" and the population is not likely to be uniform. This is indicated by noting that, where directory publishers have estimated the total population during the last ten years by multiplying the number of names in the directory, the figure used as a multiplier varied from 2 to $5\frac{1}{4}$, and in most cases it was a simple number, namely, $2\frac{1}{4}$, $2\frac{1}{2}$, $2\frac{3}{4}$, 3, $3\frac{1}{4}$, or $3\frac{1}{2}$. Round numbers like these carry on their face a demonstration that they are the results of guessing rather than of accurate calculation. The evidence shows that the ratio between the number of names in a directory and the population is almost unknown, but varies with the age and sex composition of the population, and the conditions and rules of the directory canvass.

A directory compiler doubtless amasses local information which might enable him to estimate closely the population of his city, provided he were an expert in making estimates, gave his attention seriously to the subject, and were animated only by a desire to get as near as possible to the truth. But in the great majority of directories examined the indications are that some of these conditions are lacking. Not a single directory bears evidence that the author of the estimate appreciated the difficulties in the way of an accurate result from the information before him. His estimate is a mere incident to his main object and receives little attention. It is usually dismissed in a sentence with no explanation of the method employed, often with no statement of the ratio adopted, and no indication of the evidence on which it rests. Most directories omit it entirely, thereby indicating that they regard it as aside from their real work.

It is a notorious fact that in many cities of the United States public sentiment is in favor of having the population appear as large as possible. There are no strong motives for an underestimate; there are many motives of local pride and business rivalry for an overestimate. These are likely to weigh with the maker of a directory appealing exclusively to local patronage, but are of different strength in different cities. Opposed to them are the business integrity and judgment of the directory maker and his unwillingness to make an estimate so wide of the truth as to arouse criticism. Motives of the former character have apparently influenced certain directory makers to count for purposes of an estimate names of deceased persons, of nonresidents, and of others not entitled to recognition. They have also influenced some to exaggerate the true ratio of "number of names" to population.

Table 8 is designed to test the serviceability of directories for the purpose under consideration. The first three columns throw light upon the publishers' estimates. The first gives the ratios of the "number of names" to population; the second, the ratios used by the publishers; and the third the per cent of error in their estimates. Column 4 gives the rate of decennial increase in population, and column 5 the rate of decennial increase in "number of names."

TABLE 8.—FIGURES RELATIVE TO POPULATION ESTIMATES BASED ON "NUMBER OF NAMES" IN DIRECTORY.

CITY.	Number of persons in total population to each name in directory, 1900.	Number of persons in total population to each name in directory assumed by publisher, 1900.	Per cent of error in publisher's estimate, 1900.	PER CENT OF INCREASE, 1890–1900	
				In population.	In names.
New Hampshire:					
Manchester	2.28			29.1	25.8
Massachusetts:					
Boston	2.27			25.1	27.9
Worcester	2.44			39.9	42.4
Fall River	2.86			40.9	53.8
Lowell	2.50			22.2	19.4
Lynn	2.28			22.9	26.0
Lawrence	2.44			40.1	53.0
Springfield	1.92				
Rhode Island:					
Providence	2.23			32.9	34.6
Connecticut:					
New Haven	1.91			32.9	43.0
Hartford	2.07	2.30	2.9	50.0	58.1
Bridgeport				45.3	44.8
New York:					
Buffalo	2.77	3.20	13.5	37.8	49.2
Rochester	2.28			21.4	28.5
Syracuse	2.03			23.0	21.5
Albany	2.22			— 0.8	17.2
New Jersey:					
Newark	3.21	3.50	9.0		
Elizabeth	3.15	3.50	11.1		
Pennsylvania:					
Reading		2.75		34.6	59.8
Harrisburg		2.75		27.4	33.8
Maryland:					
Baltimore	2.50	3.25	29.9	17.2	27.4
Georgia:					
Atlanta		3.00			
Savannah	1.92			25.6	51.5
Ohio:					
Cleveland	2.80	3.00	7.3	46.1	47.6
Cincinnati	1.81			9.8	33.5
Dayton		2.08			
Indiana:					
Indianapolis	2.27	2.75	20.9	60.4	54.0
Illinois:					
Chicago	2.91	3.44	18.3		
Michigan:					
Detroit		2.75		38.8	48.6
Minnesota:					
Minneapolis	2.00	2.25	12.4	23.1	26.1
St. Paul				22.5	20.4
Missouri:					
St. Louis	2.51	3.00	19.6	27.3	47.5
Nebraska:					
Omaha	1.89	2.75	45.7	—27.0	28.0
Tennessee:					
Memphis		2.75		58.6	50.3
Texas:					
San Antonio			12.5		
Colorado:					
Denver				25.4	30.5
Washington:					
Seattle	2.35	2.50	6.5	88.3	95.9
Oregon:					
Portland		2.50		94.9	126.6
California:					
Oakland	1.75	2.22	26.7		

Table 8 shows that the ratios of "number of names" to population ranged from 1.75 to 3.21; and those used by the publishers from 2.08 to 3.50. Of the 14 estimates, but 4 are in error by less than 10 per cent; in 6 the error is from 10 to 20 per cent, and in 4 it is over 20 per cent. All of the estimates are too large. Only one instance has been found, either in 1900 or 1890, where a directory estimate was not in excess of the population as returned by the census.

If an estimate of population were based upon the "number of names" in 1900, as compared with that in 1890, the per cent of increase of population would probably be assumed to equal that of "number of names." Columns 4 and 5 present the figures for 31 of the 78 cities and show that the "number of names" has increased more rapidly than population. In but 7 of the 31 instances is the per cent of increase in population greater than that in "number of names." This more rapid increase in the "number of names" witnesses probably to the greater care and thoroughness with which the work of directory publishing is done, to a tendency of the publishers to include a larger proportion of the doubtful classes, like unmarried women, or children just entering adult life, and also to a growing tendency among persons doing business in large cities to reside in the suburbs. For these reasons the directory is likely to give an exaggerated idea of the true resident population. On the whole, therefore, the evidence warrants the conclusion that this method of estimating population, like the other three, is not entitled to public acceptance or to any weight as a basis upon which to dispute the accuracy of a careful enumeration.

In the two tables which follow, all the data used in the present bulletin and not contained in the published results of the Twelfth Census are presented. They afford a means of checking the results which have been set forth. Perfect accuracy can not be claimed for these tables, but the figures are the best that the Census Office has been able to secure.

TABLE 9.—NUMBER OF "CITIZENS" AND VOTE CAST IN 1900, NUMBER OF NAMES IN DIRECTORY IN 1890 AND 1900, AND DIRECTORY ESTIMATE OF POPULATION IN 1900.

CITY.	Number of males of voting age who possess the "citizenship" qualifications.	Vote cast.	NUMBER OF NAMES IN DIRECTORY.		Directory estimate of population in 1900.
			1900	1890	
Maine:					
Portland	13,781	7,961			
New Hampshire:					
Manchester	12,489	9,766	24,965	19,840	
Massachusetts:					
Boston	148,312	83,675	246,725	192,888	
Worcester	28,006	18,228	48,457	34,029	
Fall River	19,364	11,317	36,603	23,803	
Lowell	20,254	13,295	37,936	31,772	
Cambridge	21,780	11,355			
Lynn	18,560	11,011	30,033	23,834	
Lawrence	13,441	9,273	25,634	16,753	
New Bedford	12,454	7,003			
Springfield	15,932	10,110	32,286		
Somerville	15,198	7,827			
Rhode Island:					
Providence	44,471	21,970	78,768	58,505	
Connecticut:					
New Haven	28,222	22,883	56,572	39,551	
Hartford	22,218	15,154	38,657	24,452	82,146
Bridgeport	18,442	13,881	[1] 31,538	21,773	
New York:					
New York	809,653	607,582			
Buffalo	89,018	68,207	127,000	85,140	400,000
Rochester	42,870	35,364	71,292	55,465	
Syracuse	30,618	25,275	53,445	44,000	
Albany	27,623	24,615	42,492	36,241	
Troy	16,488				
Utica	15,401	12,920			
New Jersey:					
Newark	61,921	49,510	76,666		268,331
Jersey City	52,402	40,912			
Paterson	25,318	21,070			
Camden	21,052	17,672			
Trenton	20,134	16,763			
Hoboken	14,064	10,025			
Elizabeth	13,191	10,644	16,551		57,928
Pennsylvania:					
Philadelphia	346,461	284,889			
Pittsburg	82,906				
Allegheny	35,288				
Scranton	24,997				
Reading	21,642		[1] 35,514	22,228	
Erie	14,447				
Wilkesbarre	12,294				
Harrisburg	14,523		[1] 23,003	17,197	
Delaware:					
Wilmington	21,927	16,730			
Maryland:					
Baltimore	136,152	113,008	203,368	159,658	660,946
District of Columbia:					
Washington	81,460				
Virginia:					
Richmond	23,211	9,927			
South Carolina:					
Charleston	13,913				
Georgia:					
Atlanta	22,843	5,104	[1] 46,480		
Savannah	15,597	3,352	28,213	18,626	
Ohio:					
Cleveland	98,678	77,146	136,539	92,496	409,617
Cincinnati	90,803	77,223	180,000	134,820	
Toledo	36,709	28,400			
Columbus	39,479	32,269			
Dayton	25,299	22,585	[1] 46,602		
Indiana:					
Indianapolis	52,080		74,370	48,282	204,518
Evansville	16,696				
Illinois:					
Chicago	464,753	(2)	584,000		2,010,000
Peoria	17,700				
Michigan:					
Detroit	69,603	55,377	[1] 136,000	91,500	
Grand Rapids	22,729	21,754			
Wisconsin:					
Milwaukee	71,685	58,209			
Minnesota:					
Minneapolis	56,163	38,700	101,250	80,271	227,812
St. Paul	47,494	25,469	[1] 94,226	78,271	
Duluth	15,300	8,613			
Iowa:					
Des Moines	18,498	14,284			
Missouri:					
St. Louis	165,037	124,937	229,265	155,400	687,795
Kansas City	52,890	37,814			
St. Joseph	34,015	13,353			
Nebraska:					
Omaha	33,823	20,753	54,392	42,493	149,456
Kansas:					
Kansas City	15,286	10,821			
Kentucky:					
Louisville	58,554	41,343			
Tennessee:					
Memphis	30,898		[1] 48,261	32,100	
Nashville	22,023				
Louisiana:					
New Orleans	71,962	22,716			
Texas:					
San Antonio	13,863				60,000
Colorado:					
Denver	41,234		[1] 71,196	54,548	
Utah:					
Salt Lake City	12,558	19,614			
Washington:					
Seattle	36,013	12,804	34,354	17,534	85,885
Oregon:					
Portland	29,620	12,712	[1] 41,210	18,184	
California:					
San Francisco	107,417	63,207			
Los Angeles	29,619				
Oakland	18,304		38,164		84,808

[1] Directory canvass covered suburbs.

[2] Vote in Cook county, 401,134; "citizens," 502,002.

TABLE 10.—VOTE CAST IN CENSUS YEARS BY STATES AND TERRITORIES.[1]

STATE OR TERRITORY.	1900	1890	1880
The United States	14,201,528	11,953,554	9,437,591
North Atlantic division	4,052,069	3,495,237	2,974,389
Maine	117,879	122,320	147,802
New Hampshire	92,348	90,036	86,573
Vermont	67,099	59,612	70,684
Massachusetts	414,697	367,766	282,512
Rhode Island	56,548	46,985	29,235
Connecticut	181,040	159,286	132,863
New York	1,548,042	1,328,269	1,103,945
New Jersey	401,206	320,674	245,928
Pennsylvania	1,173,210	1,000,289	874,847
South Atlantic division	1,322,936	1,302,144	1,181,161
Delaware	42,112	35,309	29,528
Maryland	264,484	212,111	178,039
Virginia	269,113	298,172	212,606
West Virginia	220,815	165,253	112,713
North Carolina	313,313	283,022	241,208
South Carolina	50,842	75,028	178,096
Georgia	122,715	182,160	182,858
Florida	39,592	51,089	51,618
North Central division	6,108,588	4,910,619	3,624,675
Ohio	1,040,073	845,262	724,941
Indiana	664,094	545,281	470,672
Illinois	1,131,894	810,735	621,716
Michigan	548,214	471,036	352,636
Wisconsin	442,613	363,097	267,182
North Central division—Continued.			
Minnesota	317,936	264,712	150,484
Iowa	530,355	423,653	322,709
Missouri	684,294	531,468	397,221
North Dakota	57,795	36,195	28,426
South Dakota	96,124	77,530	
Nebraska	241,430	214,090	87,452
Kansas	353,766	327,560	201,236
South Central division	1,696,788	1,620,193	1,288,022
Kentucky	467,599	342,492	267,131
Tennessee	274,305	284,392	243,286
Alabama	162,302	203,932	177,254
Mississippi	59,103	84,408	116,401
Louisiana	76,870	115,089	104,137
Arkansas	132,979	191,448	115,609
Oklahoma	73,367	8,453	----------
Texas	450,263	389,979	264,204
Western division	1,021,147	625,361	369,344
Montana	63,796	31,090	14,160
Idaho	57,914	18,204	6,617
Wyoming	24,646	16,082	7,667
Colorado	221,382	92,830	53,532
New Mexico	39,474	32,348	20,397
Arizona	16,620	11,078	7,701
Utah	92,980	23,293	19,925
Nevada	10,196	12,392	18,393
Washington	107,524	54,803	15,823
Oregon	84,216	73,550	40,816
California	302,399	259,741	164,313

[1] The figures for 1900 and 1880 represent the largest total of votes cast for the candidates for any office (usually presidential electors) in the year named; those for 1890 represent the average vote on presidential electors in 1888 and 1892, except in states where the vote in 1890 was larger, and in the territories.

Twelfth Census of the United States.

CENSUS BULLETIN.

No. 136. WASHINGTON, D. C. February 11, 1902.

MANUFACTURES.

CALIFORNIA.

Hon. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I transmit herewith, for publication in bulletin form, the statistics of manufacturing and mechanical industries for the state of California for the census year 1900, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that "The schedules of inquiries relating to the products of manufacturing and mechanical establishments shall embrace the name and location of each establishment; character of organization, whether individual, cooperative, or other form; date of commencement of operations; character of business or kind of goods manufactured; amount of capital invested; number of proprietors, firm members, copartners, or officers, and the amount of their salaries; number of employees, and the amount of their wages; quantity and cost of materials used in manufactures; amount of miscellaneous expenses; quantity and value of products; time in operation during the census year; character and quantity of power used; and character and number of machines employed."

In each of the above particulars the requirements of the law have been observed, but certain of the data thus elicited are reserved for publication in the final volumes.

There were 16 cities and towns in the state withdrawn from the enumerators and their manufacturing statistics collected by special agents, in accordance with the further provision of section 7 of the census act. Wherever the phrase "urban manufactures" is used in this bulletin, it applies only to those cities and towns which were withdrawn from the enumerators and committed to special agents, and only to manufacturing establishments within the corporate limits of such places.

Five cities in California contain a population exceeding 20,000 each: Los Angeles, Oakland, Sacramento, San Francisco, and San Jose. The manufacturing statistics of these 5 cities are presented by specified industries, and the statistics of Los Angeles, Oakland, Sacramento, and San Francisco are presented in comparison with the returns of the Eleventh Census. The statistics of San Jose were not shown separately in 1890, and comparisons with that year are, therefore, not possible in this case.

Prof. Carl C. Plehn, of the University of California, rendered valuable assistance in the preparation of the text for the accompanying report.

The statistics of California are presented in 9 tables: Table 1 showing the comparative figures for the state at the several censuses; Table 2 showing all the industries of the state divided between hand trades and the manufactures proper, and also the statistics of governmental establishments, educational, eleemosynary, and penal institutions, and establishments with a product of less than $500, which three latter classes were not reported at previous censuses; Table 3 showing the statistics of the 14 leading industries of the state for 1890 and 1900; Table 4 showing the totals for the cities of Los Angeles, Oakland, Sacramento, and San Francisco at the censuses of 1890 and 1900; Table 5 showing the urban manufactures of the state in comparison with the totals for the entire state and the state exclusive of the cities and towns withdrawn from the enumerators; Table 6 showing the statistics for the state by counties; Table 7 showing the statistics for the state by specified industries; Table 8 showing the statistics for the cities of Los Angeles, Oakland, Sacramento, San Francisco, and San Jose by specified industries; and Table 9 showing the totals for all industries in each of the cities and towns withdrawn from the enumerators (exclusive of those shown in Table 8).

Table 1 shows the growth of manufactures in California for the half century which terminates with the Twelfth Census. The manufacturing statistics of the censuses prior to 1850 were too imperfect and fragmentary in character to make it proper to reproduce them in such a table as a measure of industrial growth in the first half of the century. Owing to changes in the method of taking the census, comparisons between the earlier and later decades, represented in Table 1, should be drawn only in the most general way.

Nevertheless, the rate of growth in California manufactures may be fairly inferred from the figures given.

In drafting the schedules of inquiry for the census of 1900 care was taken to preserve the basis of comparison with prior censuses. Comparison may be made safely with respect to all the items of inquiry except those relating to capital, salaried officials, clerks, etc., and their salaries, the average number of employees, and the total amount of wages paid. Live capital, that is, cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries, was first called for at the census of 1890. No definite attempt was made, prior to the census of 1890, to secure a return of live capital invested.

Changes were made in the inquiries relating to employees and wages in order to eliminate defects found to exist on the form of inquiry adopted in 1890. At the census of 1890 the average number of persons employed during the entire year was called for, and also the average number employed at stated weekly rates of pay, and the average number was computed for the actual time the establishments were reported as being in operation. At the census of 1900 the greatest and least numbers of employees were reported, and also the average number employed during each month of the year. The average number of wage-earners (men, women, and children) employed during the entire year was ascertained by using 12, the number of calendar months, as a divisor into the total of the average numbers reported for each month. This difference in the method of ascertaining the average number of wage-earners during the entire year may have resulted in a variation in the number, and should be considered in making comparisons.

At the census of 1890 the number and salaries of proprietors and firm members actively engaged in the business or in supervision were reported, combined with clerks and other officials. In cases where proprietors and firm members were reported without salaries, the amount that would ordinarily be paid for similar services was estimated. At the census of 1900 only the number of proprietors and firm members actively engaged in the industry or in supervision was ascertained, and no salaries were reported for this class. It is therefore impossible to compare the number and salaries of salaried officials of any character for the two censuses.

Furthermore, the schedules for 1890 included in the wage-earning class, overseers, foremen, and superintendents (not general superintendents or managers), while the census of 1900 separates from the wage-earning class such salaried employees as general superintendents, clerks, and salesmen. It is possible and probable that this change in the form of the question has resulted in eliminating from the wage-earners, as reported by the present census, many high-salaried employees included in that group for the census of 1890.

In some instances, the number of proprietors and firm members, shown in the accompanying tables, falls short of the number of establishments reported. This is accounted for by the fact that no proprietors or firm members are reported for corporations or cooperative establishments.

The reports show a capital of $205,395,025 invested in manufactures and mechanical industries in the 12,582 establishments reporting for the state of California. This sum represents the value of land, buildings, machinery, tools, and implements, and the live capital utilized, but does not include the capital stock of any of the manufacturing corporations of the state. The value of the products is returned at $302,874,761, to produce which involved an outlay of $8,360,829 for salaries of officials, clerks, etc.; $47,425,947 for wages; $16,190,282 for miscellaneous expenses, including rent, taxes, etc.; and $188,125,602 for materials used, mill supplies, freight, and fuel. It is not to be assumed, however, that the difference between the aggregate of these sums and the value of the products is, in any sense, indicative of the profits in the manufacture of the products during the census year. The census schedule takes no cognizance of the cost of selling manufactured articles, or of interest on capital invested, or of the mercantile losses incurred in the business, or of depreciation in plant. The value of the product given is the value as obtained or fixed at the shop or factory. This statement is necessary in order to avoid erroneous conclusions from the figures presented.

The value of products for the state of California, $302,874,761, is the gross value, and not the net or true value. The difference between these two should be carefully noted. The gross value is found by adding the value of products in the separate establishments. But the finished product of one establishment is often the raw material for another. In such cases the value of the former reappears in the latter, and thus the original cost of certain materials may be included several times in the gross value. The net or true value is found by subtracting from the gross value the value of all materials purchased in a partly manufactured form. In this way the duplications in the gross value are eliminated.

At the census of 1890 the schedule was so framed that it was impossible to find the net or true value. In the present census the schedule asked for the value of the materials in two classes, those purchased in the crude state and those purchased in the partly manufactured form. From the answers to these questions the net or true value of products may be computed. Thus, for California, the gross value of products for 1900 was $302,874,761. The value of materials purchased in a partly manufactured form was $127,449,376. The difference, $175,425,385, is the net or true value of products, and represents the increase in the value of raw materials resulting from the various processes of manufacture.

Very respectfully,

S. N. D. North

Chief Statistician for Manufactures.

CALIFORNIA.

Table 1 shows the manufacturing and mechanical industries of the state of California as returned at the censuses of 1850 to 1900, inclusive, with the percentages of increase for each decade. This table also presents the average number of wage-earners employed by manufacturing establishments, in comparison with the total population of the state, and the value of the land and buildings owned and reported by manufacturers as capital, in comparison with the assessed value of all real estate and improvements.

TABLE 1.—COMPARATIVE SUMMARY, 1850 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.						PER CENT OF INCREASE.				
	1900	1890	1880	1870	1860	1850	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870	1850 to 1860
Number of establishments	12,582	7,923	5,885	3,984	8,468	1,003	58.8	34.6	47.7	[1] 53.0	744.3
Capital	$205,895,025	$146,797,102	$61,243,784	$39,728,202	$22,043,096	$1,006,197	39.9	139.7	54.2	80.2	2,096.7
Salaried officials, clerks, etc., number	7,884	[2] 10,946	(3)	(3)	(3)	(3)	[1] 28.0	------	------	------	------
Salaries	$8,360,829	[2] $10,365,862	(3)	(3)	(3)	(3)	[1] 19.3	------	------	------	------
Wage-earners, average number	91,047	72,696	43,693	25,392	49,226	3,964	25.2	66.4	72.1	[1] 48.4	1,141.8
Total wages	$47,425,947	$41,172,918	$21,065,905	$13,136,722	$28,402,287	$3,717,130	15.2	95.4	60.4	[1] 53.7	664.1
Men, 16 years and over	71,648	59,065	38,311	24,040	49,171	(3)	21.3	54.2	59.4	[1] 51.1	------
Wages	$42,229,366	$37,588,772	(3)	(3)	(3)	(3)	12.3	------	------	------	------
Women, 16 years and over	17,285	11,774	3,922	873	55	------	46.8	200.2	349.3	1,487.3	------
Wages	$4,814,498	$3,289,042	(3)	(3)	(3)	------	46.4	------	------	------	------
Children, under 16 years	2,114	1,857	1,460	479	(3)	(3)	13.8	27.2	204.8	------	------
Wages	$382,083	$295,104	(3)	(3)	(3)	(3)	29.5	------	------	------	------
Miscellaneous expenses	$16,190,282	$12,984,191	(4)	(4)	(4)	(4)	24.7	------	------	------	------
Cost of materials used	$188,125,602	$120,243,683	$72,607,709	$35,351,193	$27,051,674	$1,201,151	56.5	65.6	105.4	30.7	2,152.1
Value of products, including custom work and repairing	$302,874,761	$213,403,996	$116,218,973	$66,594,556	$68,253,228	$12,862,522	41.9	83.6	74.5	2.4	430.6
Total population	[5] 1,482,179	1,208,130	864,694	560,247	379,994	92,597	22.7	39.7	54.3	47.4	310.4
Wage-earners engaged in manufactures	91,047	72,696	43,693	25,392	49,226	3,964	25.2	66.4	72.1	[1] 48.4	1,141.8
Per cent of total population	6.1	6.0	5.1	4.5	13.0	4.3	------	------	------	------	------
Assessed value of real estate	[6] $942,353,309	$391,449,172	$466,278,585	$176,527,160	$36,906,631	$16,347,442	5.7	91.2	164.1	163.8	309.3
Value of land and buildings invested in manufactures [7]	$57,297,801	$37,250,621	(3)	(3)	(3)	(3)	53.8	------	------	------	------
Per cent of assessed value	6.1	4.2	------	------	------	------	------	------	------	------	------

[1] Decrease.
[2] Includes proprietors and firm members, with their salaries; number only reported in 1900. (See Table 7.)
[3] Not reported separately.
[4] Not reported.
[5] Exclusive of 2,874 Indians and other persons on Indian reservations, which classes were not included at previous censuses.
[6] As given in the Biennial Report of the Controller of the State of California, for the year 1900, page 148.
[7] Does not include value of rented property.

Although California is an agricultural and a mining state, Table 1 shows that there has been a steady growth in its manufacturing and mechanical industries during the half century. The population during these years increased from 92,597 to 1,482,179, or 1,500.7 per cent, while the average number of wage-earners employed in manufacturing establishments increased from 3,964 to 91,047, or 2,196.8 per cent, embracing, in 1900, 6.1 per cent of the entire population, compared with 4.3 per cent in 1850. Probably the best indication of the importance of the wage-earning class is afforded by the greatest number employed at any one time during the year. In 1900 this was 140,330, or 9.5 per cent of the total population of the state. The greatest percentage of increase in the value of the products, 430.6 per cent, is shown for the decade ending with 1860, while the greatest absolute increase occurred during the ten years from 1880 to 1890. The decrease in number of establishments, number of wage-earners, total wages paid, and value of products for the decade ending in 1870, is explained by the inclusion in 1860 of gold mining as a manufacturing industry, and its omission in 1870.

Four important conditions have limited the growth of manufactures in California, and have determined, in a large measure, the particular lines established. These are the geographical position of the state, the high rate of wages, the high price of fuel, and the exceptional attractions offered by mining and agriculture. California is removed from the great centers of the United States and from the important markets of the world by vast stretches of land and water. Railroad connection with the East was not made until 1869, and the cost of transportation is still practically prohibitive for certain commodities. The excellent harbor, San Francisco Bay, is connected by both rail and water with the large, fertile valleys of the interior. The isolation of the state has proved both an advantage and a disadvantage to the development of its manufactures. It has afforded a natural protection from outside competition, and has insured a steady, although somewhat restricted, home demand for certain products of the local factories; but it has, at the same time, added to the cost of such raw materials as must be brought from outside the state, and especially to the cost of iron and fuel.

Coal is found in the state, but it is poor in quality. A large part of the coal consumed is imported. At San Francisco, in June, 1900, first-class steam coal cost from $7.25 to $8.25 per long ton, delivered, according to the

location of the factory and the quantity required. It has recently been discovered that California possesses abundant stores of petroleum, and many wells have been sunk, especially in the southern part of the state. The importance of this discovery to the manufacturers of California can scarcely be exaggerated, since it practically solves the problem of fuel. Its influence is only slightly shown by the returns of the Twelfth Census, for the exploitation of the oil fields was but just beginning during the census year. A part of the increase in the manufactures of Los Angeles, shown in Table 4, may be attributed to this cause.

Table 2 divides the industries of the state between the hand trades and the manufactures proper. This table also gives the statistics for governmental establishments, educational, eleemosynary, and penal institutions, and establishments with a product of less than $500; these were not reported at previous censuses, and therefore are omitted from the other tables and their use confined to Table 2.

TABLE 2.—SUMMARY FOR ALL ESTABLISHMENTS.

CLASSES.	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	COST OF MATERIALS USED. Total.	COST OF MATERIALS USED. Purchased in raw state.	COST OF MATERIALS USED. Purchased in partially manufactured form.	COST OF MATERIALS USED. Fuel, freight, etc.	Value of products, including custom work and repairing.
Total	14,166	$212,640,144	15,884	93,356	$48,709,123	$16,288,274	$189,062,091	$52,073,991	$128,220,280	$8,767,820	$305,519,043
Hand trades[1]	6,067	9,501,764	6,836	13,406	7,449,220	2,700,767	12,795,824	34,281	12,415,826	345,717	31,476,428
Governmental establishments	2	5,349,040	--------	1,177	1,111,726	----------	537,611	----------	497,305	40,306	1,742,479
Educational, eleemosynary, and penal institutions	8	1,369,035	1	870	149,940	18,004	263,180	85,957	147,232	29,941	462,489
Establishments with a product of less than $500	1,574	527,044	1,659	262	21,510	84,988	185,748	9,381	126,367	----------	439,314
All other establishments	6,515	195,893,261	7,388	77,641	39,976,727	13,489,515	175,329,778	51,944,372	115,033,550	8,351,856	271,398,333

[1] Includes bicycle and tricycle repairing, 234; blacksmithing and wheelwrighting, 1,349; boots and shoes, custom work and repairing, 797; carpentering, 511; clothing, men's, custom work and repairing, 688; clothing, women's, dressmaking, 365; dyeing and cleaning, 71; furniture, cabinetmaking, repairing, and upholstering, 217; lock and gun smithing, 116; masonry, brick and stone, 51; millinery, custom work, 306; painting, house, sign, etc., 439; paper hanging, 27; plastering and stuccowork, 40; plumbing, and gas and steam fitting, 414; sewing machine repairing, 6; taxidermy, 6; typewriter repairing, 6; watch, clock, and jewelry repairing, 424.

Of the 14,166 establishments of all classes shown in this table, 7,641, or 53.9 per cent, were small shops included in the groups of "hand trades" and "establishments with a product of less than $500." The value of the products of these establishments, consisting principally of the sums received for custom work and repairing, amounted to $31,915,742, or only 10.4 per cent of the total products of the state.

In addition to the 14,166 active establishments in the state during the census year, with a capital of $212,640,144, shown in Table 2, there were 76 idle establishments, with a capital of $2,226,897, divided as follows:

INDUSTRIES.	Number of idle establishments.	Capital.	INDUSTRIES.	Number of idle establishments.	Capital.
Brick and tile	5	$93,105	Lumber and timber products	20	$336,530
Confectionery	1	24,000	Lumber, planing mill products, including sash, doors, and blinds	3	29,000
Copper, smelting and refining	1	84,020	Paper and wood pulp	2	452,000
Flouring and grist mill products	2	24,360	Paving and paving materials	1	30,000
Foundry and machine shop products	2	12,250	Pottery, terra cotta, and fire-clay products	2	16,000
Fruits and vegetables, canning and preserving	4	35,625	Salt	2	45,000
Iron and steel	1	15,000	Sugar and molasses, beet	1	816,800
Lime and cement	1	103,000	All other industries	18	32,931
Liquors, distilled	1	13,500			
Liquors, vinous	9	63,776			

TABLE 3.—COMPARATIVE SUMMARY OF FOURTEEN LEADING INDUSTRIES.

INDUSTRIES.	Year.	Number of establishments.	Capital.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
Total for selected industries for state	1900	2,184	$92,043,252	37,068	$19,453,694	$7,004,897	$87,032,562	$131,246,019
	1890	1,540	64,553,671	27,536	14,660,682	5,588,468	67,885,818	102,373,233
Increase, 1890 to 1900	--------	644	27,489,581	9,532	4,793,012	1,416,429	19,146,744	28,872,786
Per cent of increase	--------	41.8	42.6	34.6	32.7	25.3	28.2	28.2
Per cent of total of all industries in state	1900	17.4	44.8	40.7	41.0	43.3	46.3	43.3
	1890	19.4	44.0	37.9	35.6	43.0	56.5	48.0
Cars and general shop construction and repairs by steam railroad companies.	1900	29	4,429,951	4,920	3,507,028	76,590	3,825,340	7,553,626
	1890	10	3,139,514	2,858	2,151,594	(1)	2,777,306	4,923,071
Cheese, butter, and condensed milk, factory product	1900	178	1,157,090	402	203,359	62,161	2,980,962	3,582,942
	1890	19	125,650	49	23,360	7,191	131,283	172,579
Clothing, men's, factory product	1900	96	1,060,934	2,410	758,264	241,655	2,309,326	3,869,891
	1890	121	724,697	1,277	511,459	57,144	1,407,404	2,568,921

[1] Not reported.

TABLE 3.—COMPARATIVE SUMMARY OF FOURTEEN LEADING INDUSTRIES—Continued.

INDUSTRIES.	Year.	Number of establishments.	Capital.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
Explosives	1900	7	$3,283,928	906	$602,765	$255,278	$2,669,634	$4,283,818
	1890	4	2,194,068	285	204,470	147,272	978,100	2,523,770
Flouring and grist mill products	1900	124	6,552,642	857	525,401	246,409	11,077,482	13,100,944
	1890	101	6,126,305	855	559,300	434,921	12,047,810	14,200,320
Foundry and machine shop products	1900	250	7,873,410	4,782	3,092,592	900,021	5,434,863	12,047,149
	1890	154	5,841,098	3,192	2,555,867	379,824	3,315,069	7,767,780
Fruits and vegetables, canning and preserving	1900	136	4,397,935	7,486	1,987,649	412,737	9,102,400	13,081,829
	1890	61	2,622,890	5,670	756,797	351,334	3,888,328	6,211,440
Leather, tanned, curried, and finished	1900	45	4,820,205	1,454	870,973	180,795	5,809,428	7,405,981
	1890	62	3,119,298	1,099	706,419	183,428	4,165,410	5,729,278
Liquors: Total	1900	294	12,918,511	1,496	984,205	2,397,896	3,994,707	9,261,600
	1890	201	9,360,507	1,477	795,175	1,208,851	2,073,617	5,596,800
Liquors, distilled	1900	8	76,600	20	5,932	5,675	191,364	238,267
	1890	8	106,053	42	12,464	122,834	53,498	229,701
Liquors, malt	1900	99	8,183,286	950	753,424	2,126,734	1,276,575	5,085,462
	1890	65	5,525,041	700	592,153	943,505	1,179,897	3,628,236
Liquors, vinous	1900	187	4,658,625	526	224,849	265,487	2,526,768	3,937,871
	1890	128	3,729,413	735	190,558	142,512	840,222	1,738,863
Lumber and timber products	1900	313	28,236,332	5,806	2,849,457	573,047	7,528,215	13,764,647
	1890	258	16,184,235	4,689	1,927,551	588,032	4,421,267	8,794,655
Lumber, planing mill products, including sash, doors, and blinds	1900	136	3,431,949	2,022	1,211,188	175,114	2,436,391	4,807,690
	1890	120	3,039,308	2,127	1,509,673	228,869	2,355,575	4,941,466
Printing and publishing, newspapers and periodicals	1900	512	4,440,602	2,683	1,804,619	637,302	1,420,248	6,858,192
	1890	376	4,345,600	2,799	2,133,967	1,118,276	1,426,629	6,500,445
Slaughtering: Total	1900	58	3,913,081	925	544,659	441,210	13,555,445	15,717,712
	1890	50	2,220,536	436	333,697	290,208	8,075,060	9,768,858
Slaughtering and meat packing, wholesale	1900	23	2,875,988	660	344,189	371,684	6,798,826	8,232,680
	1890	18	840,830	163	121,488	59,479	1,927,245	2,420,673
Slaughtering, wholesale, not including meat packing	1900	35	1,037,093	265	200,470	69,526	6,756,619	7,485,032
	1890	32	1,379,706	273	212,214	230,729	6,147,815	7,348,185
Sugar and molasses, refining	1900	6	5,526,682	919	511,535	404,682	14,388,126	15,909,998
	1890	3	5,509,965	723	491,353	598,118	20,822,965	22,673,850

The 14 leading industries of the state in 1900, as shown in Table 3, embraced 2,184 establishments, or 17.4 per cent of the total number in the state; used a capital of $92,043,252, or 44.8 per cent of the total; gave employment to 37,068 wage-earners, or 40.7 per cent of the total number; and paid $19,453,694, or 41 per cent of the total wages. The value of their products was $131,246,019, or 43.3 per cent of the total. In the discussion of Table 3, which follows, these industries are ranked with reference to the value of their products.

The value of the varied products of the soil of the state greatly exceeds the value of the products of its mines. It is not surprising, therefore, that 5 of the 14 leading manufactures are more or less dependent upon agriculture or horticulture. These are the factory manufacture of cheese, butter, and condensed milk, flour and grist milling, the canning and preserving of fruits and vegetables, the manufacture of malt and vinous liquors, and the slaughtering industry.

Table 3 shows that the refining of sugar and molasses is the most important industry in the state. The 6 establishments reported in 1900 gave employment to 919 wage-earners, or 1 per cent of the wage-earners employed in the state, and their products were valued at $15,909,998, or 5.3 per cent of the total value of the products of the state. In 1890 there were 3 establishments, 723 wage-earners, and products valued at $22,673,850. There was a decrease in the value of products, during the decade, of $6,763,852, or 29.8 per cent, but the number of wage-earners shows an increase. The prominence of the industry is due to the fact that San Francisco is the nearest port of entry for the raw sugar of the Hawaiian Islands. Much of the land of California is suitable for the culture of sugar beets, and the state ranked second in the United States in the manufacture of beet sugar in 1900. In that year 7 establishments were reported, with 909 wage-earners, and products valued at $3,499,996. The statistics of this industry are shown in Table 7.

There were 58 establishments engaged in slaughtering and meat packing in 1900, the industry second in rank, with 925 wage-earners, and products valued at $15,717,712. In 1890 there were 50 establishments, 436 wage-earners, and products valued at $9,768,858. The increase in the value of products during the decade was $5,948,854, or 60.9 per cent. Meat packers have only recently succeeded in overcoming climatic difficulties which necessitated an excessive use of salt. Considerable quantities of canned and pickled or salted beef, tallow, bacon, hams, and lard are exported.

There were 313 establishments engaged in the manufacture of lumber and timber products in 1900, the industry third in rank, with 5,806 wage-earners, and products

valued at $13,764,647. In 1890 there were 258 establishments, 4,689 wage-earners, and products valued at $8,794,655. The increase in the value of products during the decade was $4,969,992, or 56.5 per cent. The lumber industry in the state of California is confined mainly to that section of the state lying north of Fresno county and west of the Sierra Nevada Mountains, and centering in the counties of Humboldt and Mendocino in the redwood district, the point of greatest production being at Eureka, on Humboldt Bay. The product, for 1900, of the 66 mills of these two counties, the materials for which were drawn from the famous redwood forests of this section, was valued at $4,665,536. The characteristic products of these mills are redwood lumber and shingles. Allied to this industry is the manufacture of planing mill products, in which 136 establishments were reported in 1900, with 2,022 wage-earners, and products valued at $4,807,690. In 1890 there were 120 establishments, 2,127 wage-earners, and products valued at $4,941,466. The decrease in the value of products during the decade was $133,776, or 2.7 per cent.

There were 124 establishments engaged in the manufacture of flouring and grist mill products in 1900, with 857 wage-earners, and products valued at $13,100,944. In 1890 there were 101 establishments, 855 wage-earners, and products valued at $14,200,320. The decrease in the value of products during the decade was $1,099,376, or 7.7 per cent. In 1854 there was a large number of flour mills scattered about the state, with a total daily capacity estimated at 3,215 barrels.[1] California became a large producer of cereals in 1860. Since that year the mills have supplied practically all the flour for local consumption, and have furnished large quantities for export to China and other countries. The exports of flour reached the highest point in value in 1883, and in quantity in 1885, but as a result of the opening of grain fields in other parts of the world, and of the introduction of improved means of transportation, by which California has not benefited as extensively as have other grain-raising communities, they have since fallen nearly one-half in value and one-third in quantity.[2] Nevertheless, the decline during the decade in flouring and grist mill products, shown in Table 3, represents a decline in value and not in quantity, for the quantity has increased 20.2 per cent.

There were 136 establishments engaged in the canning and preserving of fruits and vegetables in 1900, with 7,486 wage-earners, and products valued at $13,081,829. In 1890 there were 61 establishments, 5,670 wage-earners, and products valued at $6,211,440. The increase in the value of products during the decade was $6,870,389, or 110.6 per cent. This industry was begun about 1875, in which year, it is estimated, 4,500,000 two-pound cans were packed,[3] since which time the advance has been rapid. Peaches, pears, plums, apricots, cherries, tomatoes, peas, and asparagus are the fruits and vegetables most extensively canned and preserved.

There were 250 establishments engaged in the manufacture of foundry and machine shop products in 1900, with 4,782 wage-earners, and products valued at $12,047,149. In 1890 there were 154 establishments, 3,192 wage-earners, and products valued at $7,767,780. The increase in the value of products during the decade was $4,279,369, or 55.1 per cent. The demand for mining tools and machinery is the foundation of this industry, which has grown to large proportions in spite of many difficulties. The first foundry in the state was established in 1849, the year after the discovery of gold,[4] and in 1860 San Francisco alone had 14 foundries and machine shops, with an output valued at $1,218,500. The cost of bringing bulky machinery and heavy tools from a distance has protected local manufacturers against outside competition; but this expense of transportation, applied to raw materials, has added greatly to the cost of manufacture. That these difficulties have been overcome is largely a triumph of mechanical skill. California foundry and machine shop products not only control the local markets in certain lines, but enter the markets of the world. These products consist principally of pumping and drilling machinery, stamp mills, hoisting apparatus, steam engines, and boilers.

The achievements of the battleship Oregon, built in this state, have directed attention to the iron and steel shipbuilding industry of California, but as there were but 2 establishments in this industry in 1900, it is not possible to give statistics without disclosing operations of individual establishments.

There were 294 establishments engaged in the manufacture of liquors in 1900, with 1,496 wage-earners, and products valued at $9,261,600. In 1890 there were 201 establishments, 1,477 wage-earners, and products valued at $5,596,800. The increase in the value of products during the decade was $3,664,800, or 65.5 per cent. In the manufacture of vinous liquors California leads all other states, as it led them in 1890, being the great grape-growing region of the United States. There were 187 establishments engaged in this branch of the industry in 1900, with 526 wage-earners, and products valued at $3,937,871. In 1890 there were 128 establishments, 735 wage-earners, and products valued at $1,738,863. The increase during the decade was $2,199,008, or 126.5 per cent. The brewers of malt liquors have the advantage of abundant supplies of grain and hops, and the market in the Orient for their products is growing.

There were 29 establishments engaged in car construction and general shop work of steam railroad companies in 1900, with 4,920 wage-earners, and products valued at $7,553,626. In 1890 there were 10 establishments, 2,858 wage-earners, and products valued at $4,923,071. The increase in the value of products during the decade was $2,630,555, or 53.4 per cent.

There were 45 establishments engaged in the tanning,

[1] The Journal of Political Economy, September, 1894, pages 524 and 530.

[2] Annual reports of the San Francisco Chamber of Commerce.

[3] The Commerce and Industries of the Pacific Coast, by J. S. Hittell, page 239.

[4] History of California, by H. H. Bancroft, Vol. VII, page 94.

currying, and finishing of leather in 1900, with 1,454 wage-earners, and products valued at $7,405,981. In 1890 there were 62 establishments, 1,099 wage-earners, and products valued at $5,729,278. The increase in the value of products during the decade was $1,676,703, or 29.3 per cent. Early in the Nineteenth century, when California was a Spanish colony, the principal exports were hides and tallow from the great herds of cattle which overran the hills and valleys of the coast ranges. There were small tanneries at some of the missions and at the Russian settlement at Fort Ross. It was not until 1861, however, that the leather industry became of importance. Since 1877[1] the demand for hides has outstripped the local supply, and additional supplies have been obtained from other states and from Central and South America. Most of the leather produced is sold within the United States, although leather and leather goods are exported in considerable quantities.

There were 512 establishments engaged in the printing and publishing of newspapers and periodicals in 1900, with 2,683 wage-earners, and products valued at $6,858,192. In 1890 there were 376 establishments, 2,799 wage-earners, and products valued at $6,500,445. The increase in the value of products during the decade was $357,747, or 5.5 per cent.

There were 7 establishments engaged in the manufacture of explosives in 1900, with 906 wage-earners, and products valued at $4,283,818. In 1890 there were 4 establishments, 285 wage-earners, and products valued at $2,523,770. The increase in the value of products during the decade was $1,760,048, or 69.7 per cent. The manufacture of gunpowder, especially for use in mining, began in 1863,[2] when the supplies which had previously been drawn from the East were cut off by the Government's demand for gunpowder for the war. It was not until after 1872[2] that the manufacture of high explosives began. Although the industry includes the manufacture of military and sporting ammunition, by far the larger part of the explosives produced in 1900 was for use in the mines.

URBAN MANUFACTURES.

Table 4 shows the totals for the manufacturing and mechanical industries of the cities of Los Angeles, Oakland, Sacramento, and San Francisco, as returned at the censuses of 1890 and 1900, with the percentages of increase.

[1] The Commerce and Industries of the Pacific Coast, page 489. History of California, Vol. VII, page 91.

[2] History of California, Vol. VII, page 99.

TABLE 4.—COMPARATIVE SUMMARY, LOS ANGELES, OAKLAND, SACRAMENTO, AND SAN FRANCISCO, 1890 AND 1900, WITH PER CENT OF INCREASE.

	Year.	Number of establishments.	Capital.	WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
				Average number.	Total wages.			
The State	1900	12,582	$205,395,025	91,047	$47,425,947	$16,190,282	$188,125,602	$302,874,761
	1890	7,923	146,797,102	72,696	41,172,918	12,984,191	120,248,683	213,403,996
Per cent of increase		58.8	39.9	25.2	15.2	24.7	56.5	41.9
Los Angeles	1900	1,415	11,742,838	8,044	3,992,738	1,513,393	10,572,660	21,297,537
	1890	750	6,811,488	3,872	2,347,094	680,897	5,014,034	9,893,835
Per cent of increase		88.7	72.4	107.7	70.1	122.3	110.9	115.3
Oakland	1900	752	6,364,651	4,012	2,129,598	620,459	4,277,647	9,174,257
	1890	342	6,629,468	3,918	2,568,934	438,010	4,687,699	9,112,778
Per cent of increase		119.9	[1] 4.0	2.4	[1] 17.1	41.7	[1] 8.7	0.7
Sacramento	1900	279	7,492,313	4,393	2,992,444	709,812	6,648,357	11,785,621
	1890	302	5,654,782	4,186	2,652,869	439,227	6,033,317	10,424,582
Per cent of increase		[1] 7.6	32.5	4.9	12.8	61.6	10.2	13.1
San Francisco	1900	4,002	80,103,367	41,978	22,037,527	8,826,167	79,492,952	133,069,416
	1890	4,059	74,884,301	41,764	24,591,116	8,322,483	78,656,470	135,625,754
Per cent of increase		[1] 1.4	7.0	0.5	[1] 10.4	6.1	1.1	[1] 1.9
Total for 4 cities	1900	6,448	105,703,169	58,427	31,152,302	11,669,831	100,991,616	175,326,831
	1890	5,453	93,980,039	53,740	32,160,013	9,880,617	94,391,520	165,056,949
Per cent of increase		18.2	12.5	8.7	[1] 3.1	18.1	7.0	6.2
Per cent of 4 cities to total for state	1900	51.2	51.5	64.2	65.7	72.1	53.7	57.9
	1890	68.8	64.0	73.9	78.1	76.1	78.5	77.3

[1] Decrease.

It appears from Table 4 that there has been an increase during the past decade in the combined manufactures of the 4 principal cities of the state. The number of establishments increased from 5,453 to 6,448, or 18.2 per cent; the average number of wage-earners from 53,740 to 58,427, or 8.7 per cent; and the value of products from $165,056,949 to $175,326,831, or 6.2 per cent. In each of these particulars, however, the increase is less than in the state as a whole. Los Angeles shows the most rapid growth, the value of products having increased from $9,893,835 in 1890 to $21,297,537 in 1900, or 115.3 per cent. In San Francisco, the leading manufacturing city of the state, the number of establishments decreased from 4,059 to 4,002, or 1.4 per cent, and the value of products from $135,625,754 to $133,069,416, or 1.9 per cent, while the average number of wage-earners increased from 41,764 to 41,978, or 0.5 per cent. The number of establishments, number of wage-earners, and value of products for this city constituted 31.8, 46.1, and 43.9 per cent, respectively, of the totals for the state.

Table 5 presents the totals for the manufacturing industries of the 16 cities and towns withdrawn from the enumerators, places them in comparison with the totals for the entire state and the state exclusive of these cities and towns, and shows their rank in population and in value of products.

TABLE 5.—URBAN MANUFACTURES.

	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	PRODUCTS.			POPULATION.		
				Average number.	Total wages.			Value.	Rank.	Per cent of total.	Total.	Rank.	Per cent of total.
Total for state	12,582	$205,395,025	14,224	91,047	$47,425,947	$16,190,282	$188,125,602	$302,874,761	-------	100.0	[1]1,482,179	-------	100.0
Total for urban manufactures	8,009	122,111,407	9,411	66,193	35,000,677	18,118,136	114,777,121	198,698,160	-------	65.6	647,834	-------	43.7
Fresno	159	1,648,138	192	1,009	513,064	136,761	1,903,800	3,238,217	7	1.1	12,470	8	0.8
Los Angeles	1,415	11,742,838	1,584	8,044	3,992,733	1,513,393	10,572,660	21,297,537	2	7.0	102,479	2	6.9
Napa	76	1,054,634	85	584	203,857	86,088	795,285	1,245,105	11	0.4	4,036	12	0.3
Oakland	752	6,364,651	830	4,012	2,129,598	620,459	4,277,647	9,174,257	4	3.0	66,960	3	4.5
Petaluma	86	712,003	92	366	155,332	59,014	516,814	971,670	12	0.3	3,871	13	0.3
Sacramento	279	7,492,313	322	4,393	2,992,444	709,812	6,648,357	11,785,621	3	3.9	29,282	4	2.0
San Diego	208	1,147,712	230	574	281,786	132,568	556,787	1,309,321	10	0.4	17,700	6	1.2
San Francisco	4,002	80,103,367	4,924	41,978	22,037,527	8,826,167	79,492,952	133,069,416	1	43.9	342,782	1	23.1
San Jose	344	3,409,517	386	1,702	818,968	344,027	2,360,145	4,410,062	6	1.5	21,500	5	1.5
Santa Clara	36	613,510	38	248	146,099	26,586	330,155	712,421	13	0.3	3,650	14	0.2
Santa Cruz	85	1,499,753	88	507	268,865	149,269	893,916	1,677,411	8	0.6	5,659	11	0.4
Santa Rosa	139	765,547	153	657	260,667	98,781	902,579	1,521,343	9	0.5	6,673	10	0.5
Stockton	293	4,827,258	338	1,666	954,094	335,426	4,730,316	6,907,839	5	2.3	17,506	7	1.2
Tulare	30	149,075	31	185	62,010	15,342	257,166	378,862	15	0.1	2,216	16	0.1
Vallejo	63	440,196	66	229	132,494	48,619	379,889	687,434	14	0.2	7,965	9	0.5
Visalia	42	140,900	52	89	51,139	15,224	158,653	311,644	16	0.1	3,085	15	0.2
Total for state exclusive of urban manufactures	4,573	83,283,618	4,813	24,854	12,425,270	3,072,146	73,348,481	104,176,601	-------	34.4	834,345	-------	56.3
Per cent of urban manufactures to total for state	63.7	59.5	66.2	72.7	73.8	81.0	61.0	65.6	-------	-------	43.7	-------	-------

[1] Exclusive of 2,874 Indians and other persons on Indian reservations, which classes were not included at previous censuses.

Of the 12,582 establishments in the state, 8,009, or 63.7 per cent, were located in these 16 cities and towns. They furnished employment to 66,193 wage-earners, or 72.7 per cent of the total number, and the value of their products, $198,698,160, formed 65.6 per cent of the total for the state.

Table 6 shows the totals for the state by counties.

Table 7 shows the totals for the state by specified industries.

Table 8 shows the totals for the cities of Los Angeles, Oakland, Sacramento, San Francisco, and San Jose by specified industries.

Table 9 shows the totals for the cities and towns withdrawn from the enumerators, exclusive of those shown in Table 8.

TABLE 6.—MANUFACTURES

[No manufactures reported

	COUNTIES AND MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
1	The State	12,582	$205,395,025	$34,785,416	$22,562,385	$62,440,759	$85,656,465	14,224	7,884	$8,360,829	91,047	$47,425,947
2	Alameda	1,166	12,246,366	1,569,072	1,559,119	4,585,777	4,532,398	1,276	534	528,050	7,468	3,913,623
3	Amador	41	184,770	11,505	28,350	64,420	80,495	43	9	8,820	81	45,784
4	Butte	124	986,625	59,315	109,200	286,989	531,121	120	56	37,877	717	223,898
5	Calaveras	40	305,920	42,315	30,475	110,505	122,625	46	9	11,060	149	91,825
6	Colusa	49	204,745	8,185	26,969	67,265	102,376	45	8	6,420	90	70,510
7	Contra Costa	104	9,024,467	461,801	2,244,565	2,588,604	3,729,497	101	125	180,743	1,462	883,828
8	Del Norte	16	314,800	198,500	61,260	472,775	82,265	12	9	6,050	97	44,120
9	Eldorado	49	300,114	96,175	36,425	78,920	88,594	55	5	3,550	101	51,566
10	Fresno	281	6,317,279	1,775,318	592,261	1,640,526	2,309,174	264	169	193,091	1,948	960,887
11	Glenn	50	89,716	5,800	18,895	29,726	35,295	55	------	------	51	23,137
12	Humboldt	187	7,905,611	3,436,181	373,070	1,995,331	2,101,029	195	92	87,476	1,441	767,214
13	Inyo	19	363,878	56,418	65,321	64,219	177,920	19	9	9,233	72	38,925
14	Kern	96	665,990	68,860	132,630	206,291	258,209	104	24	21,600	437	277,603
15	Kings	52	295,777	24,764	44,783	89,944	136,286	54	14	13,100	272	121,906
16	Lake	50	121,902	12,670	13,025	52,050	44,157	60	------	------	88	28,612
17	Lassen	14	90,340	20,085	20,150	28,850	21,255	15	2	1,200	27	11,123
18	Los Angeles	1,762	13,671,902	1,353,390	1,570,244	4,074,547	6,673,721	1,961	1,018	898,778	9,365	4,489,223
19	Madera	38	810,028	77,700	153,775	289,131	289,422	40	15	15,925	281	203,530
20	Marin	80	690,924	120,235	120,600	179,000	271,089	90	18	19,600	353	175,248
21	Mariposa	12	79,140	21,475	7,700	38,500	11,465	13	2	1,320	16	6,604
22	Mendocino	96	6,093,099	3,495,316	261,455	1,631,378	704,950	96	53	67,340	1,338	608,951
23	Merced	61	229,504	15,520	55,154	64,998	93,832	65	8	4,925	75	37,239
24	Modoc	48	173,872	12,250	36,790	67,480	57,352	55	------	------	42	17,780
25	Mono	8	118,562	48,760	5,315	46,840	17,647	9	1	750	14	7,471
26	Monterey	59	3,498,575	189,174	863,050	2,357,176	89,175	59	13	22,660	387	240,376
27	Napa	158	1,496,219	84,515	310,985	395,135	705,584	177	40	27,835	629	249,628
28	Nevada	180	1,496,828	406,022	269,569	437,373	383,864	133	33	32,995	626	367,658
29	Orange	123	1,294,907	67,600	219,602	614,964	392,741	128	37	37,335	486	169,599
30	Placer	78	1,627,184	253,140	243,795	386,488	743,761	79	46	71,190	579	280,280
31	Plumas	36	222,910	39,765	21,725	92,035	69,385	42	2	2,100	84	48,667
32	Riverside	127	614,984	66,645	96,910	215,532	235,897	141	32	29,753	392	236,672
33	Sacramento	323	8,017,913	712,844	1,544,837	2,739,613	3,020,619	366	195	224,584	4,647	3,098,624
34	San Benito	58	247,279	34,695	31,341	71,985	109,258	57	9	5,770	67	35,147
35	San Bernardino	178	2,497,026	408,120	300,712	1,287,244	500,950	182	79	84,898	1,192	680,442
36	San Diego	271	1,515,108	326,100	199,185	561,171	428,652	294	66	55,222	666	330,669
37	San Francisco	4,002	80,103,367	8,468,392	5,820,445	24,824,345	40,990,185	4,924	4,041	4,619,033	41,978	22,037,527
38	San Joaquin	352	5,136,707	752,701	728,274	1,273,242	2,382,490	399	178	179,579	1,864	1,052,091
39	San Luis Obispo	131	422,748	48,225	92,408	194,368	92,747	137	16	10,074	188	76,758
40	San Mateo	52	1,947,050	149,441	364,541	256,250	1,176,818	52	37	59,393	559	334,287
41	*Santa Barbara*	*120*	*6,115,329*	*3,952,593*	*314,300*	*1,281,241*	*567,195*	*126*	*45*	*36,272*	*419*	*212,774*
42	Santa Clara	570	5,794,668	1,154,996	1,074,797	1,330,892	2,233,983	613	352	251,520	3,256	1,343,081
43	Santa Cruz	187	3,339,831	753,472	216,205	595,272	1,774,882	211	39	98,923	1,033	517,572
44	Shasta	83	1,302,426	82,035	302,574	214,134	703,683	97	24	21,497	533	400,776
45	Sierra	27	256,672	88,490	29,200	77,025	61,957	30	6	5,030	84	60,340
46	Siskiyou	83	2,407,465	908,178	215,892	577,788	705,607	92	43	49,790	581	349,477
47	Solano	131	2,812,040	202,566	443,785	435,313	1,730,376	125	53	50,516	863	504,138
48	Sonoma	363	4,438,752	770,283	404,796	697,581	2,561,092	389	101	112,264	1,720	654,842
49	Stanislaus	59	289,483	18,060	49,497	95,756	126,170	56	16	13,506	75	41,303
50	Sutter	22	185,550	57,750	40,525	32,535	54,740	20	12	18,000	233	80,355
51	Tehama	71	1,309,311	736,800	61,390	257,603	253,518	78	5	3,700	254	114,273
52	Trinity	18	43,188	4,208	5,625	13,938	19,417	21	2	600	32	8,475
53	Tulare	96	451,591	95,956	56,985	164,985	133,665	107	13	8,474	334	143,554
54	Tuolumne	62	1,514,057	774,145	116,650	373,350	249,912	67	15	14,347	357	190,078
55	Ventura	73	2,382,966	69,215	338,505	1,569,990	405,256	80	57	48,786	485	256,637
56	Yolo	90	273,667	24,995	67,490	96,808	84,374	96	11	10,809	123	56,062
57	Yuba	56	558,893	47,735	149,259	165,561	196,338	53	36	37,966	336	158,228

TABLE 7.—MANUFACTURES BY

1	All industries	12,582	$205,395,025	$34,785,416	$22,562,385	$62,440,759	$85,656,465	14,224	7,884	$8,360,829	91,047	$47,425,947
2	Agricultural implements	20	1,852,157	233,832	185,669	280,360	1,152,296	12	81	74,900	562	322,272
3	Ammunition	5	414,917	50,900	71,000	87,667	205,350	1	11	17,900	130	61,080
4	Artificial limbs	4	5,758	------	------	2,058	3,700	5	------	------	10	6,460
5	Awnings, tents, and sails	30	246,932	3,600	1,100	34,380	207,852	40	16	19,328	214	135,131
6	Babbitt metal and solder	4	175,675	------	------	24,575	151,100	4	8	11,250	34	22,774
7	*Bags, other than paper*	9	805,290	1,500	2,000	67,490	734,300	8	25	17,806	225	88,551
8	Baking and yeast powders	9	744,945	12,110	19,850	56,881	656,104	13	81	81,232	104	47,536
9	Baskets, and rattan and willow ware	17	113,905	15,600	9,000	21,115	68,190	14	8	6,625	154	45,910
10	Belting and hose, leather	6	183,106	37,500	16,709	30,307	98,590	7	12	10,816	40	25,856
11	Bicycle and tricycle repairing	234	283,327	17,145	18,480	87,413	160,289	264	5	2,624	255	120,529
12	Bicycles and tricycles	4	19,254	------	------	4,400	14,854	5	------	------	19	11,080
13	Billiard tables and materials	3	24,250	------	------	3,250	21,000	2	6	5,180	14	11,444
14	Blacksmithing and wheelwrighting	1,349	2,076,782	400,045	378,247	421,039	877,451	1,541	16	10,990	1,234	715,701
15	Bookbinding and blank book making	21	100,925	------	------	63,750	37,175	28	12	12,418	225	102,777
16	Boot and shoe uppers	4	3,900	------	------	700	3,200	6	2	381	6	2,765

BY COUNTIES: 1900.

from Alpine county.]

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.				
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.	Value of products, including custom work and repairing.	
71,648	$42,229,366	17,285	$4,814,498	2,114	$382,083	$16,190,282	$3,300,563	$1,049,932	$9,876,976	$1,962,811	$188,125,602	$183,260,497	$4,865,105	$302,874,761	1
5,820	3,477,700	1,412	392,825	236	43,098	991,866	181,809	61,935	507,344	240,778	9,414,932	9,000,400	414,532	17,852,388	2
78	44,484	8	1,250	------	------	11,901	2,479	1,292	8,130	------	122,772	117,005	5,767	237,595	3
341	160,306	263	51,466	113	12,126	56,800	10,427	13,851	29,772	2,750	808,949	796,990	11,959	1,391,309	4
143	90,055	4	1,320	2	450	12,369	2,403	1,973	7,893	100	135,766	129,825	5,941	372,418	5
87	69,810	1	400	2	300	19,730	13,056	1,694	4,380	600	82,166	73,448	8,718	243,797	6
1,417	871,448	30	9,286	15	3,094	410,904	7,082	29,060	374,762	------	35,213,438	34,835,173	378,265	36,909,580	7
94	43,220	3	900	------	------	13,278	216	5,082	7,980	------	222,637	220,872	1,765	359,749	8
94	49,943	5	1,515	2	108	10,238	2,399	1,902	5,187	750	88,876	83,228	5,648	218,782	9
1,599	861,941	323	93,105	26	5,841	298,263	36,729	32,847	227,883	849	3,765,537	3,697,635	67,902	6,289,351	10
39	20,668	8	2,081	4	388	7,439	2,907	740	3,792	------	42,121	39,926	2,195	115,668	11
1,402	754,193	33	12,537	6	484	194,702	14,585	43,959	135,703	455	2,640,750	2,621,835	18,915	4,362,912	12
70	38,475	2	450	------	------	7,752	371	1,396	5,835	150	85,590	75,363	10,227	201,350	13
422	273,333	10	3,596	5	674	29,128	8,965	7,828	12,335	------	429,003	410,931	18,072	911,149	14
147	78,369	120	43,063	5	474	51,565	4,814	2,453	34,052	10,246	775,527	764,959	10,568	1,060,474	15
59	19,617	24	3,140	5	855	6,978	3,054	1,200	2,724	------	93,112	90,481	2,631	171,840	16
26	10,883	------	------	1	240	3,659	50	889	2,720	------	54,389	53,101	1,288	90,185	17
7,146	3,950,623	1,922	488,419	297	50,181	1,638,353	380,613	71,789	864,031	321,920	13,038,153	12,690,905	347,248	25,040,463	18
274	201,040	6	1,430	1	460	38,819	3,625	3,163	27,031	------	200,718	189,259	11,459	620,260	19
343	173,378	9	1,795	1	75	29,523	8,066	3,553	17,904	------	339,516	319,503	20,013	761,392	20
15	6,164	1	440	------	------	1,217	188	635	394	------	11,638	11,378	260	32,185	21
1,331	607,580	3	1,035	4	336	98,161	4,888	45,242	48,031	------	1,122,093	1,116,290	5,803	2,359,169	22
67	36,059	4	1,000	4	180	13,011	4,466	1,640	6,345	560	189,652	184,322	5,330	326,111	23
36	16,860	2	420	4	500	7,300	1,158	1,610	4,387	145	91,271	88,019	3,252	168,758	24
11	6,865	2	528	1	78	1,568	48	665	842	13	11,680	10,675	1,005	30,542	25
372	236,626	7	2,420	8	1,330	38,476	2,728	17,954	17,794	------	1,475,930	1,384,274	91,656	1,970,529	26
443	204,795	160	40,608	26	4,225	121,941	15,809	10,778	95,204	150	1,021,702	999,715	21,987	1,663,526	27
614	364,856	11	2,557	1	245	76,079	12,075	19,375	44,629	------	741,860	728,103	13,757	1,454,570	28
267	127,121	209	40,993	10	1,485	57,558	12,682	7,088	37,713	75	827,555	804,498	23,057	1,274,095	29
487	265,724	65	11,936	27	2,620	58,772	4,865	8,342	45,423	142	331,308	277,180	54,128	931,149	30
83	43,267	1	400	------	------	5,472	740	1,172	3,560	------	105,346	104,257	1,089	216,054	31
338	229,467	42	6,572	12	633	34,124	12,780	3,016	16,028	2,300	635,860	591,815	44,045	1,143,034	32
4,281	2,976,303	381	115,734	35	6,587	736,358	71,501	69,905	477,836	117,116	7,068,022	6,750,946	317,076	12,500,298	33
61	33,829	5	1,186	1	132	19,655	4,176	1,878	13,601	------	163,140	156,421	6,719	258,910	34
1,149	671,421	26	6,844	17	2,177	154,181	16,767	16,261	87,403	33,750	1,775,282	1,601,729	173,553	3,322,828	35
538	298,995	122	30,812	6	862	146,628	37,934	8,671	77,873	22,150	686,844	653,354	33,490	1,554,315	36
31,722	19,106,879	9,321	2,734,984	935	195,664	8,826,167	2,083,400	354,450	5,295,847	1,092,470	79,492,952	77,797,077	1,695,875	133,069,416	37
1,654	997,843	180	50,372	30	3,876	357,776	48,944	34,421	236,915	37,496	5,023,871	4,936,476	87,395	7,482,573	38
142	64,594	40	11,249	6	915	28,202	9,523	3,112	13,453	2,114	266,409	256,693	9,716	500,222	39
530	323,700	28	10,467	1	120	66,518	3,622	4,582	58,314	------	1,784,520	1,751,865	32,655	2,529,055	40
372	198,729	44	13,570	3	475	48,419	15,245	10,410	16,689	1,075	493,733	449,662	44,071	897,426	41
2,008	1,043,950	1,138	284,387	110	14,744	461,299	99,095	29,753	321,825	11,126	4,004,345	3,905,467	98,878	7,534,144	42
999	509,596	29	7,486	5	490	204,454	23,689	16,602	151,443	12,720	1,544,232	1,508,228	36,004	2,963,514	43
520	397,359	8	2,915	5	502	77,613	6,184	6,703	64,501	225	1,373,131	886,752	486,379	4,592,164	44
82	60,210	------	------	2	130	8,358	372	1,969	6,017	------	138,396	136,828	1,568	248,491	45
555	341,162	11	4,105	15	4,210	68,816	6,172	10,835	51,809	------	1,170,971	1,160,791	10,180	2,099,612	46
750	473,806	96	27,027	17	3,305	101,810	19,921	13,473	68,223	193	2,003,649	1,975,989	27,660	2,974,469	47
1,065	505,665	626	146,093	29	3,084	258,706	51,186	20,826	160,399	36,295	2,972,171	2,916,466	55,705	4,971,357	48
66	39,785	8	1,362	1	156	18,941	2,498	2,228	13,997	218	415,319	403,961	11,358	563,843	49
77	35,155	124	38,200	32	7,000	12,678	574	933	11,171	------	240,415	236,889	3,526	374,145	50
211	106,814	8	2,405	35	5,054	42,885	9,652	5,964	27,269	------	588,057	581,311	6,746	859,267	51
31	8,427	------	------	1	48	2,416	588	463	1,365	------	25,355	24,745	610	62,067	52
195	102,981	137	40,318	2	255	32,744	7,190	3,044	20,480	2,030	491,759	480,248	11,511	825,231	53
351	188,728	5	1,290	1	60	26,194	5,263	8,968	11,963	------	495,149	489,484	5,665	862,754	54
372	234,122	110	21,258	3	1,257	78,119	4,651	10,886	51,152	11,430	741,792	669,044	72,148	1,415,166	55
97	48,595	23	7,157	3	310	22,857	8,582	2,445	11,410	420	229,297	219,024	10,273	408,575	56
205	120,248	130	37,790	1	190	51,542	8,257	6,527	36,758	------	816,944	799,082	17,862	1,243,535	57

SPECIFIED INDUSTRIES: 1900.

71,648	$42,229,366	17,285	$4,814,498	2,114	$382,083	$16,190,282	$3,300,563	$1,049,932	$9,876,976	$1,962,811	$188,125,602	$183,260,497	$4,865,105	$302,874,761	1
562	322,272	------	------	------	------	106,011	835	8,204	96,672	300	538,568	516,573	21,995	1,357,849	2
108	49,460	27	11,620	------	------	30,753	------	1,243	29,510	------	491,140	485,675	5,465	651,550	3
10	6,460	------	------	------	------	1,563	715	7	841	------	3,809	3,809	------	20,325	4
126	106,259	82	27,725	6	1,147	30,643	15,571	1,631	13,341	100	973,702	972,522	1,180	1,273,184	5
33	22,196	------	------	1	578	6,782	4,260	368	2,154	------	464,140	446,080	18,060	551,455	6
118	55,347	107	33,204	------	------	52,860	12,782	1,651	38,367	------	1,789,871	1,786,456	3,415	2,034,239	7
60	37,986	44	9,550	------	------	127,360	7,756	2,872	112,932	3,800	748,462	741,823	6,639	1,130,133	8
33	29,985	71	15,925	------	------	7,071	2,125	464	4,482	------	93,637	92,632	1,005	203,990	9
36	25,310	------	------	4	546	14,704	5,604	875	8,225	------	182,153	179,029	3,124	288,693	10
242	118,429	2	560	11	1,540	54,104	38,507	2,332	13,155	110	195,768	188,715	7,043	564,088	11
19	11,080	------	------	------	------	3,144	1,180	56	1,333	575	25,470	25,035	435	47,670	12
13	11,080	------	------	1	364	6,099	5,276	218	605	------	29,985	29,935	50	70,000	13
1,219	711,513	------	------	15	4,188	159,639	106,969	15,589	34,081	3,000	1,045,393	934,953	110,440	3,236,424	14
96	58,955	105	38,286	24	5,536	15,510	10,748	472	4,290	------	63,141	61,277	1,864	238,806	15
5	2,455	1	310	------	------	1,138	1,020	10	------	108	4,485	4,425	60	11,177	16

TABLE 7.—MANUFACTURES BY

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
17	Boots and shoes, custom work and repairing.	797	$266,218	$32,188	$38,394	$92,703	$102,933	821	2	$1,800	255	$123,277
18	Boots and shoes, factory product	30	1,257,746	13,500	12,450	343,633	888,163	82	61	55,532	994	456,927
19	Bottling	78	2,722,274	64,100	309,351	72,245	2,276,578	75	98	153,051	420	269,398
20	Boxes, cigar	7	64,930	9,000	3,200	19,900	32,830	32	3	1,800	96	39,758
21	Boxes, fancy and paper	13	152,849			52,744	100,105	20	14	11,020	296	96,015
22	Boxes, wooden packing	23	717,116	17,377	80,698	183,702	435,339	9	52	62,740	599	284,068
23	Brass castings and brass finishing	12	691,727	78,500	36,650	157,430	419,147	15	25	30,655	337	212,874
24	Brassware	4	87,250			31,180	56,070	4	2	3,000	8	6,229
25	Bread and other bakery products	359	1,664,664	349,245	322,425	445,731	547,263	428	194	109,726	1,548	836,000
26	Brick and tile	56	1,205,295	244,648	411,428	176,607	372,617	60	45	42,790	720	332,724
27	Bridges	11	611,100		500	218,800	391,800	20	46	65,080	613	324,733
28	Brooms and brushes	30	184,504	9,325	10,700	27,590	136,889	32	25	18,086	211	98,861
29	Buttons	5	6,487			725	5,762	6	1	1,200	6	988
30	Carpentering	511	1,302,866	208,715	196,665	165,280	732,206	595	38	37,532	2,339	1,597,860
31	Carpets, rag	5	4,130	500	500	1,375	1,755	5			7	4,405
32	Carriage and wagon materials	9	243,850	15,000	25,000	15,600	188,250	10	5	7,800	47	31,454
33	Carriages and wagons	228	1,474,424	327,321	230,630	228,725	687,748	274	34	37,975	1,004	532,203
34	Cars and general shop construction and repairs by steam railroad companies.	29	4,429,951	300,165	1,242,009	1,409,802	1,477,975		119	141,798	4,920	3,507,028
35	Cars, street railroad, not including operations of railroad companies.	3	205,704	5,000	55,000	94,000	51,704	3	5	5,015	70	39,120
36	Cheese and butter, urban dairy products.	8	12,798		500	8,620	3,678	12			4	1,809
37	Cheese, butter, and condensed milk, factory product.	178	1,157,090	196,192	259,832	460,270	240,796	137	90	47,464	402	203,359
38	Chemicals	21	1,844,928	248,752	289,511	651,992	654,673	11	62	70,493	390	230,395
39	China decorating	8	9,411			556	8,855	8	1	900	2	1,000
40	Clothing, men's, custom work and repairing.	688	1,331,440	51,678	41,138	62,006	1,176,618	789	149	137,468	2,332	1,289,312
41	Clothing, men's, factory product	96	1,060,934	42,500	33,000	103,153	882,281	278	72	66,072	2,410	758,264
42	Clothing, women's, dressmaking	365	399,892	27,655	22,980	44,237	305,020	392	36	30,055	1,604	596,342
43	Clothing, women's, factory product	59	691,843			50,321	641,522	182	67	51,006	1,311	437,367
44	Coffee and spice, roasting and grinding	40	1,657,466	7,000	4,700	149,510	1,496,256	48	168	212,013	267	157,614
45	Coffins, burial cases, and undertakers' goods.	6	231,775	1,000	3,700	8,725	218,350	3	12	15,200	68	29,551
46	Confectionery	204	973,383	60,850	27,800	252,964	631,769	237	234	137,648	940	307,991
47	Cooperage	33	470,558	98,240	77,285	58,490	236,543	36	13	14,700	385	247,394
48	Copper, smelting and refining	3	1,114,882	11,500	278,734	131,845	692,803		21	25,357	381	342,491
49	Corsets	10	2,467			540	1,927	10			22	8,097
50	Druggists' preparations, not including prescriptions.	7	142,250	4,000	100	24,650	113,500	3	18	21,360	103	50,225
51	Dyeing and cleaning	71	112,989	11,050	7,400	58,615	35,924	77	31	15,525	325	122,055
52	Electrical apparatus and supplies	11	181,474	6,000	12,196	80,101	83,177	5	29	28,638	238	129,906
53	Electrical construction and repairs	44	144,047	1,000	250	46,571	96,226	49	17	16,138	184	116,909
54	Electroplating	9	27,002			18,451	8,551	9	3	2,768	38	16,635
55	Engraving and diesinking	17	12,075			8,285	3,790	18			19	7,836
56	Engraving, steel, including plate printing.	11	12,500			8,000	4,500	10	2	1,004	24	12,840
57	Engraving, wood	4	760			760		4			1	1,000
58	Explosives	7	3,283,928	206,987	909,985	394,029	1,772,927		82	130,860	906	602,765
59	Fancy articles, not elsewhere specified	4	8,170			170	8,000	9			1	360
60	Fertilizers	8	647,506	79,476	128,210	59,814	380,506	3	16	20,148	70	40,138
61	Fish, canning and preserving	19	691,285	51,000	70,100	69,235	500,950	33	33	49,710	376	158,888
62	Flavoring extracts	9	66,714	5,000	5,000	9,891	46,823	7	15	12,920	30	9,490
63	Flouring and grist mill products	124	6,552,642	690,081	1,124,862	1,555,248	3,182,451	101	199	269,866	857	525,401
64	Food preparations	60	504,069	40,450	113,050	124,522	226,047	87	47	30,010	435	165,998
65	Foundry and machine shop products	250	7,873,410	1,003,642	490,368	2,232,227	4,147,173	265	477	541,336	4,782	3,092,592
66	Fruits and vegetables, canning and preserving.	136	4,397,935	1,132,110	728,891	554,086	1,982,848	128	259	242,388	7,486	1,987,649
67	Fur goods	27	1,164,700	230,000	75,150	10,875	848,675	30	12	16,967	175	101,715
68	Furnishing goods, men's	17	277,290	5,000	3,000	8,145	261,145	44	53	38,280	583	130,886
69	Furniture, cabinetmaking, repairing, and upholstering.	217	304,197	21,675	32,315	47,422	202,785	250	11	7,485	336	196,949
70	Furniture, factory product	40	543,411	8,250	45,000	126,215	363,946	50	57	43,405	684	365,406
71	Gas and lamp fixtures	10	426,846	63,600	58,400	33,612	271,234	6	46	55,580	201	119,457
72	Gas, illuminating and heating	41	20,487,350	1,730,002	926,457	16,615,701	1,215,190		203	229,285	707	497,237
73	Gas machines and meters	9	32,540	1,500	2,040	9,150	19,850	11	4	3,600	28	9,284
74	Glass, cutting, staining, and ornamenting.	14	175,096	29,150	25,080	11,875	108,991	14	18	18,492	77	43,304
75	Gloves and mittens	23	432,996	4,010	7,250	32,820	388,916	30	65	52,962	622	224,953
76	Glue	4	129,500	15,000	33,000	17,500	64,000	3	5	3,560	38	22,940
77	Grease and tallow	5	61,490	7,200	7,000	8,600	38,690	10			17	11,424
78	Hairwork	15	27,300		1,500	2,950	22,850	17	1	312	62	25,611
79	Hand knit goods	3	2,770			475	2,295	3			9	3,562
80	Hand stamps	14	57,075			25,650	31,425	13	10	9,840	44	23,390
81	Hardware, saddlery	6	2,510		500	860	1,150	6			8	3,344
82	Hats and caps, not including fur hats and wool hats.	14	128,029	8,000	4,000	25,675	90,354	13	8	12,300	94	40,446
83	Hosiery and knit goods	3	89,160		4,000	17,910	67,250		10	12,160	79	27,880
84	House furnishing goods, not elsewhere specified.	3	5,125			525	4,600	2	1	250	3	1,180
85	Ice, artificial	20	1,305,971	236,100	166,553	806,135	97,183	7	64	62,661	190	132,023
86	Ink, printing	3	77,310			14,900	62,410	2	9	9,800	21	13,952

SPECIFIED INDUSTRIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.				
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.	Value of products, including custom work and repairing.	
250	$122,683	2	$262	8	$332	$100,072	$78,824	$1,968	$9,026	$10,259	$284,056	$282,214	$1,842	$918,025	17
720	372,131	241	79,036	33	5,760	64,373	22,338	4,874	36,961	200	1,098,184	1,086,668	11,516	1,850,511	18
412	266,826			8	2,572	308,348	33,828	6,957	267,563		3,550,592	3,536,915	13,677	4,800,160	19
60	31,240	30	7,642	6	876	8,170	5,030	904	2,236		59,932	58,962	970	142,808	20
66	33,563	224	61,142	6	1,310	17,567	10,347	655	6,565		134,450	132,412	2,038	828,880	21
580	278,856	7	1,980	12	3,232	65,421	13,910	3,000	48,511		1,027,205	1,025,821	1,384	1,778,970	22
337	212,874					20,606	9,748	3,340	6,222	1,296	386,780	367,944	18,836	770,949	23
6	5,653	2	576			2,430	1,350	60	540	480	13,272	13,032	240	40,000	24
1,265	756,656	261	71,387	22	7,957	216,379	124,027	9,541	82,706	105	2,624,261	2,519,486	104,775	4,876,688	25
710	330,326	2	504	8	1,894	62,027	5,516	4,974	46,537	5,000	165,843	39,553	126,290	834,262	26
613	324,783					53,263	4,741	2,239	15,283	31,000	656,478	620,413	36,065	1,209,762	27
189	93,415	9	2,330	13	3,116	14,426	8,998	626	4,702	100	187,847	185,934	1,913	382,072	28
		2	336	4	652	1,277	635	50	592		2,795	2,745	50	8,870	29
2,329	1,594,522	3	1,800	7	1,588	845,512	48,763	9,147	71,841	720,761	3,851,681	3,845,317	6,284	7,816,386	30
5	3,635	2	770			615	480	9	126		1,836	1,716	120	9,928	31
46	31,142	1	312			8,767	2,046	1,394	5,327		133,854	133,084	770	305,302	32
978	527,447			26	4,756	99,663	45,670	10,598	33,985	9,410	715,207	678,371	36,836	1,874,467	33
4,908	3,502,570	7	2,578	5	1,880	76,590		53,658	22,932		3,825,340	3,611,445	213,895	7,553,626	34
70	39,120					7,498	2,220	1,228	4,050		99,395	94,775	4,620	191,855	35
8	1,529	1	280			1,297	1,076	34	37	150	43,525	42,917	608	50,631	36
352	187,848	50	15,511			62,161	10,379	6,098	44,764	920	2,980,962	2,915,352	65,610	3,582,942	37
387	228,978	3	1,422			89,823	1,280	8,089	80,454		1,406,425	1,259,225	147,200	2,061,470	38
		2	1,000			1,032	962	8	62		1,268	1,082	186	14,381	39
1,742	1,088,945	552	192,513	38	7,854	545,005	292,338	9,328	78,408	164,431	1,969,297	1,956,201	13,096	5,172,688	40
814	348,774	1,581	407,150	15	2,340	241,655	47,640	6,679	77,343	109,993	2,309,326	2,293,375	15,951	3,869,891	41
148	116,336	1,445	478,709	11	1,297	123,864	96,825	2,109	22,830	2,100	755,388	750,283	5,105	2,013,499	42
346	178,889	954	256,584	11	1,894	62,300	45,400	1,763	13,937	1,200	1,007,874	1,001,955	5,919	1,981,136	43
196	138,073	67	18,860	4	681	145,606	60,980	7,027	77,599		2,314,878	2,284,748	30,130	3,135,558	44
50	23,756	18	5,795			16,920	6,920	829	9,171		178,357	177,697	660	276,772	45
459	217,662	459	86,134	22	4,195	181,275	115,432	5,712	60,131		1,154,486	1,120,706	33,780	2,389,618	46
378	244,994	1	600	6	1,800	63,429	10,512	2,004	17,913	33,000	948,148	946,477	1,671	1,413,456	47
381	342,491					90,026		4,229	85,797		1,379,423	827,564	551,859	4,508,259	48
2	1,020	20	7,077			2,577	2,198	34	345		8,665	8,487	178	30,475	49
46	32,700	44	14,800	13	2,725	30,968	8,268	1,170	21,530		128,815	127,415	1,400	295,762	50
131	67,725	188	53,484	6	846	45,291	22,215	562	20,618	1,896	63,688	50,777	12,911	408,983	51
228	127,826			10	2,080	11,771	8,152	690	2,929		359,135	353,197	5,938	555,735	52
174	114,069	1	316	9	2,524	20,273	12,479	621	6,873	300	257,654	254,578	3,076	585,844	53
31	16,065			2	570	4,997	3,140	67	1,640	150	18,144	16,420	1,724	58,670	54
14	6,600	2	720	3	516	3,529	3,159	40	330		5,960	5,818	142	34,700	55
13	11,110	4	1,414	2	316	2,716	2,337	40	339		4,194	4,107	87	30,840	56
1	1,000					677	672	5			1,170	1,170		8,120	57
882	593,128	24	9,637			255,278	1,600	10,178	243,500		2,669,634	2,553,489	116,145	4,283,818	58
1	360					903	484	4	415		2,405	2,405		6,707	59
70	40,188					17,638	1,430	1,403	14,805		482,818	473,999	8,819	670,517	60
279	136,422	73	19,680	24	2,786	23,370	6,626	1,885	14,709	150	449,718	441,918	7,800	866,432	61
16	6,770	12	2,000	2	720	9,557	2,816	219	6,472	50	53,351	52,153	1,198	111,980	62
825	516,144	27	8,357	5	900	246,409	14,428	43,342	188,049	590	11,077,482	10,877,755	199,727	13,100,944	63
305	137,506	125	27,826	5	666	53,480	17,756	2,856	32,469	399	892,670	867,801	24,869	1,420,519	64
4,716	3,077,964	2	744	64	13,884	900,021	129,452	31,492	641,230	97,847	5,434,863	5,121,064	313,799	12,047,149	65
1,819	702,428	5,252	1,233,861	415	51,360	412,737	26,708	18,311	366,412	1,306	9,102,400	9,005,687	96,713	13,081,829	66
62	52,022	112	49,423	1	270	33,221	14,918	9,060	9,243		500,329	499,769	560	1,138,295	67
411	102,630	160	27,100	12	1,156	29,545	11,512	1,288	15,045	1,700	364,189	362,367	1,822	664,085	68
297	182,436	33	13,331	6	1,182	62,438	38,038	2,522	14,328	7,550	288,028	284,855	3,173	823,875	69
633	351,569	36	10,792	15	3,045	80,834	29,508	6,587	43,339	1,400	583,755	571,752	12,003	1,267,986	70
175	114,657	10	2,800	16	2,000	25,607	8,050	1,320	16,237		165,133	158,679	6,454	458,229	71
705	496,587			2	650	604,847	55,230	126,423	423,194		895,853	857,173	38,680	3,162,333	72
22	9,034	1	250			2,709	1,945	174	590		20,820	20,485	335	45,565	73
71	42,250	1	300	5	754	19,175	9,926	2,122	6,627	500	148,312	145,825	2,487	307,998	74
176	94,924	422	126,729	24	3,300	68,189	15,500	1,845	50,644	200	436,512	433,638	2,874	920,624	75
38	22,940					4,659	360	667	3,407	225	219,705	207,145	12,560	277,234	76
17	11,424					5,632	720	267	4,645		182,641	180,251	2,390	239,726	77
7	3,480	55	22,131			9,310	6,822	150	2,338		24,639	24,394	245	84,686	78
2	2,016	7	1,546			981	629	7	345		1,814	1,814		10,100	79
38	21,912	2	812	4	666	8,138	5,993	210	1,915	20	23,025	22,029	996	79,669	80
8	3,344					506	402	7	97		1,179	1,087	92	9,712	81
30	19,968	60	19,828	4	650	24,327	10,903	237	13,187		77,115	75,342	1,773	184,602	82
6	3,200	66	23,500	7	1,180	10,570	1,800	540	8,230		71,751	70,751	1,000	126,980	83
1	780	1	150	1	250	1,124	815	20	289		6,860	6,857	3	13,670	84
188	131,543	2	480			89,759	6,160	6,256	77,343		119,889	40,941	78,948	511,197	85
21	13,952					5,165	2,955	642	1,568		67,603	64,467	3,136	119,740	86

TABLE 7.—MANUFACTURES BY

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
87	Instruments, professional and scientific	10	$60,700			$18,800	$41,900	13	7	$4,900	40	$29,646
88	Iron and steel	3	1,499,162	$480,500	$104,500	565,000	349,162		18	22,250	555	327,184
89	Ironwork, architectural and ornamental.	22	462,939	1,200	2,300	102,625	356,814	21	37	50,194	259	158,715
90	Ivory and bone work	3	1,550			1,100	450	3			5	2,800
91	Jewelry	31	208,894	1,000	1,025	49,949	156,920	53	18	18,547	252	175,701
92	Kaolin and other earth grinding	5	65,395	50,500	2,500	8,700	3,695	7	1	720	14	5,085
93	Lamps and reflectors	4	14,850			3,050	11,800	7	5	5,320	16	8,502
94	Lard, refined	3	15,267	3,750	1,500	830	9,187	5			7	2,870
95	Leather goods	28	117,603	1,000	1,625	16,515	98,463	34	21	18,650	166	62,448
96	Leather, tanned, curried, and finished	45	4,820,205	303,350	577,115	427,860	3,511,880	48	75	106,458	1,454	870,973
97	Lime and cement	18	1,286,333	559,460	202,833	221,987	302,053	14	30	39,196	386	209,039
98	Liquors, distilled	8	76,600	2,100	15,200	17,850	41,450	9			20	5,932
99	Liquors, malt	99	8,183,286	1,212,127	1,894,415	1,477,327	3,599,417	105	125	212,684	950	753,424
100	Liquors, vinous	187	4,658,625	139,315	866,971	699,750	2,952,589	172	106	124,465	526	224,849
101	Lithographing and engraving	8	620,270			215,069	405,201	4	42	66,440	421	207,230
102	Lock and gun smithing	116	123,425	19,000	15,250	39,085	50,090	131	5	1,910	68	38,168
103	Looking-glass and picture frames	57	384,795	19,700	12,700	42,095	310,300	59	34	22,136	305	141,527
104	Lumber and timber products	313	28,236,332	13,403,324	1,087,313	7,559,653	6,186,042	335	335	368,437	5,806	2,849,457
105	Lumber, planing mill products, including sash, doors, and blinds.	136	3,431,949	255,793	318,268	828,572	2,034,316	149	162	176,290	2,022	1,211,188
106	Malt	5	376,130	82,900	144,000	46,500	102,730	4	6	12,600	52	47,311
107	Marble and stone work	49	901,877	126,363	117,720	106,705	551,089	59	37	58,070	551	373,952
108	Masonry, brick and stone	51	123,005	14,650	9,825	33,060	65,470	68	10	12,235	416	240,555
109	Matches	3	86,600		2,800	20,000	63,800		5	8,100	68	34,460
110	Mattresses and spring beds	21	142,560	4,150	11,100	12,339	114,971	30	17	20,180	143	62,819
111	Millinery and lace goods	13	35,321			7,380	27,941	14	11	6,080	120	32,156
112	Millinery, custom work	306	797,672	125,600	38,150	28,065	605,857	345	156	59,318	904	293,759
113	Mineral and soda waters	106	580,236	82,310	78,940	225,590	193,396	118	91	82,372	282	154,980
114	Models and patterns	10	32,390	2,000	2,000	8,720	19,670	13			55	31,335
115	Monuments and tombstones	75	303,740	62,290	18,063	27,705	195,682	95	12	11,830	197	142,288
116	Mucilage and paste	4	51,125	12,000	10,000	17,025	12,100	2	5	10,500	24	13,157
117	Musical instruments and materials, not specified.	6	14,905			2,555	12,350	6			8	5,395
118	Musical instruments, organs and materials.	4	34,240	4,750	3,800	4,830	20,860	4	2	2,240	20	13,720
119	Musical instruments, pianos and materials.	4	39,150	7,000	4,000	4,350	23,800	3			15	12,300
120	Oil, not elsewhere specified	7	994,287	259,419	219,657	163,355	351,856	3	43	59,910	207	89,046
121	Optical goods	14	47,735			14,130	33,605	18	13	21,920	42	27,090
122	Painting, house, sign, etc	439	471,791	71,170	43,025	83,614	273,982	501	30	20,189	1,480	909,983
123	Paints	11	873,378	8,300	159,588	117,463	588,027	10	33	39,922	163	100,444
124	Paper goods, not elsewhere specified	4	53,625			22,000	31,625	3	4	1,950	46	18,100
125	Paper hanging	27	70,965	5,000	300	4,948	60,717	35	3	939	127	72,088
126	Patent medicines and compounds	56	787,354	173,020	63,500	95,868	455,466	47	59	64,428	239	109,357
127	Paving and paving materials	52	6,159,839	4,179,993	133,175	823,233	1,023,438	52	96	130,909	2,123	738,169
128	Perfumery and cosmetics	8	58,043		5,000	6,220	46,823	13	32	14,200	48	16,743
129	Petroleum, refining	4	477,618	46,810	26,813	315,987	88,008		19	40,303	53	42,453
130	Photography	222	406,777	13,200	14,125	185,590	193,862	250	64	38,310	395	182,157
131	Photolithographing and photoengraving.	14	35,906			21,936	13,970	16	10	11,086	74	35,125
132	Pickles, preserves, and sauces	27	349,575	57,025	27,975	49,240	215,335	29	50	46,544	183	69,514
133	Pipes, tobacco	4	1,135			425	710	4				
134	Plastering and stuccowork	40	85,127	13,165	15,150	19,840	36,972	45			140	110,187
135	Plumbers' supplies	5	84,764	1,600	3,300	44,198	35,666	4	3	4,480	82	55,735
136	Plumbing, and gas and steam fitting	414	1,318,162	196,600	143,575	169,941	808,046	513	40	30,204	1,281	835,434
137	Pottery, terra cotta, and fire-clay products.	18	1,306,869	111,704	435,040	212,352	547,773	16	41	58,540	391	246,270
138	Printing and publishing, book and job	232	1,863,663	1,400	2,050	1,187,567	672,646	268	136	140,292	1,608	874,972
139	Printing and publishing, newspapers and periodicals.	512	4,440,602	161,215	239,835	2,464,724	1,574,828	538	857	840,650	2,683	1,804,619
140	Roofing and roofing materials	21	144,741	20,100	5,950	46,725	71,966	23	19	19,810	106	60,037
141	Rubber and elastic goods	6	38,500			17,500	21,000	3	8	4,135	21	8,295
142	Saddlery and harness	347	1,673,021	433,955	196,280	130,359	912,427	372	59	47,885	684	376,883
143	Safes and vaults	4	25,000			11,500	13,500	3	10	7,200	37	20,900
144	Salt	24	757,895	468,661	36,000	102,511	150,723	28	37	37,128	267	109,774
145	Sausage	10	53,125	17,000	7,800	19,200	9,125	12	2	900	24	12,267
146	Saws	4	157,097	4,460	18,146	94,397	40,094		15	16,440	48	34,457
147	Sewing machine repairing	6	6,575	1,000	2,000	2,800	775	4	1	50	6	3,608
148	Ship and boat building, wooden	39	298,990	30,950	38,170	92,360	137,510	51	21	23,348	885	538,694
149	Shirts	33	266,512			25,512	241,000	53	44	52,468	622	223,236
150	Shoddy	3	10,225	1,500	2,625	2,500	3,600	4			8	3,940
151	Show cases	5	12,800			3,800	9,000	6			34	18,888
152	Silk and silk goods	5	308,847	3,600	29,726	44,161	231,360	6	6	4,998	117	33,055
153	Slaughtering and meat packing, wholesale.	23	2,875,988	411,474	688,560	425,156	1,350,798	19	123	174,152	660	344,189
154	Slaughtering, wholesale, not including meat packing.	35	1,037,093	85,600	92,400	76,555	782,538	45	57	80,415	265	200,470
155	Soap and candles	35	1,402,772	153,116	256,178	308,914	684,564	44	53	59,731	244	117,428
156	Steam fittings and heating apparatus	3	10,050			5,300	4,750	1	5	1,336	9	6,125

SPECIFIED INDUSTRIES: 1900—Continued.

Average number of wage-earners and total wages—continued.						Miscellaneous expenses.					Cost of materials used.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
39	$29,406	1	$240			$5,131	$4,356	$138	$637		$10,736	$9,936	$800	$74,880	87
539	323,862	4	1,000	12	$2,322	18,944		5,036	13,908		506,834	401,469	105,365	900,854	88
256	158,825			3	390	30,073	12,522	979	12,572	$4,000	405,341	396,230	9,111	758,518	89
4	2,500	1	300			592	564	3	25		1,525	1,525		8,060	90
238	173,543	2	520	12	1,638	43,264	15,592	889	21,983	4,800	418,458	408,650	9,808	742,769	91
14	5,085					3,215	1,151	63	561	1,440	25,301	23,135	2,166	49,545	92
12	7,560	1	234	3	708	3,371	1,872	49	1,210	240	19,882	19,498	384	45,500	93
7	2,870					754	741	9	4		59,926	59,434	492	67,758	94
90	46,651	72	15,357	4	440	16,351	6,330	425	8,396	1,200	76,015	74,934	1,081	234,860	95
1,437	864,719	11	4,044	6	2,210	180,795	5,673	17,492	157,680		5,809,428	5,773,872	35,556	7,405,981	96
386	209,039					36,521	100	4,854	19,067	12,500	215,575	109,293	106,282	619,796	97
20	5,932					5,675	100	417	5,083	75	191,364	188,505	2,859	288,267	98
940	749,844	8	3,280	2	800	2,126,734	11,370	41,725	2,073,639		1,276,575	1,082,579	193,996	5,085,462	99
526	224,849					265,487	24,059	24,984	216,444		2,526,768	2,464,346	62,422	3,937,871	100
290	174,618	107	29,258	24	3,354	55,137	19,155	1,963	34,019		269,364	260,917	8,447	718,945	101
62	37,063	1	150	5	955	21,648	17,589	928	3,131		43,163	40,770	2,393	205,803	102
243	127,717	35	9,910	27	3,900	52,497	19,540	2,012	30,945		158,604	156,798	1,806	513,260	103
5,706	2,825,527	41	13,527	59	10,403	573,047	12,608	168,645	391,794		7,528,215	7,526,676	1,539	13,764,647	104
1,960	1,197,169	4	1,170	58	12,849	175,114	62,584	15,757	85,025	11,748	2,436,391	2,403,670	32,721	4,807,690	105
51	46,911	1	400			11,130		2,530	8,600		346,911	330,896	16,015	582,990	106
547	373,202	2	600	2	150	39,988	18,016	3,743	10,904	7,325	371,657	356,144	15,513	1,053,215	107
416	240,555					200,790	4,173	1,046	8,149	187,422	322,546	320,976	1,570	941,812	108
63	31,760	5	2,700			4,605	1,020	175	3,410		36,365	35,375	990	108,000	109
118	54,917	20	7,010	5	892	12,864	9,310	949	2,605		245,268	243,343	1,925	448,839	110
10	4,264	109	27,837	1	54	5,124	3,318	99	1,657	50	39,429	39,187	242	116,710	111
14	8,104	861	281,207	29	4,448	200,519	163,792	5,711	30,989	27	1,039,272	1,037,068	2,204	2,114,749	112
268	151,380	6	1,725	8	1,875	60,295	17,504	6,811	35,980		403,473	393,814	9,659	1,004,758	113
52	30,665			3	670	5,239	3,825	109	1,155	150	16,475	15,194	1,281	78,563	114
194	141,476	2	728	1	84	19,217	7,816	1,439	8,340	1,622	229,159	227,597	1,562	545,482	115
20	11,957			4	1,200	2,235	988	352	895		47,442	45,788	1,654	81,500	116
8	5,395					2,157	1,107	30	620	400	3,415	3,378	37	27,513	117
20	13,720					3,458	348	120	2,990		9,184	8,984	200	30,100	118
15	12,300					2,028	840	118	1,070		10,866	10,866		45,660	119
197	84,846	10	4,200			56,892	1,200	7,975	47,717		615,855	604,461	11,394	928,113	120
37	25,690	2	960	3	440	12,953	6,692	245	5,416	600	57,028	55,836	1,192	178,277	121
1,470	908,339	1	240	9	1,404	88,801	60,949	2,832	22,716	2,304	727,607	726,902	705	2,306,487	122
154	97,017	9	3,397			19,165	6,300	1,776	10,972	117	853,231	841,471	11,760	1,128,643	123
36	15,100	10	3,000			13,623	2,420	273	10,930		167,255	164,935	2,320	231,500	124
127	72,088					23,865	6,318	542	3,005	14,000	77,160	77,136	24	233,327	125
121	68,344	114	40,189	4	824	165,168	17,759	2,582	144,827		572,399	568,327	4,072	1,182,476	126
2,123	738,169					71,794	4,634	6,094	58,166	2,900	849,057	828,684	20,373	2,149,974	127
20	9,798	28	6,945			34,158	1,930	85	32,143		85,230	84,958	272	180,265	128
53	42,453					15,785		3,261	12,524		489,989	454,368	35,621	697,877	129
224	122,397	158	57,488	13	2,272	118,950	78,275	1,886	35,484	3,305	301,733	299,395	2,338	1,022,075	130
70	34,380	1	270	3	475	4,399	3,139	178	1,082		15,129	13,371	1,758	99,275	131
103	53,406	76	15,552	4	556	23,890	10,600	1,492	11,798		336,620	329,433	7,187	652,878	132
						1,026	932	14	80		1,120	1,120		5,230	133
138	109,771			2	416	8,011	2,970	397	2,314	2,330	126,345	125,524	821	306,678	134
72	54,556	2	675	8	504	4,390	3,792	168	430		32,460	28,593	3,867	111,150	135
1,249	828,614	3	300	29	6,520	117,952	72,141	6,863	33,190	5,758	1,809,980	1,792,650	17,330	3,587,933	136
387	245,226			4	1,044	50,275	2,635	5,324	42,316		261,270	113,955	147,315	751,476	137
1,200	763,557	264	95,490	34	15,925	198,545	88,389	7,424	79,860	22,872	850,134	816,431	33,703	2,743,126	138
2,158	1,650,777	344	128,979	181	24,863	637,302	147,847	26,246	336,076	127,133	1,420,243	1,343,223	77,020	6,858,192	139
106	60,037					11,876	2,779	701	8,096	300	168,954	163,802	5,152	325,166	140
21	8,295					2,805	1,930	170	705		33,450	31,685	1,765	58,300	141
635	364,373	23	6,905	26	5,605	116,516	64,962	12,372	38,358	824	1,112,056	1,108,470	3,586	2,014,876	142
37	20,900					2,837	2,360	76	401		41,695	40,965	730	104,100	143
260	107,604	6	1,927	1	243	30,990	9,458	2,504	19,028		116,712	104,587	12,125	380,193	144
21	11,895	1	216	2	156	6,176	4,248	550	1,378		70,865	68,236	2,629	122,275	145
44	33,457			4	1,000	15,640	6,140	500	9,000		31,406	26,884	4,522	102,857	146
6	3,608					1,011	882	49	80		4,082	4,005	77	10,296	147
880	537,060			5	1,634	89,025	9,751	1,548	67,226	10,500	702,319	697,177	5,142	1,654,108	148
96	48,627	524	174,279	2	330	86,254	19,594	1,296	10,134	55,230	435,911	430,681	5,230	983,866	149
8	3,940					586	384	67	135		9,156	6,270	2,886	17,678	150
34	18,888					3,000	2,178	74	208	540	16,464	16,132	332	63,358	151
24	14,436	91	18,119	2	500	4,118	2,220	680	1,213		146,219	144,237	1,982	255,902	152
650	338,141	10	6,048			371,684	13,212	12,388	344,484	1,600	6,798,826	6,734,581	64,245	8,232,680	153
265	200,470					69,526	19,270	4,644	45,562	50	6,756,619	6,748,331	8,288	7,485,032	154
195	104,910	41	10,910	8	1,608	86,733	2,803	6,128	77,802		1,108,364	1,081,049	27,315	1,595,017	155
9	5,125					814	365	30	429		11,933	11,723	210	28,800	156

TABLE 7.—MANUFACTURES BY

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
157	Steam packing	8	$46,885			$9,775	$37,110	6	8	$5,553	32	$18,751
158	Stencils and brands	4	7,800			4,800	3,000	4			6	4,540
159	Stereotyping and electrotyping	5	74,700			39,000	35,700	2	5	4,624	46	35,060
160	*Sugar and molasses, beet*	7	9,322,980	$320,869	$1,665,770	6,681,130	655,211		122	117,880	909	480,072
161	Sugar and molasses, refining	6	5,526,682	82,600	1,168,500	1,433,955	2,841,627	1	69	136,411	919	511,535
162	Surgical appliances	10	16,115	400	600	7,140	7,975	11	2	1,386	17	10,662
163	Taxidermy	6	8,300			300	8,000	8			1	250
164	Tinsmithing, coppersmithing, and sheet-iron working.	254	3,249,103	193,100	181,063	786,750	2,088,190	293	121	115,469	2,149	1,086,733
165	Tobacco, cigars and cigarettes	231	755,502	22,050	21,950	47,443	664,059	346	47	54,954	1,235	493,314
166	Tools, not elsewhere specified	11	55,675		5,150	34,410	16,115	12	2	2,100	37	19,742
167	Trunks and valises	12	169,274			13,847	155,427	15	13	11,110	160	70,220
168	Typefounding	3	96,060			65,060	31,000	2	11	10,551	33	17,118
169	Typewriter repairing	6	9,630			1,100	8,530	6	1	600	15	8,940
170	Umbrellas and canes	6	7,630			755	6,875	6			9	5,608
171	Upholstering materials	9	44,950	5,500	1,700	11,600	26,150	11	4	3,900	42	18,639
172	Varnish	3	148,500	42,000	21,000	11,000	74,500	1	6	7,860	14	7,316
173	Vinegar and cider	4	160,992	43,061	14,575	13,950	89,406	4	5	5,150	42	21,113
174	Watch, clock, and jewelry repairing	424	409,401	15,110	13,420	147,617	233,254	456	7	3,813	288	174,223
175	Windmills	6	15,650	4,000	1,350	2,350	7,950	7			23	11,590
176	Window shades	14	29,685	3,100	2,750	4,235	19,600	19	1	720	31	17,206
177	Wirework, including wire rope and cable.	24	372,132	950	350	136,629	234,203	27	30	25,370	218	124,835
178	Wood, turned and carved	29	41,182	3,125	2,125	16,390	19,542	32	2	676	59	30,080
179	Woolen goods	5	1,050,474	90,900	117,935	270,348	571,291	1	18	25,460	430	159,825
180	Wool scouring	6	329,668	40,000	20,000	74,600	195,068	1	9	11,440	230	107,167
181	All other industries[1]	96	10,999,481	1,179,021	1,175,799	2,411,517	6,233,144	91	253	372,932	4,496	2,643,353

[1] Embraces artificial feathers and flowers, 2; artists' materials, 1; axle grease, 1; bags, paper, 2; belting and hose, rubber, 1; blacking, 1; boot and shoe cut stock, 1; calcium lights, 1; card cutting and designing, 1; carpets, wood, 2; cars and general shop construction and repairs by street railroad companies, 2; charcoal, 1; chocolate and cocoa products, 1; cleansing and polishing preparations, 2; clothing, men's, factory product, buttonholes, 1; cordage and twine, 1; cordials and sirups, 2; cork, cutting, 1; cotton goods, 1; cutlery and edge tools, 1; dentists' materials, 2; drug grinding, 1; dye stuffs and extracts, 1; enameling and enameled goods, 2; files, 2; firearms, 1; fireworks, 1; flags and banners, 1; foundry supplies, 1; furs, dressed, 1; gas and oil stoves, 1; glass, 1; gold and silver, leaf and foil, 1; hardware, 2; iron and steel, bolts, nuts, washers, and rivets, 1; iron and steel, doors and shutters, 1; iron and steel, forgings, 2; japanning, 1; jewelry and

TABLE 8.—MANUFACTURES IN CITIES

LOS ANGELES.

1	All industries	1,415	$11,742,838	$1,014,352	$1,214,411	$3,510,617	$6,003,458	1,584	939	$840,855	8,044	$3,992,733
2	Awnings, tents, and sails	4	55,280			8,000	47,280	5	4	4,128	35	16,533
3	Baskets, and rattan and willow ware	3	1,730			835	895	3			4	1,250
4	Bicycle and tricycle repairing	42	30,893	445	875	11,140	18,433	49	1	364	56	22,523
5	Blacksmithing and wheelwrighting	77	47,542	5,750	4,735	13,645	23,412	94			64	35,901
6	Bookbinding and blank book making	3	17,100			8,300	8,800	5	4	4,118	24	9,316
7	Boots and shoes, custom work and repairing.	82	16,082	1,000	325	6,571	8,186	84			16	8,386
8	Bottling	3	18,167	1,000	5,500	1,000	10,667	3	4	2,229	16	7,496
9	Boxes, fancy and paper	4	20,174			13,369	6,805	6	2	720	58	16,453
10	Boxes, wooden packing	4	38,828		5,000	15,528	18,300	2	4	4,120	46	19,393
11	Bread and other bakery products	51	238,533	18,520	20,425	75,700	123,888	59	40	20,517	208	110,554
12	*Brick and tile*	6	169,000	40,000	60,500	28,500	45,000	5	8	7,240	110	43,053
13	Brooms and brushes	4	25,050	800	450	3,690	20,110	3	3	2,580	32	12,835
14	Buttons	3	5,737			225	5,512	4	1	1,200	4	650
15	Carpentering	100	173,815	40,650	20,325	15,201	97,639	114	8	7,360	389	223,838
16	Carriages and wagons	13	49,755	9,000	2,850	9,240	28,665	16			82	36,204
17	Cars and general shop construction and repairs by steam railroad companies.	3	349,111	56,500	106,700	106,576	79,335		21	27,830	537	391,759
18	Cheese, butter, and condensed milk, factory product.	3	37,150	1,200	4,750	22,200	9,000	3	8	6,300	24	13,020
19	China decorating	5	4,586			181	4,405	6				
20	Clothing, men's, custom work and repairing.	98	194,257	1,000	450	8,430	184,377	115	16	14,485	405	219,446
21	Clothing, men's, factory product	9	20,261			8,630	11,631	17	6	4,440	155	39,500
22	Clothing, women's, dressmaking	64	37,682	215	600	7,232	29,635	66	4	2,655	244	84,672
23	Coffee and spice, roasting and grinding	8	112,092	1,000	2,700	9,250	99,142	9	8	6,380	21	9,348
24	Confectionery	23	294,277			77,184	217,093	31	45	42,961	223	74,281
25	Cooperage	3	48,375			3,375	45,000	4	1	600	31	19,344
26	Dyeing and cleaning	15	20,759	600	3,000	10,895	6,264	16	15	7,630	59	22,849
27	Electrical apparatus and supplies	3	55,774		965	23,582	31,227	1	11	13,370	35	29,106
28	*Electrical construction and repairs*	10	31,420			8,496	22,924	10	5	3,960	53	30,943
29	Flouring and grist mill products	10	607,049	102,400	105,000	75,992	323,657	5	31	41,234	79	40,793
30	Food preparations	7	30,640	2,600	4,900	5,675	17,465	10	3	175	14	3,674
31	Foundry and machine shop products	34	1,021,034	76,891	51,992	285,143	607,008	35	77	69,820	552	359,920
32	Fruits and vegetables, canning and preserving.	3	148,000	43,000	28,000	12,000	65,000	3	5	6,600	322	76,500
33	Furniture, cabinetmaking, repairing, and upholstering.	36	23,200			8,935	14,265	40			72	46,692
34	Furniture, factory product	8	106,081	5,700	6,000	19,000	75,381	9	19	7,429	105	47,381
35	Gas and lamp fixtures	5	66,096	3,600	8,400	12,112	41,984	3	8	10,120	52	33,957
36	Hairwork	5	9,000			1,200	7,800	6	1	312	29	8,295

SPECIFIED INDUSTRIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
31	$18,451			1	$300	$3,574	$1,751	$132	$1,691		$41,637	$40,119	$1,518	$88,820	157
6	4,540					672	600	14	58		3,684	3,684		17,000	158
31	25,644	14	$9,208	1	208	7,281	3,140	194	3,947		13,878	11,263	2,615	92,937	159
903	477,306	3	1,565	3	1,201	159,482		48,153	111,329		2,243,580	1,990,395	253,185	3,499,996	160
899	506,885	9	1,910	11	2,740	404,682	55,785	22,778	326,119		14,888,126	14,608,098	280,028	15,909,998	161
12	9,277	4	1,260	1	125	8,702	2,736	77	5,889		14,330	14,098	232	52,414	162
1	250					1,022	914	32	76		1,000	999	1	5,246	163
1,644	971,329	365	78,336	140	37,068	237,768	81,669	10,313	141,086	$4,730	3,994,673	3,938,331	56,342	6,279,513	164
1,067	448,400	142	40,018	26	4,896	302,783	49,331	4,683	247,569	1,200	741,019	739,689	1,330	1,887,561	165
37	19,742					5,648	4,546	161	641	300	22,104	15,693	6,411	103,720	166
114	55,533	18	6,907	28	7,780	22,565	3,800	572	13,193		114,561	113,661	900	274,633	167
20	13,001	13	4,112			5,889	3,000	241	2,648		21,473	20,221	1,252	65,095	168
15	8,940					2,504	1,416	18	370	700	5,532	5,532		22,520	169
7	4,734	2	874			3,755	3,180	58	517		15,174	15,172	2	40,390	170
25	9,477	10	2,796	7	1,366	4,780	2,995	210	1,075	500	25,586	24,116	1,470	73,910	171
14	7,316					4,850	120	380	4,350		88,900	88,185	715	130,805	172
28	14,914	14	6,199			3,685	625	646	2,414		54,216	52,061	2,155	95,912	173
272	170,167	8	2,020	8	2,036	98,719	74,959	3,279	17,104	3,377	185,898	182,744	3,154	787,609	174
23	11,590					1,451	624	102	725		31,800	31,300	500	55,850	175
25	15,267	5	1,739	1	200	3,992	3,189	237	566		98,141	97,581	560	146,306	176
212	123,425	1	150	5	1,260	24,001	11,246	749	11,006	1,000	513,407	508,075	5,332	882,564	177
50	27,712	6	1,600	3	768	6,879	4,631	168	1,218	862	20,784	18,940	1,844	90,482	178
264	113,826	147	43,012	19	2,987	78,261		4,417	73,844		409,445	390,512	18,933	687,354	179
189	93,375	41	13,792			45,276	9,920	14,862	20,494		53,354	42,974	10,380	293,200	180
3,918	2,493,964	364	110,233	219	39,156	657,886	42,806	30,041	330,910	254,129	35,077,550	34,615,400	462,150	39,257,929	181

instrument cases, 1; jute and jute goods, 1; labels and tags, 1; lapidary work, 2; lasts, 2; lead, smelting and refining, 1; oakum, 1; oil, essential, 2; oil, linseed, 1; paper and wood pulp, 2; pens, gold, 1; photographic apparatus, 1; photographic materials, 2; printing materials, 1; pumps, not including steam pumps, 1; regalia and society banners and emblems, 1; rice, cleaning and polishing, 1; scales and balances, 2; shipbuilding, iron and steel, 2; smelting and refining, not from the ore, 2; sporting goods, 2; springs, steel, car and carriage, 1; stamped ware, 1; starch, 2; stationery goods, not elsewhere specified, 2; tobacco, chewing, smoking, and snuff, 1; toys and games, 1; vault lights and ventilators, 1; washing machines and clothes wringers, 2; whips, 1; wood, preserving, 2; woodenware, not elsewhere specified, 1; wool pulling, 2.

BY SPECIFIED INDUSTRIES: 1900.

LOS ANGELES.

6,380	$3,576,618	1,465	$381,042	190	$35,073	$1,513,393	$346,858	$63,197	$792,341	$311,002	$10,572,660	$10,290,368	$282,292	$21,297,537	1
16	11,339	17	4,752	2	442	5,831	3,060	207	2,564		73,559	73,329	230	124,316	2
2	750	2	500			212	172	10	30		1,183	1,033	150	4,515	3
51	21,895	1	320	4	308	10,399	6,949	229	3,221		32,588	31,688	900	110,497	4
63	35,601			1	300	14,247	10,890	364	2,811	182	55,663	49,467	6,196	191,726	5
11	6,244	12	3,000	1	72	3,103	1,029	64	2,010		9,898	9,657	241	36,712	6
16	8,386					9,233	8,284	66	521	362	22,427	22,309	118	79,578	7
16	7,496					5,466	3,340	106	2,020		29,690	29,130	560	54,004	8
14	7,354	42	8,829	2	270	2,608	1,944	88	576		18,800	18,544	256	52,855	9
39	17,601	5	1,560	2	232	3,134	990	103	2,041		44,039	43,379	660	88,468	10
180	101,803	27	8,287	1	464	39,790	22,478	965	16,272	75	330,819	315,892	14,927	660,212	11
102	41,159			8	1,894	4,918	468	890	3,560		21,143	2,283	18,860	111,177	12
30	12,211			2	624	2,014	982	195	837		33,772	33,488	284	56,979	13
		2	336	2	314	963	481	50	432		1,499	1,485	14	5,870	14
385	222,908			4	930	185,739	3,323	1,716	10,198	170,502	749,585	749,126	459	1,458,212	15
78	35,556			4	648	7,343	4,748	302	2,293		57,651	55,802	1,849	133,772	16
530	389,181	7	2,578			15,739		5,814	9,925		280,029	277,114	2,915	715,357	17
24	13,020					2,855	1,030	165	1,660		205,841	203,401	2,440	249,833	18
						371	330	4	37		603	557	46	9,031	19
334	197,159	67	21,505	4	782	67,623	39,960	1,286	11,955	14,422	247,435	243,038	4,397	740,011	20
11	3,900	142	35,400	2	200	6,147	1,476	782	3,089	800	215,480	214,737	743	322,121	21
32	16,414	212	68,258			17,979	15,581	270	2,128		91,860	90,223	1,637	277,839	22
16	8,038	4	1,110	1	200	10,079	3,505	755	5,819		181,396	179,060	2,336	245,389	23
92	53,690	127	19,951	4	640	35,404	21,830	1,130	12,444		372,470	361,744	10,726	696,272	24
31	19,344					5,456	1,088	82	1,286	3,000	71,315	71,225	120	133,230	25
30	14,216	27	8,167	2	466	13,844	5,116	118	8,094	516	14,363	13,161	1,202	85,059	26
35	29,106					2,915	1,142	46	1,727		16,417	14,802	1,615	66,982	27
50	29,715	1	316	2	912	3,860	1,924	166	1,770		120,155	119,545	610	266,074	28
73	39,693	1	200	5	900	27,137	1,575	4,932	20,630		1,022,483	1,006,257	16,226	1,223,391	29
8	2,484	4	1,040	2	150	2,280	782	351	1,147		35,887	34,671	1,216	55,981	30
549	358,887	1	624	2	409	106,259	9,300	2,929	43,130	50,900	770,371	746,123	24,248	1,545,406	31
45	19,600	262	54,600	15	2,800	14,706		390	14,316		297,623	294,532	3,091	423,000	32
64	43,089	8	3,603			9,675	6,658	300	2,397	320	41,486	41,210	276	132,158	33
93	43,261	9	3,120	3	1,000	12,534	4,230	802	7,002	500	125,555	124,109	1,446	230,472	34
52	33,957					13,257	1,630	495	11,132		37,841	36,562	1,279	123,214	35
1	780	28	7,515			3,367	2,352	73	942		6,862	6,202	160	26,515	36

TABLE 8.—MANUFACTURES IN CITIES

LOS ANGELES—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
37	Jewelry	6	$55,950		$25	$10,375	$45,550	8	3	$2,660	25	$14,828
38	Leather goods	8	47,975		125	5,435	42,415	10	9	9,610	83	24,163
39	Lime and cement	3	137,892	$35,000	40,000	10,720	52,172	4	3	5,100	56	45,300
40	Liquors, vinous	16	196,512	20,650	23,500	27,650	124,712	17	4	1,700	46	17,798
41	Lock and gun smithing	11	17,655	300	400	4,375	12,580	10	4	1,610	7	4,620
42	Looking-glass and picture frames	11	33,710	10,000	3,000	1,960	18,750	12			16	9,134
43	Lumber, planing mill products, including sash, doors, and blinds.	20	787,081	48,000	36,422	119,772	582,887	19	42	41,258	303	158,552
44	Masonry, brick and stone	15	27,350		600	10,800	15,950	17	4	2,150	155	79,258
45	Millinery, custom work	19	86,153			503	85,650	24	64	24,057	113	37,686
46	Mineral and soda waters	5	51,950	8,350	4,600	20,500	18,500	6	7	5,620	28	13,348
47	Monuments and tombstones	6	26,657	5,000	1,100	2,260	18,297	7	3	3,770	26	15,440
48	Optical goods	4	12,155			3,530	8,625	6			10	6,400
49	Painting, house, sign, etc	45	23,347	4,275	2,225	6,470	10,377	48			91	58,450
50	Paper hanging	10	32,230			2,005	30,225	13			44	20,170
51	Paving and paving materials	15	322,175	8,000	28,750	67,250	218,175	12	49	64,214	645	235,965
52	Patent medicines and compounds	16	42,810	950	850	3,835	37,175	17	13	8,318	28	11,644
53	Perfumery and cosmetics	5	36,623		5,000	5,600	26,023	10	4	3,750	25	11,825
54	Photography	31	112,570	1,600	3,775	37,560	69,635	37	20	11,071	93	35,723
55	Photolithographing and photoengraving.	5	20,199			9,749	10,450	7	2	1,196	10	4,706
56	Pickles, preserves, and sauces	5	84,182	4,800	7,400	19,900	52,082	5	14	11,900	48	11,640
57	Plastering and stuccowork	13	38,405	7,300	8,000	10,080	13,025	14			44	37,088
58	Plumbing, and gas and steam fitting	48	160,901	31,600	15,150	15,559	98,592	63	7	4,880	139	94,354
59	Pottery, terra cotta, and fire-clay products.	7	295,039	33,779	80,090	66,902	114,268	6	9	10,560	57	31,959
60	Printing and publishing, book and job	47	182,626	250	250	118,324	63,802	61	18	18,158	230	114,143
61	Printing and publishing, newspapers and periodicals.	40	709,255	68,700	84,680	285,804	270,071	40	84	81,362	191	136,803
62	Saddlery and harness	24	39,612	14,150	3,350	7,862	14,250	24	3	1,400	52	20,807
63	Shirts	5	8,875			1,175	7,700	6	5	4,380	30	5,044
64	Soap and candles	5	250,845	25,500	61,000	37,170	126,675	7	11	14,340	30	16,620
65	Tinsmithing, coppersmithing, and sheet-iron working.	26	419,535	44,900	25,225	132,850	216,560	30	12	15,021	299	117,586
66	Tobacco, cigars and cigarettes	13	24,402	3,000	2,100	1,005	18,297	13	1	1,100	35	22,317
67	Tools, not elsewhere specified	4	9,550		150	6,200	3,200	4			9	4,022
68	Trunks and valises	3	17,674			447	17,227	3	1	800	19	8,339
69	Watch, clock, and jewelry repairing	56	58,854			16,430	42,424	60	2	2,400	51	27,838
70	Wirework, including wire rope and cable.	3	3,925			1,075	2,850	4			6	3,836
71	Wood, turned and carved	8	5,040			1,935	3,105	8	2	676	11	5,664
72	All other industries [1]	106	3,239,094	226,377	332,202	1,525,518	1,154,997	111	176	166,417	833	414,298

[1] Embraces agricultural implements, 1; artificial limbs, 1; axle grease, 1; baking and yeast powders, 2; bicycles and tricycles, 2; boots and shoes, factory product, 2; boxes, cigar, 2; brass castings and brass finishing, 2; carpets, rag, 2; carpets, wood, 2; carriage and wagon materials, 1; clothing, women's, factory product, 2; coffins, burial cases, and undertakers' goods, 1; cordials and sirups, 1; dentists' materials, 1; electroplating, 2; enameling and enameled goods, 1; engraving and diesinking, 2; engraving, steel, including plate printing, 1; fancy articles, not elsewhere specified, 1; fertilizers, 2; fish, canning and preserving, 1; flavoring extracts, 1; fur goods, 2; furnishing goods, men's, 2; gas, illuminating and heating, 1; gas and oil stoves, 1; glass, cutting, staining, and ornamenting, 2; hand knit goods, 1; hand stamps, 2; hats and caps, not including fur hats and wool hats, 1; house furnishing goods, not elsewhere specified, 1; ice, artificial, 2; ink, printing, 1; instruments, professional and scientific, 1; ironwork, architectural and ornamental, 1; kaolin and other earth grinding, 1; lamps and reflectors, 1;

OAKLAND.

1	All industries	752	$6,364,651	$665,260	$593,405	$2,617,063	$2,488,923	830	347	$319,263	4,012	$2,129,598
2	Awnings, tents, and sails	3	5,500	100	100	1,100	4,200	4			3	1,712
3	Bicycle and tricycle repairing	17	26,312	750	250	8,850	16,462	19	1	800	26	13,952
4	Blacksmithing and wheelwrighting	42	52,630	20,100	9,150	10,335	13,045	49			34	19,221
5	Boots and shoes, custom work and repairing.	90	29,492	4,710	4,050	9,650	11,082	89			29	12,322
6	Bottling	5	14,100		1,500	6,200	6,400	6	10	8,716	15	9,454
7	Bread and other bakery products	32	111,114	28,200	30,700	25,005	27,209	39	16	7,516	136	77,518
8	Carpentering	49	194,925	23,950	18,940	21,240	130,795	55	6	5,284	229	180,968
9	Carriages and wagons	16	75,915	21,200	15,050	8,325	31,340	18			59	32,555
10	Cheese, butter, and condensed milk, factory product.	4	5,475		500	4,150	825	4			4	2,620
11	Clothing, men's, custom work and repairing.	40	69,157	450	2,275	5,265	61,167	43	8	9,600	165	92,176
12	Clothing, men's, factory product	3	100,170	7,500		11,570	81,100	2	19	15,495	133	43,750
13	Clothing, women's, dressmaking	37	18,780	850	2,830	5,660	9,440	41			82	24,420
14	Clothing, women's, factory product	5	7,260			1,710	5,550	9	3	800	20	7,900
15	Confectionery	17	26,514	2,500	5,000	8,083	10,931	19	10	2,428	50	22,778
16	Dyeing and cleaning	5	6,020			5,020	1,000	5			8	3,650
17	Electrical construction and repairs	3	2,640	1,000	250	775	615	3			4	2,250
18	Flouring and grist mill products	3	75,898	21,000	16,000	15,000	23,898	1	4	2,500	31	23,360
19	Foundry and machine shop products	12	326,276	32,500	32,585	100,048	161,143	11	20	21,809	230	120,501
20	Furniture, cabinetmaking, repairing, and upholstering.	23	12,690	2,125	700	4,345	5,520	27			10	6,391
21	Liquors, malt	3	132,695	18,500	46,900	33,600	33,695	3	6	7,920	17	16,556

BY SPECIFIED INDUSTRIES: 1900—Continued.

LOS ANGELES—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.				
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.	Value of products, including custom work and repairing.	
23	$14,618			2	$210	$4,435	$2,146	$194	$2,095		$49,235	$48,722	$513	$101,050	37
44	16,951	39	$7,212			4,366	2,012	212	2,142		20,525	20,358	167	89,170	38
56	45,300					4,368	100	435	1,833	$2,500	36,694	15,481	21,213	107,298	39
46	17,798					13,815	2,428	1,196	10,191		89,116	87,166	1,950	136,016	40
7	4,620					2,502	1,936	102	464		7,575	6,961	614	31,240	41
16	9,134					3,891	3,063	154	674		20,005	19,841	164	49,200	42
303	153,552					21,384	7,630	2,638	9,856	1,260	446,177	442,606	3,571	823,441	43
155	79,258					7,969	940	104	3,925	3,000	107,315	106,415	900	267,549	44
3	2,604	100	32,462	10	2,620	35,590	28,625	836	6,129		115,146	114,099	1,047	265,697	45
26	17,868			2	480	4,400	720	210	3,470		45,469	44,329	1,140	94,598	46
26	15,440					2,250	1,520	124	431	175	27,034	26,758	276	61,508	47
8	5,780	1	480	1	140	3,959	1,850	94	1,415	600	10,029	9,857	172	31,597	48
90	58,320			1	130	4,409	2,907	90	1,412		72,485	72,470	15	185,130	49
44	20,170					19,711	3,344	267	2,100	14,000	38,492	38,480	12	107,900	50
645	235,965					9,832	567	214	8,551		246,823	243,703	3,120	705,195	51
20	10,004	6	1,132	2	508	16,260	3,993	244	12,023		31,014	30,762	252	91,657	52
13	6,600	12	4,725			11,240	550	43	10,647		23,196	22,941	255	62,652	53
61	27,038	30	8,347	2	338	23,542	12,251	432	8,110	2,749	62,343	61,402	941	205,883	54
8	4,214	1	270	1	222	1,257	861	57	339		5,792	5,518	274	22,000	55
19	7,430	28	4,090	1	120	4,125	1,134	181	2,810		85,117	83,890	1,227	134,143	56
44	37,088					3,552	450	196	576	2,330	50,501	50,378	123	114,850	57
138	94,162			1	192	14,344	6,407	937	4,700	2,300	239,656	237,238	2,418	461,900	58
55	31,220			2	739	7,952	185	1,124	6,643		48,093	25,828	22,265	104,706	59
188	102,262	26	9,072	16	2,809	30,807	12,661	895	18,789	3,462	106,470	102,741	3,729	391,370	60
164	128,631	18	6,520	9	1,652	88,214	9,993	2,926	41,279	34,016	163,529	156,875	6,654	813,404	61
46	19,402	5	1,225	1	180	5,248	3,324	406	1,194	324	42,900	42,514	386	89,163	62
		30	5,044			2,143	871	5	967	300	11,907	11,842	65	35,451	63
24	14,300	6	2,320			14,027	252	1,133	12,642		141,279	138,788	2,491	192,657	64
244	105,684	40	8,626	15	3,276	20,125	3,076	1,599	15,450		440,685	436,578	4,107	725,198	65
30	20,763	4	1,500	1	54	7,519	1,735	136	5,648		18,216	18,216		59,005	66
9	4,022					654	460	30	164		5,899	4,725	1,174	18,100	67
19	8,339					6,630	3,600	246	2,784		11,480	11,480		36,683	68
50	27,718			1	120	12,816	8,670	286	3,755	105	26,889	26,329	560	125,215	69
6	3,836					627	334	36	257		4,499	4,494	5	12,420	70
10	5,456			1	208	2,201	1,424	36	579	162	2,256	2,064	192	15,460	71
676	375,234	111	32,446	46	6,618	431,242	26,187	19,134	383,781	2,140	2,081,501	2,003,634	77,867	3,792,812	72

lapidary work, 1; liquors, malt, 2; lithographing and engraving, 2; marble and stone work, 1; mattresses and spring beds, 2; millinery and lace goods, 1; models and patterns, 2; mucilage and paste, 1; musical instruments and materials, not specified, 2; musical instruments, organs and materials, 1; oil, not elsewhere specified, 1; paints, 1; paper goods, not elsewhere specified, 2; petroleum, refining, 1; photographic materials, 1; pipes, tobacco, 1; plumbers' supplies, 1; pumps, not including steam pumps, 1; regalia and society banners and emblems, 1; roofing and roofing materials, 2; salt, 1; sewing machine repairing, 2; shoddy, 1; show cases, 2; slaughtering and meat packing, wholesale, 1; stamped ware, 1; steam fittings and heating apparatus, 1; steam packing, 1; sugar and molasses, refining, 1; surgical appliances, 2; taxidermy, 2; typewriter repairing, 2; umbrellas and canes, 2; upholstering materials, 1; vinegar and cider, 1; whips, 1; window shades, 2; wool pulling, 1.

OAKLAND.

2,928	$1,818,018	919	$280,722	165	$30,858	$620,459	$144,220	$34,555	$290,928	$150,756	$4,277,647	$4,129,441	$148,206	$9,174,257	1
2	1,460	1	252			442	240	13	189		4,933	4,933		16,535	2
25	13,812			1	150	4,880	3,451	137	1,267	25	15,487	14,806	681	60,687	3
33	18,909			1	312	6,310	5,283	297	720	60	27,125	24,847	2,278	105,123	4
28	12,212			1	110	8,403	7,890	99	414		28,576	28,405	171	98,328	5
15	9,454					4,960	2,300	100	2,560		101,719	101,264	455	149,056	6
109	68,515	27	9,003			17,630	10,626	694	6,310		197,263	182,873	14,390	362,192	7
229	130,968					144,210	5,591	588	10,956	127,075	312,303	311,529	774	776,042	8
58	32,395			1	160	3,600	2,197	405	698	300	38,638	37,428	1,210	111,560	9
4	2,620					1,830	1,105	55	670		42,497	41,707	790	51,965	10
100	68,003	65	24,178			14,848	10,647	340	3,861		118,277	116,755	1,522	320,569	11
63	27,150	66	15,600	4	1,000	29,173	4,158		25,015		101,045	98,045	3,000	204,525	12
4	3,160	75	20,835	3	425	5,996	5,430	67	499		27,705	27,295	410	89,766	13
6	1,800	14	6,100			1,656	1,269	67	320		9,445	9,370	75	30,500	14
30	17,254	19	5,302	1	222	6,142	5,202	129	811		29,254	27,750	1,504	99,210	15
5	2,270	3	1,380			1,061	880	26	155		2,460	1,810	650	11,100	16
3	2,000			1	250	385	264	10	111		2,400	2,400		6,850	17
31	23,360					2,569	36	894	1,639		143,828	140,303	3,525	207,915	18
229	120,351			1	150	11,190	2,675	1,248	6,917	350	186,835	157,737	29,098	399,416	19
9	6,235			1	156	3,492	3,034	79	329	50	10,695	10,590	105	33,630	20
17	16,556					55,519		705	54,814		36,258	32,758	3,500	133,371	21

TABLE 8.—MANUFACTURES IN CITIES

OAKLAND—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
22	Lock and gun smithing	9	$4,325	$150	$150	$2,400	$1,625	12			4	$2,100
23	Looking-glass and picture frames	5	7,495			1,045	6,450	5			7	3,590
24	Lumber, planing mill products, including sash, doors, and blinds.	13	560,768	52,407	58,801	167,208	282,352	19	20	$24,980	342	194,735
25	Masonry, brick and stone	4	5,090	100	100	285	4,605	5			4	2,250
26	Mattresses and spring beds	3	15,350	3,000	6,000	2,050	4,300	7			17	8,504
27	Millinery, custom work	17	36,534	50	50	2,520	33,914	20	6	4,260	74	19,587
28	Monuments and tombstones	4	43,250	7,100	2,000	1,900	32,250	3	3	3,000	16	14,500
29	Painting, house, sign, etc	46	88,920	22,300	12,600	10,790	43,230	56	4	2,430	152	106,554
30	Paper hanging	6	19,400			1,708	17,692	6	1	360	43	27,621
31	Paving and paving materials	8	166,700	25,500	12,000	18,850	110,350	9	18	16,285	201	97,443
32	Photography	15	28,475		100	7,500	20,875	18	2	1,300	34	13,326
33	Pickles, preserves, and sauces	3	7,670	4,200	1,200	1,000	1,270	6	1	420	7	1,876
34	Plastering and stuccowork	4	2,450			1,350	1,100	4			6	3,280
35	Plumbing, and gas and steam fitting	39	133,885	27,000	16,350	15,295	75,240	46	4	3,370	119	80,713
36	Printing and publishing, book and job	16	47,295		300	39,050	7,945	19	5	3,800	43	17,839
37	Printing and publishing, newspapers and periodicals.	10	545,804	33,800	54,500	192,958	264,546	7	62	46,998	231	109,788
38	Saddlery and harness	11	26,175		700	4,525	20,950	13			13	3,201
39	Tinsmithing, coppersmithing, and sheet-iron working.	13	35,740	1,300	2,525	10,815	21,100	13			32	22,214
40	Tobacco, cigars and cigarettes	12	19,237			880	18,357	13			16	8,516
41	Watch, clock, and jewelry repairing	31	18,030			10,325	7,705	29			25	16,740
42	All other industries[1]	74	3,258,495	302,918	239,249	1,838,678	877,650	73	118	129,192	1,341	656,157

[1] Embraces ammunition, 1; artificial limbs, 1; baking and yeast powders, 1; baskets, and rattan and willow ware, 2; boot and shoe uppers, 1; boxes, wooden packing, 1; brass castings and brass finishing, 1; bridges, 2; carpets, rag, 2; cars and general shop construction and repairs by street railroad companies, 1; china decorating, 1; coffee and spice, roasting and grinding, 2; coffins, burial cases, and undertakers' goods, 1; corsets, 2; cotton goods, 1; electrical apparatus and supplies, 1; fertilizers, 1; flavoring extracts, 1; food preparations, 2; fruits and vegetables, canning and preserving, 1; fur goods, 1; gas, illuminating and heating, 1; gas machines and meters, 1; glass, cutting, staining, and ornamenting, 2; gloves and mittens, 1; grease and tallow, 1; hairwork, 2; instruments, professional and

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1	All industries	279	$7,492,313	$660,711	$1,416,947	$2,628,476	$2,786,179	322	189	$217,584	4,393	$2,992,444
2	Bicycle and tricycle repairing	5	17,240	1,000	1,500	2,550	12,190	7			8	3,670
3	Blacksmithing and wheelwrighting	20	41,215	14,300	5,850	6,335	14,730	24			37	26,067
4	Boots and shoes, custom work and repairing.	8	3,440			1,650	1,790	8			10	6,402
5	Bread and other bakery products	12	72,455	9,900	14,000	18,455	30,100	19	7	3,266	88	59,399
6	Carpentering	15	130,825	18,900	46,725	19,550	45,650	19	1	1,200	165	142,640
7	Carriages and wagons	5	102,357	25,500	12,300	12,775	51,782	4	3	3,912	58	35,280
8	Clothing, men's, custom work and repairing.	12	39,625	7,000	10,000	1,175	21,450	15			64	46,768
9	Clothing, women's, dressmaking	12	1,705			675	1,030	13	1	1,044	49	14,549
10	Coffee and spice, roasting and grinding	3	21,250	6,000	2,000	3,150	10,100	4	1	1,200	3	1,236
11	Confectionery	7	82,000	6,750	4,000	17,450	53,800	6	4	3,995	74	30,268
12	Dyeing and cleaning	4	2,750	1,000	1,000	250	500	5			4	2,430
13	Flouring and grist mill products	3	515,250	78,000	78,000	113,000	246,250	1	20	26,650	62	55,862
14	Foundry and machine shop products	6	88,100	7,500	7,500	41,600	31,500	9	2	2,400	96	65,945
15	Furniture, factory product	3	42,200	2,300	1,100	13,800	25,000	4	3	1,980	48	28,685
16	Lock and gun smithing	6	11,400	1,000	2,500	2,800	5,100	9			3	2,100
17	Lumber, planing mill products, including sash, doors, and blinds.	3	25,800		1,800	15,000	9,000	6			26	18,640
18	Masonry, brick and stone	3	11,000			1,400	9,600	4			38	23,350
19	Millinery, custom work	5	42,030			1,830	40,200	3	9	5,014	40	16,081
20	Mineral and soda waters	5	58,950	12,500	12,500	12,400	21,550	9			32	15,100
21	Painting, house, sign, etc	17	32,445	3,100	6,000	4,545	18,800	20	2	2,400	79	60,755
22	Patent medicines and compounds	3	5,600			2,000	3,600	3			4	2,640
23	Paving and paving materials	4	11,250	1,650	300	2,450	6,850	4			22	10,430
24	Photography	5	11,150			5,500	5,650	5			12	6,914
25	Plastering and stuccowork	3	4,800	1,200	500	850	2,250	3			23	17,648
26	Plumbing, and gas and steam fitting	12	42,400	2,000	3,500	5,850	31,050	13			49	29,884
27	Printing and publishing, book and job	5	52,062			32,662	19,400	5	3	3,000	27	22,247
28	Printing and publishing, newspapers and periodicals.	7	113,500	8,000	10,000	72,500	23,000	10	30	43,348	80	59,544
29	Saddlery and harness	8	156,900	32,500	74,000	12,200	38,200	8	8	3,984	69	38,682
30	Slaughtering and meat packing, wholesale.	3	245,500	48,500	80,000	49,000	68,000	2	9	9,430	43	34,260
31	Slaughtering, wholesale, not including meat packing.	4	123,300	10,600	17,700	12,600	82,400	6	1	1,080	28	14,680
32	Tinsmithing, coppersmithing, and sheet-iron working.	6	29,700	4,000	6,000	7,700	12,000	7			23	18,507
33	Tobacco, cigars and cigarettes	8	18,213			430	17,783	13	2	1,200	21	11,880
34	Watch, clock, and jewelry repairing	8	10,975	500	1,200	3,375	5,900	9			9	8,275
35	All other industries[1]	49	5,324,926	357,011	1,016,972	2,130,969	1,819,974	45	83	102,481	2,999	2,061,676

[1] Embraces awnings, tents, and sails, 1; baskets, and rattan and willow ware, 1; bookbinding and blank book making, 1; bottling, 1; boxes, wooden packing, 1; brass castings and brass finishing, 1; brick and tile, 1; brooms and brushes, 2; carriage and wagon materials, 2; cars and general shop construction and repairs by steam railroad companies, 1; clothing, men's, factory product, 1; cooperage, 1; electrical apparatus and supplies, 1; electrical construction and repairs, 2; engraving, wood, 1; fancy articles, not elsewhere specified, 1; food preparations, 2; fruits and vegetables, canning and preserving, 1; furniture, cabinetmaking, repairing, and

BY SPECIFIED INDUSTRIES: 1900—Continued.

OAKLAND—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
3	$1,860			1	$240	$1,588	$1,382	$91	$115		$2,116	$1,968	$148	$11,920	22
7	3,590					1,097	840	22	235		9,812	9,770	42	21,650	23
316	188,629			26	6,106	17,981	3,574	1,552	11,355	$1,500	423,632	420,682	2,950	732,685	24
4	2,250					639	252	30	357		7,365	7,365		13,120	25
14	7,620	2	$676	1	208	1,032	492	220	320		21,810	21,730	80	42,252	26
		72	19,469	2	118	10,769	9,570	232	967		56,790	56,650	140	148,412	27
16	14,500					1,215	180	175	860		18,647	18,597	50	45,980	28
148	105,912			4	642	9,457	5,715	446	2,796	500	90,865	90,626	239	277,700	29
43	27,621					2,130	1,680	151	299		22,067	22,055	12	63,325	30
201	97,443					12,902	3,204	898	6,400	2,400	77,671	73,638	4,033	257,648	31
16	7,770	17	5,838	1	218	14,030	5,892	57	7,931	150	28,382	28,190	192	126,345	32
3	1,200	2	420	2	256	621	120	41	460		10,115	10,020	95	18,170	33
6	3,280					535	504	21	10		3,165	3,048	117	9,050	34
115	80,109			4	604	9,796	5,410	737	2,649	1,000	248,606	247,194	1,412	420,744	35
30	14,711	10	2,641	3	487	5,200	3,142	193	1,665	200	19,454	18,428	1,026	69,009	36
168	90,534	60	17,944	8	1,310	38,688	4,300	2,409	31,612	367	97,903	92,365	5,538	480,836	37
13	8,201					3,125	2,596	150	379		22,847	22,819	28	48,353	38
31	22,098			1	116	3,283	2,244	170	869		30,801	30,459	342	73,477	39
16	8,516					5,906	2,252	74	3,580		13,332	13,322	10	40,471	40
24	16,620			1	120	7,072	5,496	53	823	700	11,762	11,327	435	61,165	41
759	487,070	486	151,589	96	17,498	149,097	13,147	20,880	98,991	16,079	1,623,762	1,556,583	67,179	2,943,605	42

scientific, 1; ironwork, architectural and ornamental, 2; jewelry, 1; jute and jute goods, 1; marble and stone work, 2; matches, 1; millinery and lace goods, 1; mineral and soda waters, 2; musical instruments, organs and materials, 1; paints, 1; paper goods, not elsewhere specified, 1; photographic materials, 1; plumbers' supplies, 1; pottery, terra cotta, and fire-clay products, 2; roofing and roofing materials, 2; sewing machine repairing, 2; ship and boat building, wooden, 2; shirts, 1; shoddy, 1; soap and candles, 1; steam packing, 1; trunks and valises, 1; umbrellas and canes, 1; upholstering materials, 2; washing machines and clothes wringers, 1; windmills, 2; window shades, 1; wirework, including wire rope and cable, 1; wood, turned and carved, 2.

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3,982	$2,870,093	380	$116,174	31	$6,177	$709,812	$69,328	$66,950	$458,418	$115,116	$6,648,357	$6,355,476	$292,881	$11,785,621	1
8	3,670					1,412	1,192	145	75		3,570	3,315	255	12,350	2
37	26,067					5,547	4,127	596	824		21,985	20,015	1,970	81,973	3
10	6,402					1,889	1,583	31	275		5,645	5,635	10	20,288	4
81	56,751	2	980	5	1,668	12,986	5,706	818	6,462		117,868	111,634	5,734	271,990	5
165	142,640					123,442	1,524	2,393	7,525	112,000	313,768	312,908	860	667,300	6
53	34,590			5	780	4,553	600	1,848	2,105		54,310	52,483	1,827	113,745	7
54	41,980	10	4,788			7,679	5,340	591	1,748		38,980	38,790	140	120,990	8
1	600	48	13,949			2,760	1,950	15	795		2,710	2,630	80	28,350	9
2	1,080			1	156	1,667	900	372	395		22,795	21,970	825	35,650	10
42	20,444	32	9,824			7,544	2,320	479	4,745		70,350	68,895	1,455	98,810	11
4	2,430					345	315	30			640	450	190	6,450	12
62	55,862					17,583	660	3,868	13,055		946,571	928,937	17,634	1,128,536	13
96	65,945					22,253	1,900	685	19,668		206,410	199,596	6,814	342,843	14
46	28,040	1	420	1	225	5,662	2,720	702	2,240		45,010	43,820	1,190	101,044	15
3	2,100					1,277	825	107	345		5,430	5,282	148	20,580	16
26	18,640					1,655	532	141	982		20,718	19,790	928	52,500	17
38	23,350					1,024	190	64	770		29,900	29,900		73,450	18
1	480	39	15,601			4,264	2,502	147	1,615		36,116	35,966	150	72,400	19
28	13,900	4	1,200			3,750	1,200	2,200	350		74,910	74,045	865	132,200	20
78	60,605			1	150	6,691	2,461	234	3,996		33,541	33,541		141,050	21
4	2,640					2,062	960	82	1,020		5,004	4,759	245	12,300	22
22	10,430					2,068		88	1,480	500	15,580	15,580		43,900	23
6	4,110	6	2,804			3,799	2,820	99	880		11,750	11,700	50	33,500	24
23	17,648					1,087	100	67	920		25,185	25,185		50,650	25
46	29,258			3	626	4,094	2,579	223	1,292		67,315	66,430	885	121,420	26
26	22,047			1	200	5,083	2,672	299	1,362	750	12,721	12,026	695	54,391	27
69	56,590	3	1,500	8	1,454	15,935	2,880	811	12,028	216	36,410	34,333	2,077	221,916	28
69	38,682					8,618	1,590	3,622	3,406		239,870	239,270	600	313,370	29
43	34,260					23,253	600	1,993	19,060	1,600	204,440	197,125	7,315	293,130	30
28	14,680					5,890	3,000	1,135	1,705	50	590,520	588,370	2,150	643,725	31
23	18,507					2,517	1,176	509	832		22,709	22,296	413	58,439	32
17	11,104	1	208	3	518	8,072	2,268	341	5,463		22,563	22,563		55,858	33
9	8,275					2,171	1,104	143	924		6,141	5,980	161	25,700	34
2,762	1,996,376	234	64,900	3	400	391,180	9,032	42,072	340,076		3,337,472	3,100,257	237,215	6,334,823	35

upholstering, 2; gas, illuminating and heating, 1; gas machines and meters, 1; glue, 1; hand stamps, 2; iron and steel, 1; ironwork, architectural and ornamental, 1; jewelry, 1; lime and cement, 1; liquors, malt, 2; looking-glass and picture frames, 1; malt, 1; marble and stone work, 1; monuments and tombstones, 2; musical instruments and materials, not specified, 1; optical goods, 2; pickles, preserves, and sauces, 1; sewing machine repairing, 1; ship and boat building, wooden, 1; shirts, 1; soap and candles, 1; trunks and valises, 1.

TABLE 8.—MANUFACTURES IN CITIES

SAN FRANCISCO.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
1	All industries	4,002	$80,103,367	$8,468,392	$5,820,445	$24,824,345	$40,990,185	4,924	4,041	$4,619,033	41,978	$22,037,527
2	Awnings, tents, and sails	14	171,207			22,330	148,877	19	10	14,000	159	109,094
3	Babbitt metal and solder	4	175,675			24,575	151,100	4	8	11,250	34	22,774
4	Bags, other than paper	8	794,080			63,780	730,300	7	25	17,806	223	87,651
5	Baking and yeast powders	4	719,593	10,000	13,500	48,500	647,593	7	80	80,032	96	42,888
6	Baskets, and rattan and willow ware	8	80,540	14,000	6,000	15,715	44,825	7	2	2,725	93	27,470
7	Belting and hose, leather	6	183,106	37,500	16,709	30,307	98,590	7	12	10,816	40	25,856
8	Bicycle and tricycle repairing	19	29,340	4,000	2,000	11,200	12,140	19	3	1,460	39	23,165
9	Billiard tables and materials	3	24,250			3,250	21,000	2	6	5,180	14	11,444
10	Blacksmithing and wheelwrighting	139	261,136	102,060	42,775	42,908	73,393	166	12	8,680	254	169,211
11	Bookbinding and blank book making	12	60,500			35,150	25,350	16	8	8,300	176	83,053
12	Boot and shoe uppers	3	700			400	300	4	2	381	5	1,985
13	Boots and shoes, custom work and repairing.	274	57,565	5,300	3,573	23,421	25,271	283	1	900	121	58,252
14	Boots and shoes, factory product	23	1,180,552	10,000	7,550	325,687	837,315	75	46	46,077	855	400,917
15	Bottling	43	2,589,609	46,400	288,976	36,115	2,218,118	43	81	139,506	350	229,193
16	Boxes, cigar	5	60,150	7,000	3,000	18,100	32,050	28	3	1,800	93	33,748
17	Boxes, fancy and paper	8	131,675			38,775	92,900	13	12	10,300	233	78,837
18	Boxes, wooden packing	6	409,307	1,000	49,350	116,209	242,748	1	35	41,800	330	163,733
19	Brass castings and brass finishing	7	655,910	70,500	33,000	140,930	411,480	9	22	29,035	319	203,870
20	Brassware	4	87,250			31,180	56,070	4	2	3,000	8	6,229
21	Bread and other bakery products	137	975,761	246,825	202,550	255,039	271,347	161	90	60,111	797	417,465
22	Bridges	6	457,600		500	182,500	274,600	9	33	47,400	451	198,048
23	Brooms and brushes	16	113,174			19,230	93,944	19	19	14,626	147	70,857
24	Carpentering	171	354,482	60,600	49,325	42,615	192,942	192	14	14,290	704	464,271
25	Carriage and wagon materials	5	37,950			4,700	33,250	7	2	1,500	7	4,660
26	Carriages and wagons	51	578,179	176,000	84,500	64,575	253,104	63	21	27,938	421	208,965
27	Cheese and butter, urban dairy products.	5	2,098			1,520	578	5			2	809
28	Cheese, butter, and condensed milk, factory product.	6	31,000	12,500	6,000	5,800	6,700	8			10	7,040
29	Chemicals	10	889,527	114,734	109,500	340,384	324,909	7	37	40,640	144	95,977
30	Clothing, men's, custom work and repairing.	321	781,659	20,500	12,413	19,588	729,158	378	115	104,373	1,230	681,084
31	Clothing, men's, factory product	83	936,103	35,000	33,000	81,553	786,550	258	47	46,137	2,109	672,314
32	Clothing, women's, dressmaking	152	269,130	22,900	13,100	20,438	212,692	165	28	25,436	954	405,794
33	Clothing, women's, factory product	49	659,223			48,161	611,062	162	46	47,660	1,256	420,212
34	Coffee and spice, roasting and grinding	22	1,437,610			126,550	1,311,060	23	158	203,513	231	140,422
35	Coffins, burial cases, and undertakers' goods.	4	204,675		700	5,125	198,850	2	9	14,200	55	24,131
36	Confectionery	76	470,887	51,000	16,000	106,252	297,635	88	137	76,066	470	131,461
37	Cooperage	23	385,665	87,000	71,450	54,205	173,010	23	12	14,100	335	216,600
38	Corsets	8	1,962			320	1,642	7			19	7,212
39	Druggists' preparations, not including prescriptions.	6	132,150			23,650	108,500	3	17	21,060	102	49,875
40	Dyeing and cleaning	29	65,130	200	700	37,340	26,890	33	11	6,080	231	85,174
41	Electrical apparatus and supplies	5	58,582			30,982	27,600	2	17	14,760	193	95,851
42	Electrical construction and repairs	20	78,312			29,775	48,537	22	10	11,008	100	66,739
43	Electroplating	7	24,502			16,651	7,851	7	3	2,758	30	15,285
44	Engraving and diesinking	14	7,835			5,885	1,950	15			16	5,928
45	Engraving, steel, including plate printing.	9	12,175			7,775	4,400	8	2	1,004	24	12,840
46	Engraving, wood	3	560			560		3			1	1,000
47	Fish, canning and preserving	12	132,385	3,000	20,200	27,735	81,450	33	13	24,420	123	58,518
48	Flavoring extracts	4	28,100			3,850	24,250	5	7	5,500	17	4,980
49	Flouring and grist mill products	9	1,989,740	172,470	200,000	450,170	1,167,100	5	47	80,890	251	155,576
50	Food preparations	27	267,373	34,500	55,000	55,322	122,551	36	19	14,090	197	95,009
51	Foundry and machine shop products	102	5,225,591	707,681	254,834	1,553,896	2,909,180	105	320	393,953	3,202	2,135,048
52	Fruits and vegetables, canning and preserving.	10	856,900	168,500	79,000	93,750	515,650	20	51	70,656	1,538	433,107
53	Fur goods	24	1,161,690	230,000	75,150	10,515	846,025	27	12	16,967	170	100,051
54	Furnishing goods, men's	15	276,315	5,000	3,000	7,920	260,395	41	53	38,280	582	130,186
55	Furniture, cabinetmaking, repairing, and upholstering.	70	124,483	4,000	10,000	10,530	99,953	78	8	6,660	144	87,163
56	Furniture, factory product	22	348,225		36,600	84,335	227,290	26	33	32,976	496	270,011
57	Gas and lamp fixtures	5	360,750	60,000	50,000	21,500	229,250	3	33	45,460	149	85,500
58	Gas, illuminating and heating	3	14,221,565	1,100,000	569,989	11,821,606	729,970		72	120,986	471	321,138
59	Glass, cutting, staining, and ornamenting.	9	22,075		1,800	5,850	14,425	8	6	9,052	49	26,284
60	Gloves and mittens	15	297,650	1,000	700	20,650	275,300	19	50	40,392	400	158,304
61	Grease and tallow	3	55,590	7,200	7,000	7,100	34,290	6			15	10,124
62	Hairwork	6	12,025		1,500	1,575	8,950	7			19	13,752
63	Hand stamps	8	40,125			17,650	22,475	6	9	8,820	35	19,734
64	Hardware, saddlery	4	710			260	450	4			5	1,844
65	Hats and caps, not including fur hats and wool hats.	11	117,859	8,000	4,000	23,000	82,859	10	8	12,300	88	38,596
66	Hosiery and knit goods	3	89,160		4,000	17,910	67,250		10	12,160	79	27,880

BY SPECIFIED INDUSTRIES: 1900—Continued.

SAN FRANCISCO.

Average number of wage-earners and total wages—continued.						Miscellaneous expenses.					Cost of materials used.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
31,722	$19,106,879	9,321	$2,734,984	935	$195,664	$8,826,167	$2,083,400	$354,450	$5,295,847	$1,092,470	$79,492,952	$77,797,077	$1,695,875	$133,069,416	1
97	87,636	58	20,753	4	705	22,078	11,055	1,117	9,806	100	873,925	873,097	828	1,083,850	2
33	22,196			1	578	6,782	4,260	368	2,154		464,140	446,080	18,060	551,455	3
116	54,447	107	33,204			52,580	12,782	1,541	38,257		1,765,963	1,762,644	3,319	2,007,039	4
54	33,738	42	9,150			125,798	7,741	2,809	111,448	3,800	732,173	726,956	5,217	1,102,533	5
49	17,105	44	10,365			5,618	1,485	378	3,760		70,064	69,344	720	144,955	6
36	25,310			4	546	14,704	5,604	875	8,225		182,153	179,029	3,124	288,693	7
37	22,765			2	400	9,568	8,729	86	718	35	42,405	40,775	1,630	98,895	8
13	11,080			1	364	6,099	5,276	218	605		29,985	29,935	50	70,000	9
246	167,039			8	2,172	36,723	30,856	1,332	2,670	1,865	161,520	143,939	17,581	569,353	10
76	47,111	78	30,628	22	5,314	10,605	8,484	284	1,837		47,490	46,202	1,288	175,658	11
4	1,675	1	310			958	840	10		108	3,400	3,400		8,177	12
120	58,072			1	180	47,970	35,062	338	2,793	9,777	102,043	101,418	625	352,721	13
607	323,191	216	72,116	32	5,610	59,917	21,524	4,646	33,547	200	945,957	936,561	9,396	1,618,514	14
342	226,621			8	2,572	291,608	27,260	5,879	258,469		3,260,887	3,250,567	10,320	4,368,051	15
60	31,240	27	6,632	6	876	8,020	4,910	900	2,210		49,499	48,589	910	127,308	16
51	26,134	178	51,663	4	1,040	14,839	8,295	565	5,979		114,355	112,585	1,770	273,600	17
329	163,483	1	250			29,974	12,340	1,320	16,314		470,093	470,093		883,694	18
319	203,870					19,355	8,884	3,258	5,917	1,296	370,429	353,463	16,966	728,224	19
6	5,653	2	576			2,430	1,350	60	540	480	13,272	13,032	240	40,000	20
621	372,048	163	39,857	13	5,560	101,501	58,872	4,435	38,164	30	1,507,614	1,459,521	48,093	2,601,027	21
451	198,048					16,837	8,532	1,637	11,668		418,640	395,540	23,100	735,697	22
133	68,025	4	820	10	2,012	10,763	6,980	210	3,473	100	120,638	119,273	1,365	257,694	23
702	463,871			2	400	143,629	25,314	1,487	13,686	103,142	1,123,914	1,122,136	1,778	2,275,162	24
7	4,660					1,748	936	150	662		32,925	32,755	170	56,762	25
406	206,097			15	2,868	48,169	24,118	1,599	14,942	7,510	256,291	245,626	10,665	704,690	26
2	809					628	584	7	37		14,184	13,881	303	17,161	27
10	7,040					970	240	155	575		52,549	52,190	359	66,917	28
144	95,977					31,929	940	5,000	25,989		653,447	571,697	81,750	954,528	29
914	576,501	282	97,511	34	7,072	386,809	192,656	3,777	41,928	148,448	1,208,467	1,205,344	3,123	3,062,566	30
740	317,724	1,360	353,450	9	1,140	205,755	41,766	5,857	48,939	109,193	1,988,231	1,976,083	12,148	3,333,885	31
101	90,506	846	314,562	7	726	80,535	60,114	1,129	17,192	2,100	546,594	544,481	2,113	1,364,938	32
335	174,949	911	243,669	10	1,594	55,562	39,811	1,392	13,159	1,200	981,703	975,893	5,810	1,903,331	33
167	122,497	62	17,600	2	325	128,432	54,165	5,255	69,012		2,049,799	2,023,737	26,062	2,766,387	34
38	18,636	17	5,495			15,877	6,800	705	8,372		171,876	171,216	660	258,984	35
218	86,972	247	42,331	10	2,158	99,329	61,789	2,642	34,948		557,995	544,580	13,415	1,136,509	36
328	214,200	1	600	6	1,800	56,911	9,228	1,540	16,143	30,000	822,521	821,236	1,285	1,199,756	37
2	1,020	17	6,192			2,059	1,758	34	267		8,043	7,880	163	26,575	38
45	32,350	44	14,800	13	2,725	30,756	8,268	1,158	21,330		128,290	126,890	1,400	293,762	39
78	42,553	151	42,316	2	305	26,115	13,906	207	10,722	1,280	40,677	31,762	8,915	278,174	40
183	93,771			10	2,080	7,214	6,410	42	762		273,624	269,770	3,854	405,665	41
95	65,533			5	1,206	12,504	7,939	248	4,017	300	91,251	89,522	1,729	225,039	42
29	15,025			1	260	4,649	2,840	49	1,610	150	17,043	15,494	1,549	52,070	43
12	4,848	2	720	2	360	2,674	2,343	23	308		3,997	3,873	124	27,450	44
18	11,110	4	1,414	2	316	2,635	2,265	36	334		3,945	3,863	82	28,600	45
1	1,000					492	492				1,065	1,065		6,920	46
118	57,022	3	1,080	2	416	13,817	5,546	424	7,697	150	190,927	189,537	1,390	384,969	47
7	2,860	8	1,400	2	720	2,966	2,220	92	604	50	24,654	24,654		51,600	48
235	150,019	16	5,557			72,366	3,960	6,100	62,306		3,018,772	2,958,385	60,387	3,574,177	49
188	92,064	8	2,585	1	360	20,743	13,856	746	5,811	330	365,231	354,694	10,537	674,095	50
3,146	2,122,381			56	12,667	704,074	106,027	19,272	533,098	45,677	3,728,365	3,520,277	208,088	8,366,967	51
370	178,025	1,165	254,715	3	367	102,137	18,980	3,159	79,998		2,131,175	2,104,558	26,617	2,992,802	52
59	51,042	110	48,739	1	270	32,546	14,384	9,053	9,109		498,277	497,739	538	1,132,045	53
410	191,930	160	27,100	12	1,156	29,256	11,248	1,283	15,025	1,700	361,480	359,670	1,810	657,885	54
125	80,303	15	6,104	4	756	31,256	17,955	671	5,730	6,900	136,541	134,646	1,895	397,565	55
462	261,439	25	7,012	9	1,560	58,458	20,464	4,891	32,203	900	395,526	386,879	8,647	880,363	56
123	80,700	10	2,800	16	2,000	12,350	6,420	825	5,105		127,292	122,117	5,175	330,015	57
471	321,138					424,274	53,970	85,899	284,405		508,284	493,043	15,241	1,942,214	58
43	25,230	1	300	5	754	11,125	9,206	84	1,335	500	21,572	20,669	903	86,364	59
129	72,184	262	84,820	9	1,300	35,865	14,096	1,290	20,279	200	319,226	317,237	1,989	664,131	60
15	10,124					4,917	60	262	4,595		169,102	167,156	1,946	220,946	61
6	2,700	13	11,052			2,056	1,780	54	222		14,325	14,240	85	41,436	62
33	19,122	1	312	1	300	5,835	4,133	141	1,541	20	20,551	19,657	894	63,175	63
5	1,844					366	294		72		648	574	74	5,012	64
28	18,768	57	19,228	3	600	22,992	10,278	182	12,537		71,650	69,952	1,698	169,902	65
6	3,200	66	23,500	7	1,180	10,570	1,800	540	8,230		71,751	70,751	1,000	126,980	66

TABLE 8.—MANUFACTURES IN CITIES

SAN FRANCISCO—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
67	Ice, artificial	3	$510,141	$88,200	$55,365	$329,317	$37,259		30	$28,140	50	$40,009
68	Instruments, professional and scientific	7	36,100			12,800	23,300	10	7	4,900	35	27,256
69	Ironwork, architectural and ornamental	17	297,517	1,200	1,500	94,965	199,852	17	29	41,194	219	130,751
70	Ivory and bone work	3	1,550			1,100	450	3			5	2,800
71	Jewelry	21	144,144	1,000	1,000	35,774	106,370	41	15	15,887	221	157,543
72	Kaolin and other earth grinding	4	62,395	50,000	2,000	7,200	3,195	6	1	720	10	3,285
73	Lard, refined	3	15,267	3,750	1,500	830	9,187	5			7	2,870
74	Leather goods	10	52,248	1,000	1,500	8,875	40,873	14	10	8,140	50	28,938
75	Leather, tanned, curried, and finished	21	1,232,216	108,800	99,200	143,361	880,855	29	25	36,900	570	364,565
76	Liquors, malt	25	4,722,057	850,683	667,931	347,276	2,856,167	23	64	128,455	443	398,063
77	Liquors, vinous	6	20,469	1,550	2,300	4,340	12,279	8	1	600	4	1,632
78	Lithographing and engraving	6	507,263			163,201	344,062	4	34	53,750	330	181,106
79	Lock and gun smithing	46	19,880			11,585	8,295	52	1	300	40	21,878
80	Looking-glass and picture frames	15	286,800	8,000	7,000	34,900	236,900	15	23	18,432	255	113,775
81	Lumber and timber products	4	405,250	251,500	50,000	56,100	47,650	2	11	11,500	110	49,622
82	Lumber, planing mill products, including sash, doors, and blinds.	27	511,107		41,750	183,949	285,408	30	39	44,044	566	391,547
83	Malt	4	352,330	76,600	138,500	44,500	92,730	2	6	12,600	46	37,911
84	Marble and stone work	16	520,425	50,700	44,100	46,575	379,050	17	18	20,620	186	99,101
85	Masonry, brick and stone	8	31,875	1,500	2,200	7,775	20,400	9	4	8,785	90	56,580
86	Mattresses and spring beds	9	101,065			6,710	94,355	9	17	20,180	89	44,426
87	Millinery and lace goods	8	31,491			7,000	24,491	8	7	5,540	102	30,055
88	Millinery, custom work	77	334,387	100,300	5,300	3,572	225,215	90	35	12,734	385	137,201
89	Mineral and soda waters	20	168,662	27,000	24,000	51,700	65,962	15	57	57,080	106	66,758
90	Models and patterns	8	30,885	2,000	2,000	8,715	18,170	10			54	30,985
91	Monuments and tombstones	18	96,255	21,350	3,220	6,935	64,750	23	3	2,760	65	50,130
92	Mucilage and paste	3	51,100	12,000	10,000	17,000	12,100	1	5	10,500	24	13,157
93	Musical instruments and materials, not specified.	3	10,800			1,250	9,550	3			5	3,595
94	Musical instruments, pianos and materials.	3	32,150	5,000	3,000	3,850	20,300	2			13	11,320
95	Oil, not elsewhere specified	3	788,926	190,000	187,391	128,926	282,609		37	53,110	183	76,796
96	Optical goods	8	26,625			7,000	19,625	10	10	18,320	28	18,530
97	Painting, house, sign, etc	152	201,573	20,725	9,325	40,515	131,008	174	18	10,999	844	520,070
98	Paints	6	135,512		6,000	21,525	107,987	3	25	25,950	22	14,568
99	Paper hanging	8	17,160	5,000	300	760	11,100	12	2	579	34	21,927
100	Patent medicines and compounds	30	498,256	22,000	42,500	75,730	358,026	21	38	43,410	178	83,606
101	Paving and paving materials	11	731,159	255,000	28,000	83,415	364,744	12	22	39,000	1,070	263,445
102	Perfumery and cosmetics	3	21,420			620	20,800	3	28	10,450	23	5,418
103	Photography	64	125,959			64,240	61,719	71	38	24,861	193	103,069
104	Photolithographing and photoengraving.	8	15,682			12,182	3,500	8	8	9,890	64	30,419
105	Pickles, preserves, and sauces	14	192,323	35,000	14,250	25,690	117,383	12	34	33,444	112	49,583
106	Pipes, tobacco	3	835			325	510	3				
107	Plastering and stuccowork	10	29,682	4,165	6,500	5,570	13,447	11			26	17,676
108	Plumbing, and gas and steam fitting	183	583,143	95,150	69,650	64,176	354,167	220	10	7,564	654	439,384
109	Printing and publishing, book and job	105	1,370,577	1,000	500	818,883	550,194	111	104	109,514	1,183	667,566
110	Printing and publishing, newspapers and periodicals.	119	1,414,123	11,100	6,000	899,815	497,208	128	487	504,350	979	883,630
111	Roofing and roofing materials	15	28,291	300	600	13,025	14,366	21	1	900	54	34,099
112	Rubber and elastic goods	6	38,500			17,500	21,000	3	8	4,135	21	8,295
113	Saddlery and harness	54	744,055	316,200	41,200	41,025	345,630	63	38	34,914	315	173,543
114	Safes and vaults	4	25,000			11,500	13,500	3	10	7,200	37	20,900
115	Sausage	9	51,725	17,000	7,800	18,000	8,925	11	1	480	24	12,267
116	Saws	4	157,097	4,460	18,146	94,397	40,094		15	16,440	48	34,457
117	Ship and boat building, wooden	21	112,290	500	5,520	49,010	57,260	36	11	10,000	334	201,706
118	Shirts	26	254,587			23,787	230,800	44	38	46,888	582	215,144
119	Show cases	3	7,900			2,300	5,600	4			19	11,138
120	Silk and silk goods	3	24,000			7,800	16,200	4	4	3,348	40	11,060
121	Slaughtering and meat packing, wholesale.	11	1,680,424	299,974	399,150	285,150	696,150	11	72	117,195	391	198,461
122	Slaughtering, wholesale, not including meat packing.	15	624,938	34,000	50,500	42,700	497,738	20	42	60,295	141	125,470
123	Soap and candles	17	821,080	79,050	82,979	180,919	478,132	22	35	39,671	176	85,312
124	Steam packing	6	44,560			8,525	36,035	3	8	5,553	29	16,710
125	Stencils and brands	4	7,800			4,800	3,000	4			6	4,540
126	Stereotyping and electrotyping	5	74,700			39,000	35,700	2	5	4,621	46	35,060
127	Sugar and molasses, refining	3	1,199,000	5,000	20,000	23,000	1,151,000		58	126,601	611	372,081
128	Surgical appliances	7	12,215			5,715	6,500	8	2	1,386	13	9,282
129	Taxidermy	3	1,600			200	1,400	5			1	250
130	Tinsmithing, coppersmithing, and sheet-iron working.	60	2,253,710	92,000	73,750	540,365	1,547,595	74	67	68,773	1,495	760,969
131	Tobacco, cigars and cigarettes	105	504,236	8,100	5,500	33,048	457,588	208	37	48,518	977	350,005
132	Tools, not elsewhere specified	7	46,125		5,000	28,210	12,915	8	2	2,100	28	15,720
133	Trunks and valises	7	149,000			13,100	135,900	10	12	10,310	141	61,881
134	Type founding	3	96,060			65,060	31,000	2	11	10,551	33	17,113
135	Typewriter repairing	4	9,300			1,050	8,250	2	1	600	13	8,000
136	Umbrellas and canes	3	5,325			475	4,850	3			6	3,874

BY SPECIFIED INDUSTRIES: 1900—Continued.

SAN FRANCISCO—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
50	$40,009					$21,463	$5,350	$1,097	$15,016		$43,753	$7,822	$35,931	$134,411	67
35	27,256					4,175	3,636	114	425		9,751	9,036	715	67,980	68
216	130,361			3	$390	27,067	11,586	844	10,637	$4,000	325,288	317,849	7,439	621,968	69
4	2,500	1	$300			592	564	3	25		1,525	1,525		8,060	70
211	155,775	2	520	8	1,248	37,618	12,786	620	19,412	4,800	363,928	354,838	9,090	627,044	71
10	3,285					3,076	1,081	54	551	1,440	24,951	22,785	2,166	47,545	72
7	2,870					754	741	9	4		59,926	59,434	492	67,758	73
33	24,362	14	4,236	3	340	9,131	3,123	127	5,881		44,845	44,336	509	113,285	74
569	364,155			1	410	69,312	4,905	4,110	60,297		2,219,137	2,198,821	20,316	2,794,804	75
440	397,503	1	260	2	300	1,280,447	10,090	17,096	1,253,261		710,462	627,731	82,731	2,872,303	76
4	1,632					5,991	760	257	4,974		11,630	11,480	150	27,364	77
235	155,202	95	25,904			44,505	17,460	1,687	25,358		223,079	215,677	7,402	608,345	78
35	21,013	1	150	4	715	9,821	9,160	130	531		16,312	15,278	1,034	89,474	79
194	100,115	34	9,760	27	3,900	38,285	10,780	1,371	26,134		81,788	80,392	1,396	347,925	80
110	49,622					6,205	670	2,185	3,400		110,395	110,395		196,785	81
562	390,077	1	470	3	1,000	62,137	39,391	1,831	14,427	6,488	655,730	643,606	12,124	1,353,480	82
46	37,911					8,840		2,240	6,600		324,111	310,096	14,015	537,990	83
186	99,101					12,817	5,176	2,088	5,553		301,172	291,888	9,284	520,805	84
90	56,580					181,599	2,200	475	2,802	176,122	71,884	71,374	510	338,748	85
72	38,650	16	5,560	1	216	9,295	7,792	501	1,002		186,372	185,127	1,245	317,200	86
10	4,264	91	25,737	1	54	3,870	2,304	65	1,451	50	32,563	32,347	216	102,900	87
3	1,700	369	134,044	13	1,460	90,914	78,944	1,748	10,227		485,322	485,310	12	927,848	88
104	66,058	1	400	1	300	20,437	8,301	1,803	10,333		189,110	186,240	2,870	437,326	89
51	30,315			3	670	5,019	3,636	109	1,124	150	15,800	14,534	1,266	75,848	90
63	49,402	2	728			8,042	3,864	172	3,806	800	67,533	67,179	354	184,178	91
20	11,957			4	1,200	2,163	916	352	895		46,953	45,299	1,654	80,600	92
5	3,595					809	552	12	245		847	813	34	8,983	93
13	11,320					1,708	840	98	770		7,776	7,776		38,100	94
173	72,596	10	4,200			36,429	600	6,915	28,914		476,142	469,420	6,722	707,502	95
25	17,750	1	480	2	300	5,978	3,582	105	2,291		37,115	36,119	996	117,680	96
843	519,878			1	192	47,936	35,418	814	10,268	1,436	349,007	348,760	247	1,185,068	97
20	13,848	2	720			15,763	5,700	707	9,356		219,479	214,479	5,000	316,814	98
34	21,927					1,728	1,054	110	564		13,998	13,998		52,720	99
68	44,233	108	39,057	2	316	143,003	12,406	1,573	129,024		528,011	524,957	3,054	1,020,437	100
1,070	263,445					35,116	469	2,339	32,308		362,566	357,066	5,500	816,950	101
7	3,198	16	2,220			22,918	1,380	42	21,496		62,034	62,017	17	117,613	102
112	70,715	71	30,638	10	1,716	51,755	40,244	373	11,138		123,413	122,846	567	426,021	103
62	30,166			2	253	8,142	2,278	121	743		9,137	7,653	1,484	75,775	104
68	39,126	43	10,277	1	180	16,562	8,890	724	6,948		198,707	193,363	5,344	424,772	105
						927	860	12	55		815	815		4,330	106
24	17,260			2	416	2,320	1,473	88	759		8,165	7,584	581	37,121	107
635	434,584	3	300	16	4,500	54,426	38,518	1,996	11,889	2,023	818,467	811,256	7,211	1,687,864	108
915	577,386	207	78,717	61	11,463	137,002	59,892	4,820	54,080	18,210	656,344	631,064	25,280	2,022,649	109
870	337,330	81	40,295	28	5,505	346,821	82,950	9,540	170,443	83,888	838,418	798,995	39,423	3,503,133	110
54	34,099					3,486	2,049	122	1,015	300	70,156	69,057	1,099	132,595	111
21	8,295					2,805	1,930	170	705		33,450	31,685	1,765	58,300	112
274	162,774	18	5,680	23	5,089	47,378	24,757	2,524	20,097		438,802	437,512	1,290	762,550	113
37	20,900					2,837	2,360	76	401		41,695	40,965	730	104,100	114
21	11,895	1	216	2	156	5,325	3,648	535	1,142		66,330	64,001	2,329	115,275	115
44	33,457			4	1,000	15,640	6,140	500	9,000		31,406	26,884	4,522	102,857	116
329	200,072			5	1,634	69,296	6,310	390	62,596		287,047	283,786	3,261	646,084	117
96	48,627	484	166,187	2	330	82,846	17,973	1,176	8,767	54,930	416,015	410,875	5,140	930,815	118
19	11,138					1,785	1,638	29	118		10,432	10,397	35	31,800	119
8	3,800	30	6,760	2	500	2,815	2,100	190	525		16,888	16,348	540	44,800	120
388	197,057	3	1,404			260,237	9,760	5,716	244,761		4,303,182	4,275,330	27,852	5,221,839	121
141	125,470					46,171	11,720	1,705	32,746		4,319,812	4,316,377	3,435	4,769,760	122
140	77,068	28	6,636	8	1,608	58,991	2,166	2,087	54,738		802,861	782,213	20,648	1,170,568	123
28	16,410			1	300	3,078	1,511	117	1,450		39,529	38,394	1,135	80,320	124
6	4,540					672	600	14	58		3,684	3,684		17,000	125
31	25,644	14	9,208	1	208	7,281	3,140	194	3,947		13,878	11,263	2,615	92,937	126
597	369,221	9	1,910	5	950	219,767	55,485	9,233	155,049		10,405,287	10,171,180	234,107	11,177,181	127
11	8,502	2	780			8,030	2,196	30	5,804		11,667	11,435	232	41,389	128
1	250					339	266	4	69		501	500	1	3,100	129
1,053	658,439	324	69,474	118	32,156	164,774	55,354	2,698	106,622	100	3,089,238	3,043,235	46,003	4,584,245	130
843	313,807	127	35,078	7	1,120	227,838	28,226	2,369	196,043	1,200	541,619	540,879	740	1,365,790	131
28	15,720					4,994	4,086	131	477	300	16,205	10,968	5,237	85,620	132
95	47,194	18	6,907	28	7,780	15,333	4,650	278	10,405		102,106	101,206	900	235,100	133
20	13,001	13	4,112			5,889	3,000	241	2,648		21,473	20,221	1,252	65,095	134
13	8,000					2,495	1,410	15	370	700	5,450	5,450		21,200	135
4	3,000	2	874			2,629	2,340	14	275		9,060	9,060		18,350	136

SAN FRANCISCO—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
137	Upholstering materials	5	$21,850			$4,650	$17,200	8	3	$2,700	26	$5,904
138	Varnish	3	148,500	$42,000	$21,000	11,000	74,500	1	6	7,860	14	7,316
139	Watch, clock, and jewelry repairing	124	75,912			36,447	39,465	136	2	547	97	55,682
140	Window shades	10	17,660	1,000	500	4,060	12,100	14	1	720	26	14,866
141	Wirework, including wire rope and cable.	13	355,098			128,152	226,946	13	29	24,170	192	110,371
142	Wood, turned and carved	15	17,715			10,415	7,300	16			26	14,324
143	Wool scouring	6	329,668	40,000	20,000	74,600	195,068	1	9	11,440	230	107,167
144	All other industries[1]	105	11,158,275	1,582,165	1,096,074	2,520,004	5,960,032	94	256	354,642	4,602	2,785,722

[1] Embraces agricultural implements, 2; artificial feathers and flowers, 2; artificial limbs, 2; artists' materials, 1; bags, paper, 2; belting and hose, rubber, 1; bicycles and tricycles, 2; blacking, 1; boot and shoe cut stock, 1; buttons, 2; calcium lights, 1; card cutting and designing, 1; cars and general shop construction and repairs by steam railroad companies, 1; cars, street railroad, not including operations of railroad companies, 2; china decorating, 2; chocolate and cocoa products, 1; cleansing and polishing preparations, 2; clothing, men's, factory product, buttonholes, 1; cordage and twine, 1; cordials and sirups, 1; cork, cutting, 1; dentists' materials, 1; drug grinding, 1; enameling and enameled goods, 1; fancy articles, not elsewhere specified, 2; fertilizers, 2; files, 2; firearms, 1; fireworks, 1; flags and banners, 1; foundry supplies, 1; furs, dressed, 1; gas machines and meters, 1; glass, 1; glue, 2; gold and silver, leaf and foil, 1; hand knit goods, 2; hardware, 2; house furnishing goods, not elsewhere specified, 2; ink, printing, 2; iron and steel, 1; iron and steel, bolts, nuts, washers, and rivets, 1; iron and steel,

SAN JOSE.

1	All industries	344	$3,409,517	$420,243	$756,764	$928,911	$1,303,599	386	258	$173,838	1,702	$818,968
2	Bicycle and tricycle repairing	12	18,325			4,850	13,475	12			17	7,938
3	Blacksmithing and wheelwrighting	33	43,170	17,600	7,050	7,355	11,165	35	1	1,050	36	20,093
4	Boots and shoes, custom work and repairing.	23	7,275			3,770	3,505	28	1	900	12	4,916
5	Bottling	4	12,770	4,600	3,550	1,525	3,095	4			8	5,630
6	Boxes, wooden packing	3	22,700	5,000	3,500	3,700	10,500	2	3	3,300	24	8,298
7	Bread and other bakery products	15	33,440	3,400	2,600	17,975	9,465	15	28	12,306	42	26,530
8	Brick and tile	4	351,717	73,643	149,753	25,082	103,239	2	19	15,000	155	70,767
9	Carpentering	13	10,255	1,000	1,250	2,980	5,025	13	1	1,200	58	40,826
10	Carriages and wagons	6	20,250		3,000	3,350	13,900	6	2	1,500	30	15,155
11	Clothing, men's, custom work and repairing.	18	30,399			3,011	27,388	17	3	4,840	83	41,316
12	Clothing, women's, dressmaking	6	2,505			1,030	1,475	9			32	5,500
13	Confectionery	9	23,225			7,950	15,275	12	22	3,773	18	6,930
14	Dyeing and cleaning	3	2,520	1,000	400	1,025	95	3	5	1,815	5	2,360
15	Foundry and machine shop products	10	125,390	29,000	8,400	56,560	31,430	16	3	1,900	70	45,756
16	Furniture, cabinetmaking, repairing, and upholstering.	5	4,695	1,400	250	1,050	1,995	6	1	125	3	1,653
17	Liquors, malt	3	574,708	68,500	305,600	125,625	74,983	2	5	9,199	83	62,269
18	Liquors, vinous	3	158,436	8,000	34,786	30,250	85,400	1	5	6,100	12	5,478
19	Lock and gun smithing	5	8,215	5,000	1,000	1,850	365	7				
20	Looking-glass and picture frames	3	10,785			485	10,300	3	6	972	4	2,358
21	Marble and stone work	4	28,150	8,700	1,750	2,250	15,450	6	2	900	10	8,780
22	Masonry, brick and stone	3	6,000	2,000	2,000	1,000	1,000	3			17	9,000
23	Millinery, custom work	11	36,555			5,165	31,390	12	29	8,460	47	11,834
24	Mineral and soda waters	3	11,450	5,000	1,050	4,300	1,100	6	2	665	4	1,760
25	Painting, house, sign, etc	19	17,990	800	200	2,875	14,115	20			42	28,840
26	Photography	8	10,425		700	3,200	6,525	8	4	1,078	9	2,798
27	Plumbing, and gas and steam fitting	9	25,654	3,500	2,000	5,063	15,091	13	6	3,880	41	27,343
28	Printing and publishing, book and job	15	98,895			89,075	9,820	18	4	5,020	50	22,482
29	Printing and publishing, newspapers and periodicals.	9	153,000			70,700	82,300	7	58	39,969	83	45,603
30	Saddlery and harness	13	39,725	500	1,500	3,170	34,555	15	2	1,500	34	16,885
31	Tinsmithing, coppersmithing, and sheet-iron working.	4	43,000			7,500	35,500	4	10	6,396	35	21,632
32	Tobacco, cigars and cigarettes	5	26,540			3,000	23,540	5	4	1,800	31	18,153
33	Watch, clock, and jewelry repairing	15	14,945			8,000	6,945	16	1	450	19	11,701
34	Windmills	3	1,150		150	550	450	3			9	2,960
35	All other industries[1]	45	1,435,258	181,600	226,275	423,640	603,743	57	31	39,740	579	220,421

[1] Embraces awnings, tents, and sails, 1; baskets, and rattan and willow ware, 1; bookbinding and blank book making, 2; brass castings and brass finishing, 1; brooms and brushes, 1; cheese and butter, urban dairy products, 1; chemicals, 1; clothing, women's, factory product, 1; coffee and spice, roasting and grinding, 2; cooperage, 1; electrical apparatus and supplies, 1; engraving and diesinking, 1; flouring and grist mill products, 2; food preparations, 2; fruits and vegetables, canning and preserving, 2; furniture, factory product, 2; gas, illuminating and heating, 1; gloves and mittens, 2; hand stamps, 1; hardware, saddlery, 2; leather,

BY SPECIFIED INDUSTRIES: 1900—Continued.

SAN FRANCISCO—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
14	$2,820	10	$2,796	2	$288	$3,225	$2,155	$95	$475	$500	$15,272	$14,752	$520	$38,400	137
14	7,316					4,850	120	380	4,350		88,900	88,185	715	130,805	138
89	53,478	2	408	6	1,796	34,995	29,281	414	3,398	1,902	60,325	59,554	771	251,542	139
20	12,927	5	1,739	1	200	3,466	3,069	177	220		86,780	86,220	560	122,556	140
187	109,111			5	1,260	21,050	10,205	649	9,196	1,000	464,845	459,755	5,090	808,884	141
24	13,764	1	300	1	260	3,886	2,691	45	450	700	10,891	9,559	1,332	46,530	142
189	93,375	41	13,792			45,276	9,920	14,862	20,494		53,354	42,974	10,380	293,200	143
4,230	2,688,945	284	72,462	138	24,315	720,093	61,447	36,127	368,629	253,890	7,380,626	7,024,341	306,285	12,192,711	144

doors and shutters, 1; iron and steel, forgings, 2; japanning, 1; jewelry and instrument cases, 1; labels and tags, 1; lamps and reflectors, 2; lapidary work, 1; lasts, 2; lime and cement, 2; matches, 2; oakum, 1; paper goods, not elsewhere specified, 1; pens, gold, 1; photographic apparatus, 1; plumbers' supplies, 2; pottery, terra cotta, and fire-clay products, 1; printing materials, 1; rice, cleaning and polishing, 1; salt, 2; scales and balances, 2; sewing machine repairing, 1; shipbuilding, iron and steel, 2; shoddy, 1; smelting and refining, not from the ore, 2; sporting goods, 1; springs, steel, car and carriage, 1; stationery goods, not elsewhere specified, 1; steam fittings and heating apparatus, 2; tobacco, chewing, smoking, and snuff, 1; toys and games, 1; vault lights and ventilators, 1; vinegar and cider, 1; wood, preserving, 2; woolen goods, 1.

SAN JOSE.

1,154	$662,226	532	$153,286	16	$3,506	$344,027	$78,947	$17,872	$236,406	$10,802	$2,360,145	$2,287,951	$72,194	$4,410,062	1
16	7,688			1	250	3,344	1,886	124	1,334		9,753	9,594	159	27,110	2
34	19,673			2	420	6,517	4,143	368	2,002	4	23,966	21,909	2,057	81,335	3
11	4,754	1	162			3,375	2,614	67	694		9,869	9,834	35	31,564	4
8	5,630					1,812	10	100	1,702		23,712	23,622	90	38,109	5
23	8,128	1	170			2,043	400	279	1,364		251,620	251,246	374	268,044	6
40	26,090	2	440			9,021	4,602	255	4,164		70,284	66,292	3,992	155,516	7
155	70,767					20,419	1,900	915	17,604		45,012	17,385	27,627	196,797	8
58	40,826					10,225	820	75	330	9,000	143,550	143,470	80	217,240	9
30	15,155					4,575	3,258	146	1,071	100	20,476	19,880	596	51,920	10
54	31,039	29	10,277			8,601	5,274	677	2,650		50,788	50,646	142	142,646	11
		32	5,500			1,120	1,010		110		4,510	4,510		14,600	12
14	6,065	2	740	2	125	6,073	4,416	173	1,484		22,242	21,291	951	63,854	13
4	2,060	1	300			1,247	324	37	886		1,164	455	709	10,800	14
79	45,756					6,684	2,454	610	3,620		107,719	103,229	4,490	223,523	15
2	1,060	1	593			864	542	10	292	80	4,083	4,048	35	11,340	16
77	59,549	6	2,720			113,302		2,408	110,894		61,084	50,664	10,420	262,744	17
12	5,478					9,035	480	615	7,940		24,171	23,071	1,100	51,772	18
						928	720	93	115		1,732	1,640	92	6,665	19
3	2,208	1	150			1,615	1,310	59	246		4,806	4,806		14,400	20
10	8,780					1,777	420	47	707	603	7,208	7,168	40	33,169	21
17	9,000					152	87	55	10		19,635	19,635		37,150	22
1	1,700	46	10,134			10,750	8,280	212	2,258		50,916	50,866	50	97,372	23
3	1,510			1	250	953	86	59	808		1,399	1,349	50	5,850	24
39	23,810	1	240	2	290	4,140	3,393	159	588		29,119	29,083	36	73,060	25
3	1,307	6	1,491			2,634	2,200	53	381		6,718	6,682	36	23,800	26
41	27,343					5,508	2,230	235	2,893	150	33,934	33,456	478	96,271	27
37	19,017	12	3,255	1	210	8,073	3,133	432	4,508		20,869	19,185	1,684	77,500	28
54	36,514	28	8,881	1	208	12,133	3,805	384	7,284	665	28,234	25,567	2,667	151,253	29
33	16,705			1	180	3,637	2,756	201	680		23,705	23,700	5	55,483	30
35	21,632					9,372	3,960	381	5,031		76,517	75,994	523	134,670	31
23	15,860	3	720	5	1,573	7,428	1,500	169	5,759		24,587	24,472	115	56,365	32
19	11,704					4,923	3,741	227	755	200	14,755	14,598	157	40,400	33
9	2,960					481	384	22	75		13,460	13,460		21,200	34
219	112,958	360	107,463			61,261	6,809	8,225	46,227		1,128,548	1,115,144	13,401	1,636,540	35

tanned, curried, and finished, 1; lumber, planing mill products, including sash, doors, and blinds, 1; mattresses and spring beds, 2; paints, 1; paving and paving materials, 1; plastering and stuccowork, 1; sausage, 1; ship and boat building, wooden, 1; slaughtering and meat packing, wholesale, 2; slaughtering, wholesale, not including meat packing, 1; soap and candles, 1; stationery goods, not elsewhere specified, 1; wirework, including wire rope and cable, 2; woolen goods, 1.

TABLE 9.—MANUFACTURES IN CITIES AND

	Cities and towns.	Number of establishments.	Capital.					Proprietors and firm members.	Salaried officials, clerks, etc.		Average number of wage-earners and total wages.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
1	Total for cities and towns	1,217	$12,998,721	$1,661,859	$1,655,064	$3,240,774	$6,441,024	1,865	467	$453,515	6,064	$3,029,407
2	Fresno	159	1,648,138	126,946	272,747	394,033	854,412	192	104	101,021	1,009	513,064
3	Napa	76	1,054,634	62,075	159,740	260,765	572,054	85	31	23,030	534	203,857
4	Petaluma	86	712,003	70,161	87,021	122,526	432,295	92	19	15,108	366	155,332
5	San Diego	208	1,147,712	202,895	145,862	427,251	371,704	230	57	47,703	574	281,786
6	Santa Clara	36	613,510	39,100	51,150	67,515	455,745	38	22	28,240	248	146,099
7	Santa Cruz	85	1,499,753	276,200	137,100	326,068	760,385	88	35	42,061	507	268,865
8	Santa Rosa	139	765,547	75,800	35,275	212,260	392,212	153	13	12,486	657	260,667
9	Stockton	293	4,827,253	712,127	627,294	1,195,247	2,292,585	338	165	166,722	1,666	954,094
10	Tulare	30	149,075	15,675	24,600	48,025	60,775	31	6	4,800	185	62,010
11	Vallejo	63	440,196	63,980	44,175	131,759	200,282	66	13	10,720	229	132,494
12	Visalia	42	140,900	16,900	20,100	55,325	48,575	52	2	1,624	89	51,139

TOWNS UNDER 20,000 IN POPULATION: 1900.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
4,635	$2,656,121	1,342	$359,198	87	$14,088	$1,104,278	$197,293	$84,708	$711,368	$110,909	$11,425,360	$11,208,935	$216,425	$18,961,267	1
687	424,578	305	84,285	17	4,201	136,761	34,020	15,771	86,121	849	1,903,800	1,862,165	41,635	3,238,217	2
359	161,855	153	38,452	22	3,550	86,688	10,373	6,545	69,770	----------	795,285	779,281	16,004	1,245,105	3
265	131,348	96	23,605	5	379	59,014	8,996	2,595	32,097	15,326	516,814	506,718	10,096	971,670	4
458	251,987	114	29,362	2	437	132,568	36,681	6,515	67,228	22,144	556,787	530,547	26,240	1,309,321	5
222	140,701	20	4,666	6	732	26,586	3,975	2,303	20,308	----------	330,155	327,629	2,526	712,421	6
488	263,962	17	4,603	2	300	149,269	13,290	7,827	115,952	12,200	893,916	877,835	16,081	1,677,411	7
390	192,542	267	68,125	----------	----------	98,781	22,491	4,389	51,017	20,884	902,579	887,414	15,165	1,521,343	8
1,460	900,913	178	49,422	28	3,759	335,426	47,426	32,911	217,613	37,476	4,730,316	4,660,770	69,546	6,907,839	9
51	23,325	132	38,430	2	255	15,342	1,800	817	12,725	----------	257,166	252,513	4,653	378,862	10
170	115,509	56	16,510	3	475	48,619	13,093	3,598	31,928	----------	379,889	369,848	10,041	687,434	11
85	49,401	4	1,738	----------	----------	15,224	5,148	1,437	6,609	2,030	158,653	154,215	4,438	311,644	12

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Twelfth Census of the United States.

CENSUS BULLETIN.

No. 137. WASHINGTON, D. C. February 25, 1902.

MANUFACTURES.

MINNESOTA.

Hon. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I transmit herewith, for publication in bulletin form, the statistics of manufacturing and mechanical industries for the state of Minnesota for the census year 1900, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that "The schedules of inquiries relating to the products of manufacturing and mechanical establishments shall embrace the name and location of each establishment; character of organization, whether individual, cooperative, or other form; date of commencement of operations; character of business or kind of goods manufactured; amount of capital invested; number of proprietors, firm members, copartners, or officers, and the amount of their salaries; number of employees, and the amount of their wages; quantity and cost of materials used in manufactures; amount of miscellaneous expenses; quantity and value of products; time in operation during the census year; character and quantity of power used; and character and number of machines employed."

In each of the above particulars the requirements of the law have been observed, but certain of the data thus elicited are reserved for publication in the final volumes.

There were 27 cities and towns in the state withdrawn from the enumerators and their manufacturing statistics collected by special agents, in accordance with the further provision of section 7 of the census act. Wherever the phrase "urban manufactures" is used in this bulletin, it applies only to those cities and towns which were withdrawn from the enumerators and committed to special agents, and only to manufacturing establishments within the corporate limits of such places.

Three cities in Minnesota contain a population exceeding 20,000 each: Duluth, Minneapolis, and St. Paul. The manufacturing statistics of these 3 cities are presented by specified industries, and in comparison with the returns of the Eleventh Census.

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Mr. LeGrand Powers, of Minnesota, chief statistician for agriculture, Census Office, rendered valuable assistance in the preparation of the text for the accompanying report.

The statistics of Minnesota are presented in 9 tables: Table 1 showing comparative figures for the state at the several censuses; Table 2 showing all the industries of the state divided between hand trades and the manufactures proper, and also the statistics of educational, eleemosynary, and penal institutions, and establishments with a product of less than $500, which two latter classes were not reported at previous censuses; Table 3 showing the statistics of the 11 leading industries of the state for 1890 and 1900; Table 4 showing the totals for the cities of Duluth, Minneapolis, and St. Paul at the censuses of 1890 and 1900; Table 5 showing the urban manufactures of the state in comparison with the totals for the entire state and the state exclusive of the cities and towns withdrawn from the enumerators; Table 6 showing the statistics for the state by counties; Table 7 showing the statistics for the state by specified industries; Table 8 showing the statistics for the cities of Duluth, Minneapolis, and St. Paul by specified industries; and Table 9 showing the totals for all industries in each of the cities and towns withdrawn from the enumerators (exclusive of those shown in Table 8).

Table 1 shows the growth of manufactures in Minnesota for the half century which terminates with the Twelfth Census. Owing to changes in the method of taking the census, comparisons between the earlier and later decades, represented in Table 1, should be drawn only in the most general way. Nevertheless, the rate of growth in Minnesota manufactures may be fairly inferred from the figures given.

In drafting the schedules of inquiry for the census of 1900 care was taken to preserve the basis of comparison with prior censuses. Comparison may be made safely with respect to all the items of inquiry except those relating to capital, salaried officials, clerks, etc., and their

salaries, the average number of employees, and the total amount of wages paid. Live capital, that is, cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries, was first called for at the census of 1890. No definite attempt was made, prior to the census of 1890, to secure a return of live capital invested.

Changes were made in the inquiries relating to employees and wages in order to eliminate defects found to exist on the form of inquiry adopted in 1890. At the census of 1890 the average number of persons employed during the entire year was called for, and also the average number employed at stated weekly rates of pay, and the average number was computed for the actual time the establishments were reported as being in operation. At the census of 1900 the greatest and least numbers of employees were reported, and also the average number employed during each month of the year. The average number of wage-earners (men, women, and children) employed during the entire year was ascertained by using 12, the number of calendar months, as a divisor into the total of the average numbers reported for each month. This difference in the method of ascertaining the average number of wage-earners during the entire year may have resulted in a variation in the number, and should be considered in making comparisons.

At the census of 1890 the number and salaries of proprietors and firm members actively engaged in the business or in supervision were reported, combined with clerks and other officials. In cases where proprietors and firm members were reported without salaries, the amount that would ordinarily be paid for similar services was estimated. At the census of 1900 only the number of proprietors and firm members actively engaged in the industry or in supervision was ascertained, and no salaries were reported for this class. It is therefore impossible to compare the number and salaries of salaried officials of any character for the two censuses.

Furthermore, the schedules for 1890 included in the wage-earning class, overseers, foremen, and superintendents (not general superintendents or managers), while the census of 1900 separates from the wage-earning class such salaried employees as general superintendents, clerks, and salesmen. It is possible and probable that this change in the form of the question has resulted in eliminating from the wage-earners, as reported by the present census, many high-salaried employees included in that group for the census of 1890.

In some instances, the number of proprietors and firm members, shown in the accompanying tables, falls short of the number of establishments reported. This is accounted for by the fact that no proprietors or firm members are reported for corporations or cooperative establishments.

The reports show a capital of $165,832,246 invested in manufactures and mechanical industries in the 11,114 establishments reporting for the state of Minnesota. This sum represents the value of land, buildings, machinery, tools, and implements, and the live capital utilized, but does not include the capital stock of any of the manufacturing corporations of the state. The value of the products is returned at $262,655,881, to produce which involved an outlay of $6,554,424 for salaries of officials, clerks, etc.; $35,484,825 for wages; $13,273,648 for miscellaneous expenses, including rent, taxes, etc.; and $173,425,615 for materials used, mill supplies, freight, and fuel. It is not to be assumed, however, that the difference between the aggregate of these sums and the value of the products is, in any sense, indicative of the profits in the manufacture of the products during the census year. The census schedule takes no cognizance of the cost of selling manufactured articles, or of interest on capital invested, or of the mercantile losses incurred in the business, or of depreciation in plant. The value of the product given is the value as obtained or fixed at the shop or factory. This statement is necessary in order to avoid erroneous conclusions from the figures presented.

The value of products for the state of Minnesota, $262,655,881, is the gross value, and not the net or true value. The difference between these two should be carefully noted. The gross value is found by adding the value of products in the separate establishments. But the finished product of one establishment is often the raw material for another. In such cases the value of the former reappears in the latter, and thus the original cost of certain materials may be included several times in the gross value. The net or true value is found by subtracting from the gross value the value of all materials purchased in a partly manufactured form. In this way the duplications in the gross value are eliminated.

At the census of 1890 the schedule was so framed that it was impossible to find the net or true value. In the present census the schedule asked for the value of the materials in two classes, those purchased in the crude state and those purchased in the partly manufactured form. From the answers to these questions the net or true value of products may be computed. Thus, for Minnesota, the gross value of products for 1900 was $262,655,881. The value of materials purchased in a partly manufactured form was $72,341,746. The difference, $190,314,135, is the net or true value of products, and represents the increase in the value of raw materials resulting from the various processes of manufacture.

Very respectfully,

S. N. D. North

Chief Statistician for Manufactures.

MINNESOTA.

Table 1 shows the statistics of the manufacturing and mechanical industries of the state of Minnesota as returned at the censuses of 1850 to 1900, inclusive, with the percentages of increase for each decade. This table also presents the average number of wage-earners employed by manufacturing establishments, in comparison with the total population of the state, and the value of the land and buildings owned and reported by manufacturers as capital, in comparison with the assessed value of all real estate and improvements.

TABLE 1.—COMPARATIVE SUMMARY, 1850 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.						PER CENT OF INCREASE.				
	1900	1890	1880	1870	1860	1850	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870	1850 to 1860
Number of establishments	11,114	7,505	3,493	2,270	562	5	48.1	114.9	53.9	303.9	11,140.0
Capital	$165,832,246	$127,686,618	$31,004,811	$11,993,729	$2,388,310	$94,000	29.9	311.8	158.5	402.2	2,440.8
Salaried officials, clerks, etc., number	7,319	[1] 9,839	(2)	(2)	(2)	(2)	[3] 25.6				
Salaries	$6,554,424	[1] $7,818,116	(2)	(2)	(2)	(2)	[3] 16.2				
Wage-earners, average number	77,234	69,790	21,247	11,290	2,123	63	10.7	228.5	88.2	431.8	3,269.8
Total wages	$35,484,825	$30,371,123	$8,613,094	$4,052,837	$712,214	$18,540	16.8	252.6	112.5	469.0	3,741.5
Men, 16 years and over	66,839	63,522	18,937	10,892	2,104	(2)	5.3	235.4	73.9	417.7	
Wages	$32,905,947	$28,689,508	(2)	(2)	(2)	(2)	14.7				
Women, 16 years and over	9,553	5,508	1,636	259	19	(2)	73.4	236.7	531.7	1,263.2	
Wages	$2,451,400	$1,583,443	(2)	(2)	(2)	(2)	54.8				
Children, under 16 years	792	760	674	139	(2)	(2)	4.2	12.8	384.9		
Wages	$127,478	$98,172	(2)	(2)	(2)	(2)	29.9				
Miscellaneous expenses	$13,273,648	$12,136,612	(4)	(4)	(4)	(4)	9.4				
Cost of materials used	$173,425,615	$118,481,941	$55,660,681	$13,842,902	$1,904,070	$24,300	46.4	112.9	302.1	627.0	7,735.7
Value of products, including custom work and repairing	$262,655,881	$192,033,478	$76,065,198	$23,110,700	$3,373,172	$58,300	36.8	152.5	229.1	585.1	5,685.9
Total population	[5] 1,741,986	1,301,826	780,773	439,706	172,023	6,077	33.8	66.7	77.6	155.6	2,730.7
Wage-earners engaged in manufactures	77,234	69,790	21,247	11,290	2,123	63	10.7	228.5	88.2	431.8	3,269.8
Per cent of total population	4.4	5.4	2.7	2.6	1.2	1.0					
Assessed value of real estate	[6] $492,275,174	$496,558,366	$203,446,781	$62,079,587	$25,291,771	$97,303	[3] 0.9	144.1	227.7	145.5	25,876.8
Value of land and buildings invested in manufactures [7]	$49,399,090	$39,900,494	(2)	(2)	(2)	(2)	23.8				
Per cent of assessed value	10.0	8.0									

[1] Includes proprietors and firm members, with their salaries; number only reported in 1900. (See Table 7.)
[2] Not reported separately.
[3] Decrease.
[4] Not reported.
[5] Exclusive of 9,408 Indians and other persons on Indian reservations, which classes were not included at previous censuses.
[6] As given for the year 1899, in the Legislative Manual, State of Minnesota, 1901, page 601.
[7] Does not include value of rented property.

Table 1 shows that there has been a steady growth in the manufacturing and mechanical industries of Minnesota during the half century. The population during these years increased from 6,077 to 1,741,986, while the average number of wage-earners employed in manufacturing establishments increased from 63 to 77,234, embracing, in 1900, 4.4 per cent of the entire population, compared with 1 per cent in 1850. Probably the best indication of the importance of the wage-earning class is afforded by the greatest number employed at any one time during the year. In 1900 this was 113,509, or 6.5 per cent of the total population of the state. The greatest absolute increase in the value of products, $115,968,280, is shown for the decade ending with the year 1890.

The development of Minnesota's manufactures is due in part to its native forests of white and Norway pine and to its fertile valleys for the growing of grain; to its water-power; to cheap transportation by way of the Great Lakes; to the early construction of railroads connecting the state with the agricultural sections of the West and Southwest, and with the great centers of population of the East and South; to its geographical position; and to its corporation laws.

Table 2 divides the industries of the state between the hand trades and the manufactures proper. This table also gives the statistics for educational, eleemosynary, and penal institutions, and establishments with a product of less than $500; these were not reported at previous censuses, and therefore are omitted from the other tables and their use confined to Table 2.

TABLE 2.—SUMMARY FOR ALL ESTABLISHMENTS.

CLASSES.	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	COST OF MATERIALS USED. Total.	COST OF MATERIALS USED. Purchased in raw state.	COST OF MATERIALS USED. Purchased in partially manufactured form.	COST OF MATERIALS USED. Fuel, freight, etc.	Value of products, including custom work and repairing.
Total	13,021	$167,342,210	14,365	77,896	$35,517,803	$13,330,926	$174,021,253	$96,156,449	$72,916,476	$4,948,328	$263,670,586
Hand trades[1]	5,138	9,193,847	5,905	15,032	7,372,128	2,043,700	13,892,022	346,819	13,066,566	478,637	29,806,800
Educational, eleemosynary, and penal institutions	8	664,730	--------	16	4,440	3,006	434,417	----------	430,579	3,838	522,436
Establishments with a product of less than $500	1,899	845,234	2,112	646	28,538	54,272	161,221	17,070	144,151	----------	492,269
All other establishments	5,976	156,638,399	6,348	62,202	28,112,697	11,229,948	159,533,593	95,792,560	59,275,180	4,465,853	232,849,081

[1] Includes bicycle and tricycle repairing, 200; blacksmithing and wheelwrighting, 1,362; boots and shoes, custom work and repairing, 468; carpentering, 454; clothing, men's, custom work and repairing, 525; clothing, women's, dressmaking, 494; dyeing and cleaning, 23; furniture, cabinetmaking, repairing, and upholstering, 152; lock and gunsmithing, 32; masonry, brick and stone, 155; millinery, custom work, 370; painting, house, sign, etc., 287; paper hanging, 34; plastering and stuccowork, 54; plumbing, and gas and steam fitting, 194; sewing machine repairing, 5; taxidermy, 8; typewriter repairing, 6; watch, clock, and jewelry repairing, 315.

Of the 13,021 establishments of all classes shown in this table, 7,037, or 54 per cent, were small shops included in the groups of "hand trades" and "establishments with a product of less than $500." The value of the products of these establishments, consisting principally of the sums received for custom work and repairing, amounted to $30,299,069, or only 11.5 per cent of the total value of the products of the state.

In addition to the 13,021 active establishments in the state during the census year, with a capital of $167,342,210, shown in Table 2, there were 59 idle establishments, with a capital of $4,296,797, divided as follows:

INDUSTRIES.	Number of idle establishments.	Capital.	INDUSTRIES.	Number of idle establishments.	Capital.
Agricultural implements	1	$1,909,812	Ironwork, architectural and ornamental	1	$500,000
Boots and shoes, factory product	1	6,900	Liquors, distilled	1	125,000
Brick and tile	14	207,800	Lumber and timber products	8	19,750
Cheese, butter, and condensed milk, factory product	18	43,660	Oil, linseed	1	15,000
Flouring and grist mill products	4	13,540	All other industries	8	5,559
Iron and steel	2	1,449,776			

TABLE 3.—COMPARATIVE SUMMARY OF ELEVEN LEADING INDUSTRIES.

INDUSTRIES.	Year.	Number of establishments.	Capital.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
Total for selected industries for state	1900	2,500	$110,654,790	35,862	$17,528,938	$7,253,986	$130,594,541	$177,172,025
	1890	1,405	80,149,167	30,334	11,820,227	5,667,915	80,491,966	111,052,701
Increase, 1890 to 1900	--------	1,095	30,505,623	5,528	5,708,711	1,586,071	50,102,575	66,119,324
Per cent of increase	--------	77.9	38.1	18.2	48.3	28.0	62.2	59.5
Per cent of total of all industries in state	1900	22.5	66.7	46.4	49.4	54.6	75.3	67.5
	1890	18.7	62.8	43.5	38.9	46.7	67.9	57.8
Boots and shoes, factory product	1900	16	2,237,540	2,025	719,231	151,042	2,378,156	3,615,801
	1890	8	1,794,711	1,099	524,978	99,962	1,090,722	2,032,814
Cars and general shop construction and repairs by steam railroad companies.	1900	39	4,933,805	4,700	2,599,387	95,561	3,380,441	6,319,876
	1890	18	2,926,860	1,951	1,219,325	(1)	1,305,136	2,628,174
Cheese, butter, and condensed milk, factory product	1900	596	2,264,956	740	398,224	102,096	7,188,711	8,479,896
	1890	106	606,184	783	353,701	50,849	2,168,307	2,958,476
Flouring and grist mill products	1900	512	24,125,781	4,086	2,383,836	1,300,270	74,509,733	83,877,709
	1890	307	19,518,743	3,509	1,748,115	1,712,017	52,383,867	60,158,088
Foundry and machine shop products	1900	175	4,267,322	3,139	1,512,579	306,025	2,753,777	5,975,077
	1890	92	2,403,725	1,289	795,575	140,618	1,080,332	2,335,024
Liquors, malt	1900	78	3,539,722	856	417,832	1,996,040	867,901	4,456,928
	1890	66	3,625,239	548	295,955	526,786	751,907	2,206,366
Lumber and timber products	1900	438	52,095,923	15,140	7,140,571	1,782,489	26,047,781	43,585,161
	1890	392	39,442,925	16,170	4,155,522	1,916,798	15,170,349	25,075,132
Lumber, planing mill products, including sash, doors, and blinds	1900	61	2,489,374	1,639	667,091	133,850	2,619,848	3,988,276
	1890	54	4,879,061	2,530	1,335,242	201,324	2,566,791	4,943,451
Oil, linseed	1900	5	1,963,231	155	81,981	76,474	2,951,004	3,272,598
	1890	3	1,017,114	90	41,738	67,152	1,140,450	1,517,719
Printing and publishing, newspapers and periodicals	1900	560	6,382,125	2,714	1,304,229	1,219,343	1,073,934	5,790,148
	1890	341	3,693,259	2,143	1,230,284	891,956	771,151	4,157,026
Slaughtering: Total	1900	20	1,355,011	668	303,977	90,796	6,823,255	7,810,555
	1890	18	741,346	222	119,792	60,453	2,062,954	2,510,481
Slaughtering and meat packing, wholesale	1900	13	1,211,086	627	280,463	79,062	5,956,371	6,803,112
	1890	13	696,746	202	107,984	56,350	1,557,171	1,926,137
Slaughtering, wholesale, not including meat packing	1900	7	143,925	41	23,514	11,734	866,884	1,007,443
	1890	5	44,600	20	11,808	4,103	505,783	584,294

[1] Not reported.

The 11 leading industries of the state in 1900, as shown in Table 3, embraced 2,500 establishments, or 22.5 per cent of the total number in the state; used a capital of $110,654,790, or 66.7 per cent of the total; gave employment to 35,862 wage-earners, or 46.4 per cent of the total number; and paid $17,528,938, or 49.4 per cent of the total wages. The value of their products was $177,172,025, or 67.5 per cent of the total. In the discussion of Table 3, which follows, these industries are ranked with reference to the value of their products.

Table 3 shows that flour and grist milling is the most important industry in the state. The 512 establishments reported in 1900 gave employment to 4,086 wage-earners, or 5.3 per cent of the wage-earners employed in the state, and their products were valued at $83,877,709, or 31.9 per cent of the total value of the products of the state. In 1890 there were 307 establishments, 3,509 wage-earners, and products valued at $60,158,088. The increase in the value of products during the decade was $23,719,621, or 39.4 per cent. This is a greater absolute increase than is shown for any other industry.

In 1900 Minnesota had 11 per cent of the total capital invested in the manufacture of flouring and grist mill products in the United States, and led the states in this regard. In 1890 this percentage was 9.4, New York and Pennsylvania preceding in the order named. The value of the products of the Minnesota mills in 1900 was 15 per cent of the total value of the flouring and grist mill products of the United States. In 1890 this percentage was 11.7. In 1900 no other state approached Minnesota's total, New York, the second in rank, having a value aggregating a little more than one-half.

The first manufactory established in Minnesota was a sawmill, constructed in 1821 for the use of the United States garrison at Fort Snelling.[1] It stood upon the west side of the Falls of St. Anthony, in what is now a part of the city of Minneapolis. In 1823 it was fitted up for grinding flour, at an expense of $270.33 for the millstones and the cost of transporting them from St. Louis. The labor of erecting this mill and placing the stones in position was performed by the garrison, with no additional outlay. From this beginning have developed two of the greatest manufactures of the state—the milling of flour and grist and the sawing of lumber and timber. These, with the manufacture of planing mill products, furnished a trifle over one-half of the value of the manufactured products of the state in 1900.

The development of the flour and grist milling industry was very slow. For a long time little faith was placed in the future of Minnesota agriculture, and for many years the state did not raise sufficient wheat to feed its own population.[2] The second gristmill was erected in 1843, but, like the one built twenty years before, it had no bolting apparatus. The first bolting cloth was introduced in 1846 by Mr. Samuel Bowles, a miller in Washington county.[2] The development began about 1858, in which year the first considerable shipments of wheat were made to other states.[3] Wheat raising was stimulated by the high price which prevailed during the early sixties. The wheat then raised in Minnesota was the same variety as is now grown in that state, and was known as spring wheat. By the methods of milling in general use prior to 1870, the hard outer covering of this wheat was more or less pulverized, and passed through the bolting cloth with the flour. As a result, the flour made from spring wheat was darker than that made from winter wheat, and made a darker bread, while the fine particles of bran mixed with the flour attracted moisture in hot or damp climates, so that the flour soon spoiled. Therefore, it could not be readily exported. For these reasons its value was considerably less than that of flour manufactured from winter wheat. In the markets of Chicago and Buffalo 5 bushels of spring wheat seldom sold for as much as 4 bushels of winter wheat of the same general grade.[4]

Prior to 1870 practically all of the flour of the world was made by what is now known as the old process of low grinding in which the upper millstone was set low, or very close to the lower, and the wheat was reduced to flour by one operation. Between 1870 and 1890 this method of making flour gave place to what is usually called the new process of milling, or the manufacture of flour by medium high grinding. This, in turn, gave way to the use of rollers.

The new process of making flour was introduced into the United States by Mr. N. La Croix, a French millwright who settled at Faribault, Minn., about 1860.[5] It attracted little attention until after the destruction by flood of his small mill, when he removed to Minneapolis and entered the service of Mr. Christian, who at once adopted his method. Other millers of that city soon followed, and thereafter the growth of the milling industry was phenomenal. The mills attracted the wheat of the state to the village by the Falls of St. Anthony, and in a few years, with the accompanying stimulus to other trades and industries, created a flourishing city. The new process spread over the United States and attracted the attention of the world. Large quantities of flour were exported, whereas previously very little had found a foreign market, the exports of breadstuffs being chiefly in the shape of grain.

Briefly outlined, the new process as introduced consisted of reducing grain to flour by two or more successive and distinct grindings. As a result of the first grinding, the grain was reduced to small particles or granules. The resulting chop, as it is called, was passed through the bolting apparatus and separated into its component parts, flour, middlings, and bran. The flour thus obtained was of an inferior grade. The middlings, containing the more valuable portion of the wheat, were reground on separate stones. Later, rollers were substituted for stones, but the

[1] Report of the Minnesota Bureau of Labor Statistics, 1891-1892, page 165.
[2] Ibid., page 166.
[3] Ibid.
[4] Ibid., pages 190 to 221.
[5] Ibid., page 172.

principle governing their use remains substantially the same as in the system of high grinding with stones. It is the gradual reduction of the grain to flour by a number of distinct processes, instead of by one grinding, as was the time-honored custom. By this system the bran is removed as completely from spring wheat flour as from flour made from winter wheat. With this change, spring wheat flour at once began to sell for a higher price than flour made from winter wheat, for it was richer in gluten and otherwise more valuable. The relative prices which the two kinds of wheat had commanded were reversed. The average price of Minnesota wheat advanced to from 20 to 30 cents a bushel above the price of wheat grown in most other states. This advance was shared by the wheat growers of the Dakotas and northern Wisconsin; hence the rapid development of that section under the stimulus of the new process of milling. The millers of Minneapolis obtained their power from the Falls of St. Anthony, and found markets for their products at a profit not realized by the flour makers of any other section. The increase in the number of mills during the past decade has been principally outside of Minneapolis. However, the mills of that city have, by the introduction of new and improved milling machinery, greatly increased their capacity.

The manufacture of lumber and timber products ranks second among the industries of the state, with 438 establishments, 15,140 wage-earners, and products valued at $43,585,161. In 1890 there were 392 establishments, 16,170 wage-earners, and products valued at $25,075,132. The increase in the value of products during the decade was $18,510,029, or 73.8 per cent. This industry was started in 1821, two years before the milling industry began. It led the latter industry until La Croix's invention stimulated the production of wheat in the Northwest and advanced milling to the foremost place among the manufacturing industries of Minnesota. Minnesota is one of the leading lumber-producing states of the nation, its characteristic products being white and Norway pine. Within its borders the state now includes, in all probability, a greater quantity of merchantable forest pine than any other state. The timber country is studded with innumerable small lakes and streams, many of them connected with the St. Louis and Cloquet rivers, or with Lake Superior. The Minnesota lumber mills are also reached by large rafts of logs from the northern and southern shores of Lake Superior. In 1900 the quantity of lumber sawed in the state, not including lath, shingles, etc., was 1,308,902,000 feet; in Minneapolis, the great center of lumber manufacture in the state, it was 616,000,000 feet.

There were 596 establishments engaged in the factory manufacture of cheese, butter, and condensed milk, the industry third in rank, with 740 wage-earners, and products valued at $8,479,896. In 1890 there were 106 establishments, 783 wage-earners, and products valued at $2,958,476. The increase in the value of products during the decade was $5,521,420, or 186.6 per cent. One of the features of the revolution in Minnesota agriculture in the past thirty years is the development of the dairy industry. This growth has been accompanied, in the last twenty years, by a marked increase of cheese, butter, and condensed milk factories, which in 1880 numbered only 27, with a capital of $71,149, and products valued at $62,094. This increase marks the growth of dairying on farms, and the substitution of a system of diversified farming for the old single-crop husbandry. The great value of the products reflects the fact that Minnesota butter, like Minnesota flour, is an important adjunct to the prosperity of the farmers and the development of the state.

There were 20 establishments engaged in slaughtering and meat packing in 1900, with 668 wage-earners, and products valued at $7,810,555. In 1890 there were 18 establishments, 222 wage-earners, and products valued at $2,510,431. The increase in the value of products during the decade was $5,300,124, or 211.1 per cent. The slaughtering industry has shown even greater development in the last decade than the making of butter and cheese in factories. Its development is due in part to the factors that have contributed to the growth of the dairy industry, and in part to the favorable location of St. Paul and Minneapolis with reference to the slaughtering of cattle from the great ranges of the far West.

There were 39 establishments engaged in car construction and general shop work of steam railroad companies in 1900, with 4,700 wage-earners, and products valued at $6,319,876. In 1890 there were 18 establishments, 1,951 wage-earners, and products valued at $2,628,174. The increase in the value of products during the decade was $3,691,702, or 140.5 per cent. The marked increase in this industry is a result of the growth of the state's commercial cities, which are the centers of numerous and rapidly developing lines of railroads.

There were 175 establishments engaged in the manufacture of foundry and machine shop products in 1900, with 3,139 wage-earners, and products valued at $5,975,077. In 1890 there were 92 establishments, 1,289 wage-earners, and products valued at $2,835,024. The increase in the value of products during the decade was $3,140,053, or 110.8 per cent. Few industries in the state show a greater progress than this. The increased use of iron and steel in all industries, and the transportation facilities of the 3 leading cities of Minnesota, contributed to its rapid and continuous growth. Minnesota has vast deposits of red hematite. Only one state in the Union mined more iron ore in 1899 than Minnesota, and yet very little has ever been smelted within the state, because there are no coal and limestone deposits in proximity to the ore.

There were 560 establishments engaged in the printing and publishing of newspapers and periodicals in 1900, with 2,714 wage-earners, and products valued at $5,790,148. In 1890 there were 341 establishments, 2,143 wage-earners, and products valued at $4,157,026. The increase in the value of products during the decade was $1,633,122, or 39.3 per cent. The growth of the 3 commercial cities, Duluth, Minneapolis, and St. Paul, has been attended by a natural development of the newspaper business in these cities and also in the minor cities of the state.

There were 78 establishments engaged in the manufacture of malt liquors in 1900, with 856 wage-earners, and products valued at $4,456,928. In 1890 there were 66 establishments, 548 wage-earners, and products valued at $2,206,366. The increase in the value of products during the decade was $2,250,562, or 102 per cent.

There were 61 establishments engaged in the manufacture of planing mill products, including sash, doors, and blinds, in 1900, with 1,639 wage-earners, and products valued at $3,988,276. In 1890 there were 54 establishments, 2,530 wage-earners, and products valued at $4,943,451. The decrease in the value of products during the decade was $955,175, or 19.3 per cent.

There were 16 establishments engaged in the manufacture of boots and shoes, factory product, with 2,025 wage-earners, and products valued at $3,615,801. In 1890 there were 8 establishments, 1,099 wage-earners, and products valued at $2,032,814. The increase in the value of products during the decade was $1,582,987, or 77.9 per cent. When, in the decade 1870–1880, the shoemaking industries, centralized in Massachusetts, began to develop in other sections, Minnesota profited by the change, and in 1880 had 5 factories. The facilities furnished by the manufacturing centers of Minnesota for securing raw materials at a low cost for transportation, and the natural advantages of the same centers for marketing the goods in flourishing agricultural communities, have assisted in this development.

There were 5 establishments engaged in the manufacture of linseed oil in 1900, with 155 wage-earners, and products valued at $3,272,598. In 1890 there were 3 establishments, 90 wage-earners, and products valued at $1,547,719. The increase in the value of products during the decade was $1,724,879, or 111.4 per cent. The stimulus given to agriculture by the introduction of the new process of milling wheat has been followed, in many parts of the state, by a radical revolution in the methods of agriculture, which is reflected in manufactures. Flaxseed has been found most profitable when rotated with other cereals, and its cultivation has led to the establishment of linseed-oil mills at the centers of wheat milling.

URBAN MANUFACTURES.

Table 4 shows the totals for the manufacturing and mechanical industries of the cities of Duluth, Minneapolis, and St. Paul, as returned at the censuses of 1890 and 1900, with the percentages of increase.

TABLE 4.—COMPARATIVE SUMMARY, DULUTH, MINNEAPOLIS, AND ST. PAUL, 1890 AND 1900, WITH PER CENT OF INCREASE.

	Year.	Number of establishments.	Capital.	WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
				Average number.	Total wages.			
The State	1900	11,114	$165,832,246	77,234	$35,484,825	$13,273,648	$173,425,615	$262,655,881
	1890	7,505	127,686,618	69,790	30,371,123	12,136,612	118,481,941	192,033,478
Per cent of increase		48.1	29.9	10.7	16.8	9.4	46.4	36.8
Duluth	1900	433	8,872,940	3,998	2,145,444	572,266	5,861,499	10,628,957
	1890	278	5,332,447	3,315	1,750,577	412,496	5,435,654	8,811,723
Per cent of increase		55.8	66.4	20.6	22.6	38.7	7.8	20.6
Minneapolis	1900	2,368	57,708,204	26,608	12,708,523	5,237,162	78,175,735	110,943,043
	1890	2,723	42,643,764	23,703	11,674,553	3,682,928	54,592,210	82,922,974
Per cent of increase		[1] 13.0	35.3	12.3	8.9	42.2	43.2	33.8
St. Paul	1900	1,591	28,208,389	17,593	7,669,805	3,668,047	19,464,570	38,541,030
	1890	1,442	22,501,211	16,279	8,394,550	1,740,518	15,867,573	33,035,073
Per cent of increase		10.3	25.4	8.1	[1] 8.6	110.7	22.7	16.7
Total for 3 cities	1900	4,392	94,789,533	48,199	22,523,772	9,477,475	103,501,804	160,113,030
	1890	4,443	70,477,422	43,297	21,819,680	5,835,942	75,895,437	124,769,770
Per cent of increase		[1] 1.1	34.5	11.3	3.2	62.4	36.4	28.3
Per cent of 3 cities to total for state	1900	39.5	57.2	62.4	63.5	71.4	59.7	61.0
	1890	59.2	55.2	62.0	71.8	48.1	64.1	65.0

[1] Decrease.

It appears from Table 4 that there has been an increase during the past decade in the manufactures of the 3 principal cities of the state. Although the number of establishments decreased from 4,443 to 4,392, or 1.1 per cent, the average number of wage-earners increased from 43,297 to 48,199, or 11.3 per cent, and the value of products from $124,769,770 to $160,113,030, or 28.3 per cent.

In Minneapolis, the leading manufacturing city in the state, the number of establishments decreased from 2,723 to 2,368, or 13 per cent, but the number of wage-earners increased from 23,703 to 26,608, or 12.3 per cent, and the value of products from $82,922,974 to $110,943,043, or 33.8 per cent. The number of establishments, number of wage-earners, and value of products in this city in 1900 constituted 21.3, 34.5, and 42.2 per cent, respectively, of the totals for the state. Minneapolis leads in two of the most important manufacturing industries of the state, the manufacture of flour and grist mill products, and the manufacture of lumber and timber products. It was in these industries that the city found the first important factors in its development. Minneapolis holds a prominent position also in the manufacture of foundry and machine shop products, malt liquors, and linseed oil.

In St. Paul the number of establishments increased from 1,442 to 1,591, or 10.3 per cent; the number of wage-earners from 16,279 to 17,593, or 8.1 per cent; and the value of products from $33,035,073 to $38,541,030, or 16.7 per cent. St. Paul early became the principal northwestern depot of the Hudson Bay Fur Company, and from that beginning it has developed into an important fur manufacturing center. It also leads the cities of the state in the factory manufacture of boots and shoes, and of men's clothing; in the printing and publishing of newspapers and periodicals; and in railroad repair shop work.

Duluth made the greatest gains in number of establishments, capital, number of wage-earners, and wages. The city is an important center for the manufacture of lumber. In 1900 the quantity sawed in Duluth was 305,000,000 feet, the product of what is known as the Duluth district being much larger.

Table 5 presents the totals for the manufacturing industries of the 27 cities and towns withdrawn from the enumerators, places them in comparison with the totals for the entire state and the state exclusive of these cities and towns, and shows their rank in population and in value of products.

TABLE 5.—URBAN MANUFACTURES.

	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	PRODUCTS.			POPULATION.		
				Average number.	Total wages.			Value.	Rank.	Per cent of total.	Total.	Rank.	Per cent of total.
Total for state	11,114	$165,832,246	12,253	77,234	$35,484,825	$13,273,648	$173,425,615	$262,655,881	-------	100.0	[1] 1,741,986	-------	100.0
Total for urban manufactures	6,112	125,497,881	6,836	61,880	28,490,929	11,389,763	134,007,167	205,170,094	-------	78.1	564,487	-------	32.4
Albert Lea	83	466,426	98	336	146,104	28,777	402,032	750,100	23	0.3	4,500	18	0.3
Anoka	47	620,833	57	291	123,908	56,246	1,451,288	1,847,812	14	0.7	3,769	21	0.2
Austin	69	469,671	85	265	107,206	26,065	474,286	757,455	22	0.3	5,474	15	0.3
Brainerd	54	1,924,045	62	989	528,012	102,130	1,112,087	1,943,962	12	0.7	7,524	10	0.4
Crookston	60	761,047	67	349	191,410	59,071	635,330	1,102,064	16	0.4	5,359	17	0.3
Duluth	433	8,872,940	478	3,998	2,145,444	572,266	5,861,499	10,628,957	3	4.1	52,969	3	3.0
Faribault	102	880,867	123	482	222,234	47,852	2,014,715	2,687,312	7	1.0	7,868	8	0.5
Fergus Falls	91	429,254	108	264	114,367	43,892	685,883	1,062,397	17	0.4	6,072	12	0.4
Hastings	59	238,372	65	172	70,764	36,872	1,024,625	1,270,209	15	0.5	3,811	20	0.2
Little Falls	52	2,508,745	53	603	264,555	93,261	1,416,892	2,139,427	10	0.8	5,774	13	0.3
Mankato	135	1,371,907	162	683	242,742	87,620	1,513,182	2,242,000	9	0.8	10,599	6	0.6
Minneapolis	2,368	57,708,204	2,603	26,608	12,708,523	5,237,162	78,175,735	110,943,043	1	42.2	202,718	1	11.6
Moorhead	23	134,031	24	77	39,010	9,525	372,341	490,243	27	0.2	3,730	22	0.2
New Ulm	90	1,097,616	111	428	183,987	128,660	1,706,462	2,328,347	8	0.9	5,403	16	0.3
Owatonna	82	434,260	97	257	108,935	34,582	486,828	788,927	20	0.3	5,561	14	0.3
Red Wing	79	1,657,336	84	765	297,140	109,907	1,388,140	2,120,303	11	0.8	7,525	9	0.4
Rochester	116	471,994	144	331	125,891	65,489	386,215	728,166	24	0.3	6,843	11	0.4
St. Cloud	96	789,946	112	650	343,062	63,422	1,229,824	1,895,202	13	0.7	8,663	7	0.5
St. Louis Park	6	1,228,875	6	224	133,660	28,601	271,292	606,736	25	0.2	1,325	27	0.1
St. Paul	1,591	28,208,389	1,747	17,593	7,669,805	3,668,047	19,464,570	38,541,030	2	14.7	163,065	2	9.4
St. Peter	61	374,760	74	199	77,085	34,815	274,104	509,471	26	0.2	4,302	19	0.3
South St. Paul	11	927,504	6	573	262,485	61,437	5,168,573	5,714,757	5	2.2	2,322	25	0.1
Stillwater	114	5,451,915	128	2,803	1,122,330	203,523	2,508,559	4,904,792	6	1.9	12,318	5	0.7
Wabasha	44	349,984	52	83	39,449	35,646	581,886	761,165	21	0.3	2,523	24	0.2
Waseca	69	260,614	92	172	83,292	15,749	767,954	976,007	18	0.4	3,103	23	0.2
West Minneapolis	15	1,665,907	16	476	221,129	134,959	345,070	853,828	19	0.3	1,648	26	0.1
Winona	162	6,192,386	182	2,214	928,400	404,187	4,292,845	6,576,382	4	2.5	19,714	4	1.1
Total for state exclusive of urban manufactures	5,002	40,334,415	5,417	15,354	6,993,896	1,883,885	39,418,448	57,485,787	-------	21.9	1,177,499	-------	67.6
Per cent of urban manufactures to total for state	55.0	75.7	55.8	80.1	80.3	85.8	77.3	78.1	-------	-------	32.4	-------	-------

[1] Exclusive of 9,408 Indians and other persons on Indian reservations, which classes were not included at previous censuses.

Of the 11,114 establishments in the state, 6,112, or 55 per cent, were located in these 27 cities and towns. They furnished employment to 61,880 wage-earners, or 80.1 per cent of the total for the state; and the value of their products, $205,170,094, formed 78.1 per cent of the total for the state.

Table 6 shows the totals for the state by counties.

Table 7 shows the totals for the state by specified industries.

Table 8 shows the totals for the cities of Duluth, Minneapolis, and St. Paul by specified industries.

Table 9 shows the totals for all industries in the cities and towns withdrawn from the enumerators, exclusive of those shown in Table 8.

TABLE 6.—MANUFACTURES

	COUNTIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
1	The State	11,114	$165,882,246	$29,548,954	$19,850,136	$37,958,943	$78,479,213	12,253	7,319	$6,554,424	77,234	$35,484,825
2	Aitkin	25	321,523	127,845	12,475	58,696	127,507	32	3	1,574	130	63,337
3	Anoka	58	1,235,394	62,345	153,877	322,909	696,763	62	29	29,791	590	236,485
4	Becker	42	443,038	52,555	40,065	132,100	218,318	61	9	8,945	167	74,630
5	Beltrami	53	391,014	75,767	16,775	125,325	173,147	77	13	8,430	339	126,997
6	Benton	30	370,017	47,700	30,555	84,525	207,237	33	14	8,632	214	103,685
7	Bigstone	51	141,594	12,000	25,000	52,360	52,234	59	3	2,100	88	41,769
8	Blue Earth	234	1,959,638	322,455	339,339	581,593	716,251	265	137	114,779	1,313	487,470
9	Brown	170	1,838,700	97,910	550,520	479,572	710,698	185	60	67,979	679	298,726
10	Carlton	23	5,890,086	3,519,577	164,593	646,053	1,559,863	19	50	66,979	1,051	491,607
11	Carver	98	381,856	39,040	84,714	137,438	120,664	121	9	2,072	160	64,553
12	Cass	23	2,559,174	672,095	109,230	328,796	1,449,053	30	19	36,965	689	464,461
13	Chippewa	58	183,719	17,120	43,480	55,085	68,034	62	9	5,990	87	33,186
14	Chisago	64	297,116	30,386	74,238	84,079	108,413	69	15	5,840	107	44,468
15	Clay	73	271,121	28,395	57,345	118,056	67,325	80	12	9,038	202	110,291
16	Cook	5	40,207	1,600	3,250	7,100	28,257	3	3	950	117	60,750
17	Cottonwood	32	148,835	10,570	30,765	61,970	40,580	31	9	3,385	38	16,680
18	Crow Wing	68	2,034,144	214,000	221,320	460,811	1,138,013	78	58	63,688	1,205	594,130
19	Dakota	110	1,378,695	34,270	222,475	190,323	931,627	116	110	93,550	864	389,624
20	Dodge	67	200,593	22,315	43,035	71,175	64,068	69	9	3,380	102	45,227
21	Douglas	88	370,670	42,485	96,286	111,722	120,227	96	11	8,405	151	57,998
22	Faribault	108	604,462	35,102	128,977	185,572	254,811	99	43	25,857	213	96,437
23	Fillmore	205	526,363	51,231	127,965	152,935	194,232	237	14	6,345	240	89,318
24	Freeborn	157	662,182	78,530	134,855	185,412	263,385	152	44	18,829	416	182,763
25	Goodhue	192	1,970,308	174,141	409,694	408,072	978,401	202	91	86,384	917	358,106
26	Grant	29	76,969	4,310	20,365	26,745	25,549	29			23	8,548
27	Hennepin	2,463	60,734,343	8,515,563	7,220,973	14,256,080	30,741,727	2,697	2,735	2,570,218	27,367	18,081,514
28	Houston	75	216,790	29,050	77,585	67,350	42,805	91	4	1,380	64	23,184
29	Hubbard	34	1,672,536	994,670	40,105	131,390	506,371	37	24	26,080	458	196,855
30	Isanti	39	120,930	5,235	27,425	47,355	40,915	34	7	1,645	47	20,693
31	Itasca	32	312,704	13,320	7,120	176,040	116,224	36	9	7,290	434	212,761
32	Jackson	68	188,477	14,745	43,277	74,741	55,714	70	10	1,085	61	26,689
33	Kanabec	19	55,345	5,260	6,105	23,316	20,665	29	1	159	27	10,370
34	Kandiyohi	82	271,972	29,655	57,011	100,665	84,641	78	19	4,457	129	60,318
35	Kittson	18	56,345	6,800	10,030	14,660	24,855	25			12	5,039
36	Lac qui Parle	62	139,954	12,425	27,757	54,649	45,123	75	5	1,600	34	15,994
37	Lake	5	2,010,782	968,300	365,450	224,698	452,334	2	14	10,630	415	209,686
38	Lesueur	122	721,647	67,890	145,943	210,158	297,656	134	31	38,621	252	126,607
39	Lincoln	20	63,280	7,540	16,000	21,585	18,155	23			14	6,720
40	Lyon	82	282,609	25,360	45,350	84,339	127,560	94	8	5,860	161	67,264
41	McLeod	138	422,558	37,277	92,320	140,210	152,751	154	12	3,532	185	66,364
42	Marshall	49	186,290	15,811	35,079	48,198	87,202	54	4	3,400	50	23,097
43	Martin	84	279,284	39,336	64,669	87,783	87,496	78	21	4,242	160	65,085
44	Meeker	98	278,173	25,170	63,574	101,767	87,662	97	12	2,150	188	53,287
45	Millelacs	49	1,419,524	562,145	37,730	126,372	693,277	54	15	15,050	259	142,680
46	Morrison	102	2,662,284	1,392,740	136,780	274,341	858,423	112	32	41,705	663	288,149
47	Mower	146	651,295	56,130	184,286	165,684	245,195	167	30	15,661	341	141,906
48	Murray	55	145,556	17,755	32,975	46,748	48,078	60	3	737	57	27,236
49	Nicollet	100	493,836	50,795	107,713	115,105	220,223	109	21	11,856	265	100,825
50	Nobles	56	188,088	15,774	37,490	42,160	42,664	66	1	900	61	24,093
51	Norman	44	197,444	12,389	26,227	52,371	106,457	48	6	3,460	59	28,630
52	Olmsted	181	623,441	57,755	117,071	185,613	263,005	208	26	12,731	418	163,863
53	Ottertail	188	753,068	63,695	157,230	236,523	295,620	222	23	22,313	374	157,519
54	Pine	42	1,236,243	284,550	73,845	226,829	646,019	53	28	26,785	358	166,573
55	Pipestone	51	119,920	11,950	27,160	41,000	39,810	67	6	2,425	73	31,358
56	Polk	122	1,230,365	132,100	193,712	296,594	607,959	128	45	35,770	536	282,248
57	Pope	30	59,404	2,672	13,735	26,485	16,512	34			15	6,260
58	Ramsey	1,605	28,890,285	2,178,917	3,859,616	8,375,263	14,476,489	1,757	2,326	2,054,400	18,065	7,878,578
59	Red Lake	43	1,744,097	879,195	59,810	209,395	595,697	44	24	24,410	342	171,695
60	Redwood	85	216,830	18,660	48,653	87,946	61,571	91	9	2,564	73	31,979
61	Renville	95	346,516	21,654	70,825	141,619	112,418	104	19	7,548	96	41,319
62	Rice	198	1,144,731	109,835	229,119	373,327	432,450	223	84	62,866	614	274,910
63	Rock	31	93,506	6,133	26,115	32,180	29,078	34	2	3,000	43	15,474
64	Roseau	19	45,778	3,255	4,972	29,816	7,735	32	1	420	23	9,945
65	St. Louis	504	11,699,793	3,714,112	900,322	2,381,144	4,704,215	539	321	324,381	6,044	3,116,993
66	Scott	101	572,333	56,067	142,800	175,978	197,488	116	23	19,396	280	110,255
67	Sherburne	29	144,910	16,110	22,000	40,425	66,375	27	4	3,940	72	26,798
68	Sibley	73	244,300	22,660	61,325	82,710	77,605	80	9	2,894	34	35,624
69	Stearns	283	1,626,361	176,360	305,590	476,019	668,392	323	80	57,229	1,042	503,530
70	Steele	118	568,999	61,640	110,725	154,656	241,978	116	39	22,354	310	136,111
71	Stevens	17	55,487	3,925	8,500	24,740	18,322	21	1	120	28	12,617
72	Swift	76	246,196	21,465	48,000	80,360	96,371	83	7	3,915	93	37,929
73	Todd	45	193,626	33,945	35,315	75,240	49,126	51			79	26,016
74	Traverse	46	113,740	12,915	20,475	30,265	50,085	52	3	2,370	38	20,373
75	Wabasha	153	744,853	48,670	95,632	158,366	442,185	184	17	12,364	286	122,811
76	Wadena	53	174,382	13,020	23,800	64,014	73,548	65	1	1,200	63	25,500
77	Waseca	124	624,667	28,845	94,667	178,350	322,805	138	35	24,174	246	125,593
78	Washington	157	6,977,224	1,842,963	241,778	734,099	4,158,384	168	147	166,274	3,045	1,231,915
79	Watonwan	75	245,755	11,405	44,400	82,900	107,050	89	14	5,804	129	57,310

BY COUNTIES: 1900.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
66,889	$32,905,947	9,553	$2,451,400	792	$127,478	$13,273,648	$1,554,035	$846,570	$9,128,314	$1,744,729	$173,425,615	$170,851,640	$2,573,975	$262,655,881	1
128	63,019	2	818			9,383	896	2,038	6,349	100	109,751	108,696	1,055	252,106	2
553	227,995	37	8,490			108,569	4,993	6,446	88,170	13,960	1,962,934	1,871,685	91,249	2,381,028	3
162	73,218	4	1,212	1	200	18,410	1,508	1,856	11,693	3,353	456,642	452,902	3,740	647,694	4
331	125,257	7	1,640	1	100	9,356	1,844	2,291	5,221		291,608	290,964	644	407,707	5
212	103,240	1	245	1	200	12,496	1,007	2,194	9,295		376,121	372,784	3,337	648,088	6
86	41,324	2	445			16,167	1,594	1,574	12,999		406,682	395,960	10,722	526,566	7
1,125	447,974	140	32,647	48	6,849	104,879	15,788	12,986	74,839	1,271	2,280,456	2,221,385	59,071	3,464,174	8
622	285,652	52	12,416	5	658	173,125	11,911	8,428	150,292	2,494	3,213,412	3,153,515	59,897	4,195,201	9
1,042	490,232	4	650	5	725	194,635	314	43,888	150,083	350	2,398,697	2,389,316	9,381	3,857,281	10
154	63,572	1	200	5	781	10,726	1,149	1,784	7,318	475	606,338	576,272	30,066	838,899	11
639	464,461					115,468	248	18,945	96,275		1,632,448	1,630,378	2,070	2,597,235	12
78	36,522	6	1,324	3	840	11,556	1,167	1,516	8,788	85	410,333	400,814	9,519	559,085	13
102	43,742	3	430	2	296	13,085	847	1,841	10,397		436,885	426,014	10,871	577,965	14
192	108,859	4	884	6	548	13,731	2,971	1,396	9,359	5	525,667	506,102	19,565	769,130	15
117	60,750					1,068		66	1,002		37,971	37,953	18	118,762	16
34	15,630	4	1,050			4,232	953	1,010	2,269		174,881	168,253	6,628	231,357	17
1,187	589,825	12	3,425	6	880	115,833	5,935	7,459	102,439		1,161,080	1,142,792	18,288	2,085,645	18
834	383,260	19	4,282	11	2,082	106,019	13,766	9,014	80,489	2,750	6,411,830	6,365,322	46,508	7,349,321	19
98	44,444	3	679	1	104	10,471	1,300	1,264	7,077	830	314,901	306,964	7,937	448,164	20
137	56,032	11	1,630	3	336	43,418	2,207	3,048	38,163		433,896	424,000	9,896	666,413	21
193	92,269	10	2,328	10	1,840	46,596	13,272	5,255	25,584	2,485	1,053,771	1,025,328	28,443	1,420,758	22
202	82,513	36	6,609	2	196	29,145	6,817	4,189	15,064	3,125	566,225	555,360	10,865	893,969	23
360	170,442	52	11,557	4	764	38,158	10,088	3,744	23,989	387	1,065,017	1,037,025	27,992	1,580,734	24
875	348,709	38	8,928	4	469	128,990	16,935	16,168	95,654	233	2,158,002	2,061,956	96,046	3,139,582	25
13	7,352	3	880	2	316	5,444	818	800	3,826		70,052	68,445	1,607	109,569	26
23,082	11,988,677	4,094	1,061,329	191	36,508	5,406,281	672,666	220,425	3,714,780	798,410	78,950,897	78,188,822	762,075	112,655,633	27
49	20,781	11	1,590	4	813	8,995	874	1,500	6,591	30	240,700	236,554	4,146	352,869	28
451	195,354	7	1,501			10,230	1,334	4,156	4,740		683,928	683,168	760	1,021,699	29
44	20,023	3	670			4,952	503	521	3,828	100	156,068	151,919	4,149	225,514	30
431	212,178	1	408	2	180	22,617	1,983	1,861	18,773		527,366	526,936	430	891,612	31
52	24,773	6	1,370	3	546	9,736	2,705	1,200	5,745	86	185,569	177,470	8,099	283,841	32
26	10,170	1	200			1,879	506	171	1,176	26	66,057	64,762	1,295	106,964	33
112	56,417	15	3,653	2	248	15,537	2,336	1,724	11,411	66	432,391	418,067	14,324	607,374	34
12	5,039					2,156	508	238	1,410		39,546	37,706	1,840	66,054	35
33	15,474	1	520			7,139	1,982	933	4,074	150	123,307	118,527	4,780	208,468	36
415	209,686					20,995	2,530	4,500	13,965		487,592	480,834	6,758	895,327	37
241	124,628	4	1,263	7	716	49,240	2,489	3,334	43,417		1,718,679	1,687,105	31,574	2,155,737	38
13	6,520	1	200			2,218	148	358	1,737		83,905	81,936	1,969	116,608	39
148	63,908	13	3,356			13,576	4,094	2,692	6,633	157	553,829	540,416	13,413	772,247	40
153	61,647	27	4,054	5	663	36,074	3,412	2,273	29,621	768	618,681	603,362	15,269	894,477	41
49	22,647	1	450			7,903	1,585	1,569	4,749		201,881	194,434	7,447	284,719	42
138	61,050	21	3,915	1	120	16,955	2,690	1,603	11,086	1,576	373,651	364,012	9,639	563,371	43
120	50,876	15	2,006	3	405	21,247	3,728	1,819	15,602	98	496,958	484,636	12,322	707,794	44
256	141,880	3	800			37,089	1,576	25,748	9,765		669,792	661,693	8,099	1,046,046	45
645	284,328	12	3,164	6	657	98,690	6,105	42,278	49,292	1,015	1,577,612	1,556,946	20,666	2,386,488	46
285	131,467	53	10,099	3	340	35,744	7,799	2,531	25,389	25	840,491	804,574	35,917	1,253,148	47
49	26,015	7	1,171	1	50	5,151	1,564	844	2,580	213	135,197	131,636	3,561	214,400	48
225	91,956	32	7,630	8	1,239	39,389	4,182	2,672	30,415	2,120	491,270	472,662	18,608	801,959	49
56	22,703	4	1,190	1	200	7,657	1,675	811	5,171		121,916	116,772	5,144	208,400	50
56	28,140	2	350	1	140	8,726	566	1,212	6,748	200	204,297	201,940	2,357	296,865	51
365	155,124	47	8,109	6	630	72,105	9,837	4,092	41,678	16,498	697,022	677,305	19,717	1,160,379	52
335	146,939	30	8,238	9	2,342	61,679	8,121	5,672	40,226	7,660	1,125,157	1,103,674	21,483	1,711,603	53
353	165,457	1	156	4	960	63,778	833	5,958	56,887	100	805,749	802,980	2,769	1,223,558	54
57	27,263	14	3,757	2	338	7,250	2,384	832	3,627	407	128,975	126,235	2,740	225,960	55
507	274,273	23	7,235	6	740	84,237	6,080	8,619	67,938	1,600	977,750	951,438	26,312	1,686,260	56
14	6,070	1	190			1,734	707	343	678	6	79,666	76,990	2,676	113,871	57
13,861	6,791,819	3,924	1,046,326	280	40,433	3,719,450	436,307	117,587	2,372,703	792,853	19,981,846	19,594,115	387,731	39,425,798	58
336	170,874	1	250	5	571	76,784	3,159	9,981	63,644		1,072,206	1,069,418	2,788	1,436,352	59
32	30,031	7	1,369	4	519	11,451	2,803	1,176	7,257	215	301,602	294,260	7,342	442,577	60
84	38,960	8	1,609	4	750	19,566	2,860	1,670	14,831	205	575,313	556,973	18,340	774,098	61
539	261,277	68	12,725	7	908	64,659	14,820	6,982	40,241	2,616	2,895,995	2,856,873	39,122	3,253,735	62
36	14,104	4	900	3	470	5,565	682	760	4,123		98,296	94,680	3,616	158,713	63
22	9,561	1	384			2,368	152	653	1,563		59,250	58,036	1,214	88,346	64
5,716	3,031,855	281	73,136	47	12,002	744,808	116,247	63,443	500,468	64,650	8,709,225	8,519,563	189,662	15,177,070	65
272	108,990	4	765	4	500	48,041	2,419	3,784	41,574	314	1,102,399	1,075,475	26,924	1,529,022	66
71	26,648	1	150			10,216	784	1,055	8,365	12	277,247	275,735	1,512	340,643	67
81	35,234	1	250	2	140	12,937	2,080	1,324	9,475	58	398,547	386,654	11,893	549,769	68
1,004	494,421	34	8,755	4	354	124,757	13,341	11,876	88,577	10,963	2,476,785	2,426,847	49,938	3,622,353	69
293	132,851	15	2,905	2	355	40,068	7,754	2,975	29,290	49	1,015,980	994,598	21,382	1,421,078	70
26	12,337	1	200	1	80	4,282	700	343	3,239		55,310	53,900	1,410	96,660	71
30	35,524	9	2,125	4	280	12,291	3,333	1,625	7,333		429,113	417,723	11,390	579,213	72
75	25,336	3	500	1	180	7,816	218	1,189	6,334	75	121,786	115,093	6,693	200,678	73
34	20,183	3	600	1	90	6,669	1,994	687	3,988		119,940	117,251	2,689	188,799	74
262	118,053	22	4,576	2	182	55,222	6,798	3,436	44,313	675	950,414	934,201	16,213	1,361,668	75
59	24,850	4	650			10,764	2,247	1,187	6,960	420	156,202	153,379	2,823	260,809	76
229	122,315	13	2,866	4	412	49,678	5,328	3,311	41,039		1,854,195	1,821,203	32,992	2,240,479	77
2,996	1,219,537	48	12,328	1	50	263,613	19,492	42,521	200,835	765	2,942,657	2,925,385	17,272	5,530,969	78
110	53,496	18	3,564	1	250	18,455	5,933	1,325	11,197		478,554	466,567	11,987	656,211	79

TABLE 6.—MANUFACTURES

	COUNTIES AND MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
80	Wilkin	28	$102,860	$6,840	$33,460	$31,550	$31,010	31	3	$2,520	48	$26,922
81	*Winona*	235	6,435,150	967,512	612,882	942,279	3,912,477	259	209	194,061	2,305	969,054
82	Wright	137	360,031	29,790	69,995	167,835	92,411	156	13	3,221	185	68,459
83	Yellow Medicine	66	182,428	15,460	41,490	59,235	66,243	77	2	1,375	62	28,407

TABLE 7.—MANUFACTURES BY

1	All industries	11,114	$165,832,246	$29,548,954	$19,850,136	$37,953,943	$78,479,213	12,253	7,319	$6,554,424	77,234	$35,484,825
2	Agricultural implements	18	3,730,055	111,066	319,719	110,569	3,188,701	10	182	189,832	928	423,054
3	Artificial limbs	9	23,036		100	10,223	12,713	10	15	14,048	26	14,610
4	Awnings, tents, and sails	18	110,135	14,600	6,500	6,660	82,375	19	19	13,622	105	39,515
5	Baskets, and rattan and willow ware	4	820	25	50	220	525	4				
6	Belting and hose, leather	3	179,840	8,800	10,365	24,783	135,892	1	14	21,056	50	28,241
7	Bicycle and tricycle repairing	200	201,014	15,415	15,820	65,554	104,225	285	11	4,341	212	85,878
8	*Bicycles and tricycles*	4	38,205			7,433	30,772	4	2	2,320	47	8,440
9	Blacksmithing and wheelwrighting	1,362	1,685,778	309,798	413,487	361,361	601,132	1,580	4	1,704	827	387,487
10	Bookbinding and blank book making	20	110,325			65,300	45,025	19	16	10,516	201	92,628
11	Boots and shoes, custom work and repairing.	468	193,829	41,000	48,980	50,384	53,565	498	1	180	170	73,700
12	Boots and shoes, factory product	16	2,237,540		2,100	337,236	1,898,204	18	146	154,945	2,025	719,231
13	Bottling	19	191,810	34,250	49,400	42,303	65,857	13	20	14,554	84	46,741
14	Boxes, cigar	4	25,500			8,500	17,000	4	3	1,780	44	13,960
15	Boxes, fancy and paper	4	158,559	3,000	6,000	49,699	99,860	5	16	14,012	234	61,293
16	Boxes, wooden packing	12	200,656	1,250	6,220	78,128	115,058	11	11	15,040	232	71,620
17	Brass castings and brass finishing	4	21,450			15,600	5,850	7	1	900	11	6,392
18	Bread and other bakery products	179	1,569,471	85,996	151,422	879,681	452,372	199	207	112,653	972	393,427
19	*Brick and tile*	104	1,040,656	348,158	211,435	170,670	310,393	125	34	22,890	849	328,890
20	Bridges	14	339,681	60,100	18,100	72,300	189,181	23	25	39,481	394	205,999
21	Brooms and brushes	27	82,619	7,905	8,755	7,135	58,824	31	10	5,600	92	45,920
22	Carpentering	454	1,685,466	123,040	119,020	208,936	1,234,470	511	74	73,821	3,913	2,030,151
23	Carpets, rag	22	13,748	1,150	2,725	7,045	2,828	25			39	13,292
24	Carpets, wood	4	7,500			900	6,600	6			27	13,370
25	Carriage and wagon materials	5	101,032	1,200	5,925	18,028	75,879	5	4	9,600	112	30,240
26	Carriages and sleds, children's	6	38,800	200	6,300	2,200	30,100	9	11	4,650	52	22,142
27	Carriages and wagons	194	1,860,594	216,095	321,456	215,456	1,107,587	258	50	49,724	1,066	461,295
28	Cars and general shop construction and repairs by steam railroad companies.	39	4,933,805	453,700	2,117,592	1,117,309	1,245,204		264	243,448	4,700	2,599,387
29	*Cheese, butter, and condensed milk,* factory product.	596	2,264,956	70,101	630,629	1,089,986	474,240	210	341	59,284	740	398,224
30	China decorating	10	11,260	100	500	595	10,065	11	1	160	1	300
31	Cleansing and polishing preparations	6	8,265	2,000	1,300	265	4,700	7			3	822
32	Clothing, men's, custom work and repairing.	525	981,000	63,200	95,500	77,448	744,852	601	70	53,761	1,654	880,536
33	Clothing, men's, factory product	25	1,174,446	1,200		160,004	1,013,242	45	118	131,610	1,716	508,374
34	Clothing, women's, dressmaking	494	353,689	26,700	46,202	57,075	223,712	564	18	17,594	1,711	449,743
35	Clothing, women's, factory product	8	85,863			26,591	59,272	17	17	12,760	516	128,620
36	Coffee and spice, roasting and grinding	10	401,025		500	43,625	356,900	10	95	90,715	146	53,240
37	Coffins, burial cases, and undertakers' goods.	6	404,482	29,533	55,640	29,979	289,330	3	25	25,448	157	66,236
38	*Confectionery*	53	419,782	14,350	20,724	83,527	301,181	60	172	115,443	485	131,936
39	Cooperage	42	534,170	107,826	122,481	70,335	233,528	33	36	27,615	615	312,999
40	Corsets	6	30,950			3,700	27,250	8	2	480	49	12,392
41	Dyeing and cleaning	23	41,755	4,000	10,000	15,260	12,495	29	5	2,856	120	48,097
42	Electrical apparatus and supplies	12	79,935			29,360	50,575	11	13	7,976	86	45,340
43	Electrical construction and repairs	17	67,305	150	150	9,675	57,330	27	10	9,505	88	39,455
44	Electroplating	6	14,950			9,450	5,500	10	2	900	23	12,834
45	Enameling and enameled goods	4	3,050			1,075	1,975	5			13	5,625
46	*Engraving, steel, including plate printing.*	3	9,800			4,800	5,000	2	3	1,040	35	12,232
47	Engraving, wood	3	2,025			1,575	450	5			1	400
48	Fancy articles, not elsewhere specified	4	55,410			16,210	39,200	6	12	14,624	82	22,284
49	Flavoring extracts	10	210,799	50,000	40,000	8,360	112,439	16	16	12,717	27	11,722
50	Flouring and grist mill products	512	24,125,781	1,225,645	3,091,009	9,104,731	10,704,396	630	606	730,667	4,086	2,383,836
51	Food preparations	19	221,553	11,425	22,700	53,587	133,841	17	32	30,200	198	44,346
52	Foundry and machine shop products	175	4,267,322	482,359	588,920	1,220,148	1,975,895	199	298	290,563	3,139	1,512,579
53	Fruits and vegetables, canning and preserving.	4	43,650	1,800	10,000	11,300	20,550	3	2	1,600	45	8,523
54	Fur goods	46	1,235,579	26,000	18,100	52,350	1,139,129	55	147	121,218	847	320,183
55	Furniture, cabinetmaking, repairing, and upholstering.	152	406,191	51,750	67,915	51,453	235,073	186	20	8,600	343	250,656
56	Furniture, factory product	32	1,720,401	207,994	256,514	251,473	1,004,420	33	120	114,511	1,148	451,131
57	Furs, dressed	8	67,750	9,000	18,700	22,050	18,000	7	5	6,800	94	41,988
58	Gas and lamp fixtures	8	86,800			3,900	32,900	10	11	7,072	44	25,338
59	Gas, illuminating and heating	11	8,899,676	441,404	1,889,461	6,146,982	421,829		58	48,354	375	168,558
60	Gas machines and meters	5	26,300			2,550	23,750	5	6	3,145	14	8,002
61	Glass, cutting, staining, and ornamenting.	7	17,410		150	4,560	12,700	10	2	1,020	37	19,060

BY COUNTIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
42	$24,924	5	$948	1	$150	$4,331	$1,010	$830	$2,491	----------	$128,096	$124,866	$3,230	$195,368	80
2,131	939,374	148	26,721	26	2,959	414,435	22,805	51,460	332,620	$7,550	4,599,124	4,548,866	50,258	7,030,636	81
164	64,793	20	3,541	1	125	15,613	3,256	2,674	9,638	45	580,588	566,857	13,726	834,474	82
51	25,789	9	2,414	2	204	7,865	1,738	1,177	4,900	50	193,501	187,426	6,075	283,740	83

SPECIFIED INDUSTRIES: 1900.

66,889	$32,905,947	9,553	$2,451,400	792	$127,478	$13,273,648	$1,554,035	$846,570	$9,128,314	$1,744,729	$178,425,615	$170,851,640	$2,573,975	$262,655,881	1
924	421,637	3	1,300	1	117	241,388	1,504	7,792	229,602	2,490	718,604	695,273	23,331	1,763,780	2
25	14,410	1	200	----------	----------	9,401	2,104	135	7,162	----------	19,448	19,098	350	96,700	3
42	20,626	63	18,889	----------	----------	13,876	5,525	492	7,509	350	106,204	104,847	1,357	218,682	4
----------	----------	----------	----------	----------	----------	212	204	4	4	----------	917	827	90	2,780	5
50	28,241	----------	----------	----------	----------	6,155	2,100	967	3,088	----------	285,682	283,624	2,058	378,919	6
203	83,863	4	1,200	5	810	38,195	24,810	1,027	9,327	3,031	176,576	171,159	5,417	438,019	7
47	8,440	----------	----------	----------	----------	4,673	1,184	74	915	2,500	30,997	30,120	877	66,505	8
818	385,712	----------	----------	9	1,775	85,389	44,993	11,274	28,415	707	643,694	587,092	56,602	2,211,666	9
105	65,179	95	27,305	1	144	19,638	10,014	525	4,799	4,300	195,210	194,018	1,192	356,735	10
168	73,330	----------	----------	2	370	34,456	26,803	1,373	4,467	1,813	156,226	149,224	7,002	465,581	11
1,438	536,988	566	179,428	21	2,815	151,042	28,936	8,060	100,086	13,960	2,378,156	2,362,814	15,342	3,615,801	12
81	46,741	----------	----------	----------	----------	26,800	3,428	3,243	20,129	----------	184,970	181,240	3,730	363,351	13
16	6,840	28	7,120	----------	----------	2,133	1,446	122	565	----------	40,110	39,385	725	69,848	14
78	32,630	144	26,505	12	2,158	19,317	6,418	1,178	11,660	61	68,381	65,996	2,385	196,091	15
232	71,620	----------	----------	----------	----------	25,100	7,090	504	17,506	----------	238,132	233,767	4,365	401,704	16
11	6,392	----------	----------	----------	----------	1,480	1,125	45	310	----------	42,172	41,357	815	61,850	17
674	331,484	286	59,291	12	2,652	200,188	53,959	6,652	138,577	1,000	1,532,116	1,485,195	46,921	2,760,489	18
810	322,040	5	1,170	34	5,680	32,987	539	6,761	23,437	2,250	185,284	35,697	149,587	772,308	19
394	205,999	----------	----------	----------	----------	26,787	1,576	1,870	13,241	10,100	535,417	527,509	7,908	917,754	20
90	45,610	1	175	1	144	6,338	1,374	375	4,589	----------	110,091	109,317	774	196,548	21
3,909	2,029,151	1	260	3	740	809,749	22,764	5,555	64,605	716,825	5,169,694	5,143,847	25,847	9,216,347	22
22	8,613	17	4,679	----------	----------	2,659	1,487	83	1,089	----------	7,038	6,392	646	36,121	23
27	13,370	----------	----------	----------	----------	1,952	1,020	12	920	----------	17,077	16,800	277	36,750	24
111	30,140	1	100	----------	----------	985	220	144	621	----------	96,606	96,070	536	177,675	25
49	21,142	3	1,000	----------	----------	5,273	2,010	210	2,453	600	54,480	53,825	655	112,350	26
1,052	456,247	8	3,000	6	2,048	104,319	17,649	10,936	73,379	2,355	877,885	850,886	26,999	1,959,974	27
4,696	2,598,359	1	312	3	716	95,561	----------	15,031	80,530	----------	3,380,441	3,259,402	121,039	6,319,876	28
724	395,179	7	1,560	9	1,485	102,096	12,794	10,214	75,326	3,762	7,188,711	7,040,425	148,286	8,479,896	29
----------	----------	1	300	----------	----------	2,065	1,836	24	188	17	6,885	6,640	245	15,955	30
1	432	1	230	1	160	1,185	381	54	750	----------	7,595	7,540	55	15,040	31
1,443	809,795	208	70,275	3	466	205,980	113,753	5,854	46,838	39,535	1,086,409	1,066,726	19,683	2,880,488	32
135	91,899	1,501	395,695	80	20,780	127,382	22,780	3,692	50,960	50,000	1,376,545	1,364,687	11,858	2,182,101	33
61	48,876	1,644	400,288	6	579	82,918	64,226	1,482	16,560	650	553,850	543,926	9,924	1,536,703	34
19	14,980	492	113,030	5	610	23,899	6,186	213	17,410	90	185,510	183,640	1,870	427,000	35
85	40,340	61	12,900	----------	----------	83,100	13,107	3,108	66,885	----------	867,500	857,845	9,655	1,250,300	36
135	59,062	22	7,174	----------	----------	22,499	300	1,225	20,974	----------	147,345	144,205	3,140	277,487	37
202	81,030	261	47,999	22	2,907	60,504	29,601	1,953	28,950	----------	789,443	772,475	16,968	1,419,909	38
605	310,364	2	500	8	2,135	28,701	2,909	3,635	17,557	4,600	1,013,265	1,001,129	12,136	1,595,527	39
2	1,140	47	11,252	----------	----------	3,435	1,565	69	1,801	----------	17,700	17,450	250	43,850	40
77	35,851	40	11,746	3	500	16,964	6,484	471	10,009	----------	20,813	16,470	4,343	130,179	41
86	45,340	----------	----------	----------	----------	9,585	3,365	565	5,655	----------	121,782	117,923	3,859	228,076	42
86	38,798	1	480	1	177	17,793	4,621	212	2,960	10,000	140,317	139,607	710	265,738	43
23	12,834	----------	----------	----------	----------	2,573	1,824	44	705	----------	10,318	9,113	1,205	37,800	44
13	5,625	----------	----------	----------	----------	1,209	855	6	348	----------	1,612	1,382	230	15,056	45
20	8,532	15	3,700	----------	----------	3,102	1,930	30	1,142	----------	2,827	2,803	24	25,300	46
1	400	----------	----------	----------	----------	287	272	----------	15	----------	705	705	----------	6,300	47
41	14,804	41	7,480	----------	----------	3,238	2,220	49	469	500	43,672	43,402	270	96,250	48
17	8,880	9	2,512	1	330	6,199	1,642	910	3,647	----------	137,499	135,955	1,544	197,621	49
3,936	2,332,946	147	50,440	3	450	1,300,270	39,654	110,313	1,148,028	2,275	74,509,738	73,777,831	731,902	83,877,709	50
59	27,546	129	16,800	----------	----------	108,039	4,064	654	103,321	----------	488,343	482,069	6,274	700,509	51
3,121	1,507,163	12	4,520	6	896	306,025	45,001	23,645	220,124	17,255	2,753,777	2,616,577	137,200	5,975,077	52
17	6,670	26	1,590	2	263	1,452	75	166	1,211	----------	17,929	17,340	589	49,200	53
347	176,374	492	142,647	8	1,162	166,991	27,019	3,931	84,807	51,234	1,234,569	1,229,662	4,907	2,196,031	54
328	244,727	13	5,635	2	294	47,880	25,712	2,374	17,940	1,854	346,840	340,506	6,334	813,424	55
1,138	447,904	5	2,250	5	977	163,635	12,230	9,498	141,407	500	943,312	924,455	18,857	1,932,188	56
93	41,855	1	133	----------	----------	4,136	1,206	489	2,441	----------	30,219	26,671	3,548	125,396	57
36	23,330	7	2,040	1	468	6,826	3,715	126	2,885	100	34,153	33,482	671	96,152	58
375	168,558	----------	----------	----------	----------	146,195	100	29,461	116,634	----------	303,868	272,463	31,405	1,075,852	59
14	8,002	----------	----------	----------	----------	2,910	940	25	825	1,120	9,396	9,542	54	25,410	60
36	17,860	1	1,200	----------	----------	3,135	2,354	83	698	----------	23,963	23,335	628	66,489	61

TABLE 7.—MANUFACTURES BY

	Manufacturing and mechanical industries.	Number of establishments.	Capital. Total.	Capital. Land.	Capital. Buildings.	Capital. Machinery, tools, and implements.	Capital. Cash and sundries.	Proprietors and firm members.	Salaried officials, clerks, etc. Number.	Salaried officials, clerks, etc. Salaries.	Average number of wage-earners and total wages. Total. Average number.	Average number of wage-earners and total wages. Total. Wages.
62	Gloves and mittens	8	$13,487			$3,158	$10,279	11	2	$550	23	$4,197
63	Grease and tallow	6	18,700	$550	$2,600	10,750	4,800	7	1	1,500	13	7,220
64	Hairwork	11	44,765	150	50	1,150	43,415	13	4	1,302	17	5,235
65	Hand stamps	7	50,530			26,200	24,330	8	3	3,410	46	23,392
66	Hats and caps, not including fur hats and wool hats.	4	16,100		400	4,200	11,500	4	5	3,280	38	9,987
67	Hosiery and knit goods	8	484,004	29,000	78,000	120,853	256,151	1	21	26,657	293	77,589
68	Iron and steel	3	713,806	56,000	169,717	157,477	330,612		20	25,320	409	175,264
69	Ironwork, architectural and ornamental.	9	303,994	99,409	95,186	162,423	446,976	8	57	44,206	436	239,518
70	Jewelry	7	43,850		4,000	16,850	23,000	11	5	1,000	56	23,762
71	Leather, tanned, curried, and finished	9	23,060	1,765	12,000	4,090	5,205	9			18	3,550
72	Lime and cement	19	362,528	140,225	61,209	46,744	114,350	19	32	34,095	161	72,652
73	Liquors, malt	78	8,539,722	2,202,783	2,541,442	1,170,589	2,624,908	85	154	213,544	856	417,832
74	Lithographing and engraving	3	84,880			65,225	19,655	3	10	10,938	99	54,902
75	Lock and gun smithing	32	40,865	1,600	12,800	11,150	15,315	34	8	900	33	18,350
76	Looking-glass and picture frames	39	76,830	2,975	5,900	8,775	59,180	51	20	10,286	79	33,494
77	Lumber and timber products	438	52,095,923	19,295,059	1,547,491	6,105,488	25,147,885	543	594	751,057	15,140	7,140,571
78	Lumber, planing mill products, including sash, doors, and blinds.	61	2,489,374	431,633	347,603	439,418	1,270,720	75	143	127,288	1,639	667,091
79	Malt	5	314,387	13,600	169,000	23,071	108,716	2	9	11,160	28	13,855
80	Marble and stone work	52	812,603	195,979	69,877	221,524	325,223	59	54	56,502	1,311	611,697
81	Masonry, brick and stone	155	1,044,302	58,740	67,370	197,125	721,067	195	66	44,471	2,542	1,446,680
82	Mattresses and spring beds	15	335,681	40,600	51,945	31,395	211,741	20	23	18,377	214	84,300
83	Millinery and lace goods	5	77,900			7,650	70,250	7	11	6,750	135	34,466
84	Millinery, custom work	370	601,604	44,585	96,847	24,797	435,375	424	64	28,860	688	176,512
85	Mineral and soda waters	71	398,871	42,050	69,130	141,084	146,607	87	34	28,736	172	64,540
86	Models and patterns	8	12,555	800	1,150	5,025	5,580	11			11	5,925
87	Monuments and tombstones	80	352,961	53,025	32,710	30,430	236,796	97	32	27,774	280	145,190
88	Musical instruments and materials, not specified.	8	13,150			3,625	9,525	7	3	1,000	16	8,270
89	Musical instruments, organs and materials.	3	68,430	4,200	15,500	16,591	32,139	3	4	3,020	35	12,436
90	Oil, linseed	5	1,963,231	228,000	295,000	661,000	779,231		45	71,375	155	81,981
91	Oil, not elsewhere specified	7	122,162	16,000	15,000	9,300	81,862	5	26	12,082	30	11,667
92	Optical goods	12	30,663			11,550	19,113	15	11	11,593	24	14,280
93	Painting, house, sign, etc	287	509,027	34,600	52,474	64,034	357,919	350	60	43,902	1,168	584,948
94	Paints	6	325,088	5,329	27,085	44,874	247,795	5	29	28,398	52	20,306
95	Paper hanging	34	75,900	2,700	2,150	6,127	64,923	41	23	9,967	144	70,275
96	Patent medicines and compounds	71	1,071,643	15,750	21,100	26,148	1,008,645	81	189	117,384	177	63,473
97	Paving and paving materials	49	276,201	36,297	16,850	49,100	173,954	60	18	8,501	560	268,620
98	Photography	268	466,359	51,775	80,295	169,115	165,174	284	29	14,111	245	101,257
99	Photolithographing and photoengraving.	10	28,875			15,550	13,325	12	3	744	53	29,286
100	Pickles, preserves, and sauces	5	181,850	3,000	30,600	28,900	119,350	3	31	29,690	77	24,324
101	Plastering and stuccowork	54	60,362	10,255	11,835	11,045	27,227	61	3	2,700	200	108,417
102	Plumbers' supplies	3	164,992	6,000	14,200	36,469	108,323		11	10,900	86	35,800
103	Plumbing, and gas and steam fitting	194	905,880	82,250	71,350	95,024	657,256	234	104	81,637	1,111	649,895
104	Pottery, terra cotta, and fire-clay products.	8	539,042	59,882	177,667	85,164	216,329	5	15	24,050	427	152,603
105	Printing and publishing, book and job	145	1,196,561	12,600	13,600	620,191	550,170	174	270	193,615	1,074	502,939
106	Printing and publishing, newspapers and periodicals.	560	6,382,125	369,400	778,091	1,948,076	3,286,558	617	933	750,386	2,714	1,304,229
107	Printing materials	3	13,800			8,225	5,575	3			11	6,300
108	Refrigerators	4	136,945	22,662	44,000	11,619	58,664	2	6	12,400	90	31,890
109	Roofing and roofing materials	15	243,599	36,250	20,600	60,186	126,563	14	25	24,306	108	49,398
110	Saddlery and harness	512	1,997,941	192,442	373,768	164,669	1,267,062	583	68	66,166	884	367,367
111	Sewing machine repairing	5	2,855			805	2,050	4			3	2,010
112	Ship and boat building, wooden	25	161,967	24,050	29,975	44,732	63,210	28	7	7,580	137	74,317
113	Shirts	12	79,090			9,410	69,680	13	23	18,780	173	63,974
114	Show cases	3	13,900		6,000	4,250	3,650	3	1	500	14	7,290
115	Slaughtering and meat packing, wholesale.	13	1,211,086	62,000	186,540	120,442	842,104	21	119	97,889	627	280,463
116	Slaughtering, wholesale, not including meat packing.	7	143,925	9,150	60,400	11,750	62,625	6	6	4,820	41	23,514
117	Soap and candles	9	363,061	57,800	96,368	121,003	87,890	8	25	33,312	60	20,971
118	Starch	8	209,274	6,975	55,000	59,825	87,474	6	5	2,780	57	23,287
119	Steam fittings and heating apparatus	6	77,810			15,760	62,050	5	9	8,560	73	37,260
120	Stereotyping and electrotyping	5	85,694			35,270	50,424	3	18	6,507	50	32,342
121	Sugar and molasses, refining	11	156,945	815	4,185	24,475	127,470	14	17	36,500	71	28,775
122	Surgical appliances	3	5,100			1,900	3,200	2			5	2,420
123	Taxidermy	8	7,085	1,260	1,550	540	3,735	8			4	2,464
124	Tinsmithing, coppersmithing, and sheet-iron working.	398	1,162,554	133,740	174,230	304,978	549,606	501	71	70,037	1,266	530,941
125	Tobacco, chewing, smoking, and snuff	3	5,895			195	5,700	3	1	600	3	1,434
126	Tobacco, cigars and cigarettes	305	1,218,805	98,955	160,510	38,367	920,973	342	91	83,848	1,559	630,444
127	Tools, not elsewhere specified	5	83,945	15,200	19,100	20,425	29,220	7	2	1,600	30	17,169
128	Trunks and valises	8	76,075			4,975	71,100	10	10	7,000	60	30,842
129	Typewriter repairing	6	12,625			670	11,955	2			13	7,324
130	Upholstering materials	14	119,825	23,850	22,300	39,800	33,875	14	6	4,955	88	35,773
131	Vinegar and cider	6	142,750	47,150	29,000	31,100	35,500	4	28	19,130	19	10,050

SPECIFIED INDUSTRIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
5	$1,470	16	$2,922	2	$105	$2,130	$909	$72	$1,149	----------	$11,677	$11,472	$205	$24,328	62
13	7,220	----------	----------	----------	----------	1,702	585	166	951	----------	47,172	44,962	2,210	63,480	63
1	600	16	4,635	----------	----------	7,376	5,732	62	1,082	$500	15,324	15,155	169	46,064	64
38	20,838	5	1,774	3	780	13,754	4,337	142	9,175	100	20,290	19,595	695	85,488	65
13	6,780	25	3,207	----------	----------	1,544	826	30	688	----------	17,306	16,935	371	42,500	66
51	18,553	206	53,876	36	5,160	31,470	899	1,297	29,111	163	197,184	190,320	6,864	410,092	67
409	175,264	----------	----------	----------	----------	87,474	----------	700	86,774	----------	867,122	675,196	191,926	989,416	68
435	239,156	1	362	----------	----------	153,245	1,460	1,590	148,195	2,000	507,218	497,174	10,044	1,141,546	69
46	21,712	10	2,050	----------	----------	5,517	2,510	337	2,170	500	29,339	28,305	1,034	79,800	70
18	3,550	----------	----------	----------	----------	483	10	191	282	----------	9,803	9,091	712	19,336	71
159	72,352	2	300	----------	----------	15,751	658	2,263	12,630	200	131,865	101,596	30,269	297,896	72
843	414,895	13	2,937	----------	----------	1,996,040	646	39,332	1,927,987	28,075	867,901	773,880	94,021	4,456,928	73
70	45,334	19	5,928	10	3,640	8,002	4,420	427	3,105	50	51,524	49,854	1,670	134,511	74
31	17,730	1	520	1	100	9,671	5,918	1,886	1,827	40	25,006	23,510	1,496	87,832	75
73	32,115	1	332	5	1,047	14,907	9,772	585	3,750	850	104,639	103,834	805	201,262	76
15,087	7,127,900	15	2,985	38	9,686	1,782,489	45,654	339,448	1,397,387	----------	26,047,781	26,041,189	6,592	43,585,161	77
1,627	663,889	2	560	10	2,692	133,850	5,474	15,766	103,315	9,305	2,619,848	2,593,681	26,167	3,988,276	78
28	13,855	----------	----------	----------	----------	10,548	600	1,976	7,972	----------	166,553	159,898	6,655	241,932	79
1,306	610,637	----------	----------	5	1,060	60,093	8,464	4,142	36,395	11,092	296,931	283,695	13,236	1,177,464	80
2,540	1,446,376	----------	----------	2	304	333,423	10,860	3,446	25,423	293,694	2,570,446	2,557,161	13,285	4,932,553	81
177	73,881	35	10,199	2	220	52,163	4,002	1,163	46,998	----------	278,106	269,658	8,448	505,191	82
9	5,240	126	29,226	----------	----------	11,207	3,790	222	7,195	----------	88,213	87,503	710	170,800	83
20	11,864	658	163,274	10	1,374	108,245	81,637	4,158	22,430	20	707,661	699,579	8,082	1,391,214	84
169	64,160	1	150	2	230	42,668	3,281	3,111	33,326	3,000	168,995	164,336	4,659	485,584	85
10	5,725	1	200	----------	----------	2,288	771	35	1,462	20	3,065	2,713	352	25,461	86
278	144,935	----------	----------	2	255	16,514	4,779	2,042	8,923	770	270,230	264,510	5,720	630,261	87
16	8,270	----------	----------	----------	----------	2,329	1,758	63	508	----------	5,153	4,861	292	38,976	88
34	12,112	1	324	----------	----------	3,016	----------	366	2,650	----------	25,610	23,570	2,040	53,370	89
155	81,981	----------	----------	----------	----------	76,474	2,500	4,233	69,741	----------	2,951,004	2,921,177	29,827	3,272,598	90
30	11,667	----------	----------	----------	----------	7,928	1,055	183	6,190	500	161,141	160,426	715	270,122	91
22	13,876	1	196	1	208	13,943	6,400	459	7,084	----------	29,037	28,299	738	122,740	92
1,159	582,726	3	1,225	6	997	79,664	33,432	2,020	42,648	1,564	569,117	565,333	3,784	1,683,621	93
42	17,557	10	2,749	----------	----------	61,331	7,215	778	51,138	2,200	209,145	205,949	3,196	357,816	94
144	70,275	----------	----------	----------	----------	12,715	7,586	222	4,907	----------	69,874	69,537	337	213,482	95
105	43,598	70	19,629	2	246	146,903	13,620	1,947	131,336	----------	300,811	297,301	3,510	887,619	96
558	267,972	----------	----------	2	648	16,724	4,187	1,547	10,990	----------	450,672	447,186	3,486	892,026	97
155	75,405	88	25,495	2	357	66,949	44,304	2,090	19,165	1,390	206,445	199,179	7,266	681,552	98
49	27,797	3	1,264	1	225	7,128	3,304	78	2,596	1,150	9,739	9,196	543	70,373	99
41	18,052	30	5,750	6	522	14,557	895	740	12,922	----------	194,032	192,589	1,443	284,045	100
200	108,417	----------	----------	----------	----------	9,834	722	357	4,655	4,100	113,997	112,790	1,207	302,208	101
86	35,800	----------	----------	----------	----------	4,440	1,050	370	3,020	----------	57,540	54,740	2,800	134,400	102
1,107	649,195	----------	----------	4	700	108,299	43,336	3,912	41,289	19,762	1,568,913	1,557,999	10,914	2,991,384	103
422	151,592	5	1,011	----------	----------	17,788	----------	4,050	13,738	----------	154,378	64,882	89,496	445,435	104
868	448,266	178	49,904	28	4,769	245,041	57,247	3,595	46,468	137,731	554,982	533,678	21,304	1,890,676	105
2,187	1,195,120	313	90,564	214	18,545	1,219,343	131,267	29,669	816,800	241,607	1,073,934	1,015,234	58,700	5,790,148	106
10	6,150	1	150	----------	----------	1,028	589	38	401	----------	4,098	3,907	191	18,100	107
86	31,010	----------	----------	4	880	5,732	1,180	324	4,228	----------	56,808	55,349	1,459	130,950	108
108	49,398	----------	----------	----------	----------	18,478	2,228	1,145	14,605	500	257,859	252,053	5,806	425,697	109
350	358,637	29	7,730	5	1,000	103,947	48,325	13,207	42,007	408	1,504,218	1,487,728	16,485	2,618,361	110
3	2,010	----------	----------	----------	----------	583	488	20	75	----------	3,174	3,078	96	7,375	111
137	74,317	----------	----------	----------	----------	11,401	2,485	1,529	2,572	4,815	84,962	82,296	2,666	223,971	112
17	13,468	156	50,506	----------	----------	17,058	5,725	248	11,065	20	98,551	97,493	1,058	237,771	113
14	7,290	----------	----------	----------	----------	1,336	451	243	642	----------	15,950	15,380	570	29,680	114
610	276,191	8	2,400	9	1,872	79,062	2,600	6,848	69,114	500	5,956,371	5,917,509	38,862	6,803,112	115
40	22,914	1	600	----------	----------	11,734	2,301	538	8,895	----------	866,884	862,906	3,978	1,007,443	116
32	14,769	26	5,852	2	350	8,580	12	2,058	6,510	----------	269,219	263,567	5,652	470,280	117
57	23,287	----------	----------	----------	----------	10,570	----------	1,057	9,513	----------	250,594	241,650	8,944	329,566	118
73	37,260	----------	----------	----------	----------	8,277	2,614	178	4,345	1,140	78,361	77,210	1,151	161,750	119
50	32,342	----------	----------	----------	----------	23,834	3,330	173	8,547	11,784	13,658	10,772	2,886	90,172	120
59	26,668	12	2,107	----------	----------	18,363	4,258	380	13,725	----------	470,234	466,984	3,250	605,603	121
3	1,848	2	572	----------	----------	1,576	316	23	1,237	----------	2,132	2,095	37	10,305	122
4	2,464	----------	----------	----------	----------	743	378	46	319	----------	1,895	1,796	99	26,720	123
1,135	515,163	126	45,210	5	568	211,778	40,281	6,614	161,540	3,343	1,165,701	1,146,920	18,781	2,581,792	124
2	1,218	1	216	----------	----------	1,447	313	17	1,117	----------	4,527	4,407	120	13,700	125
1,159	565,682	344	86,812	56	7,950	338,643	36,920	4,636	296,707	380	949,616	941,301	8,315	2,457,942	126
30	17,169	----------	----------	----------	----------	3,492	540	487	2,465	----------	29,005	27,855	1,150	33,525	127
60	30,842	----------	----------	----------	----------	14,387	8,600	316	5,471	----------	60,029	59,549	480	144,888	128
13	7,324	----------	----------	----------	----------	3,068	1,315	38	1,715	----------	3,790	3,755	35	19,025	129
88	35,773	----------	----------	----------	----------	3,082	166	475	2,441	----------	51,873	49,338	2,535	128,591	130
18	9,750	1	300	----------	----------	10,331	2,640	609	7,082	----------	87,473	84,288	3,185	171,225	131

TABLE 7.—MANUFACTURES BY

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
132	Watch, clock, and jewelry repairing	315	$384,620	$41,470	$57,975	$111,059	$174,116	348			176	$99,010
133	Window shades	5	101,948	15,000	17,000	4,514	65,434	4	9	$7,393	36	17,878
134	Wirework, including wire rope and cable.	8	97,725	5,010	15,240	16,125	61,350	11	5	4,960	49	19,828
135	Wood, turned and carved	7	13,887	350	2,400	7,425	3,712	10			19	8,308
136	Woolen goods	19	762,825	178,900	133,092	188,005	267,828	6	20	23,450	300	90,662
137	All other industries[1]	79	3,498,668	264,074	453,163	960,378	1,821,053	67	165	149,378	2,073	675,525

[1] Embraces artificial feathers and flowers, 1; axle grease, 1; bags, other than paper, 2; baking and yeast powders, 2; billiard tables and materials, 1; blacking, 2; bluing, 1; boot and shoe uppers, 1; brassware, 1; buttons, 2; butter, reworking, 2; calcium lights, 1; cars and general shop construction and repairs by street railroad companies, 2; charcoal, 1; cordials and sirups, 2; cutlery and edge tools, 1; dentists' materials, 2; druggists' preparations, not including prescriptions, 1; emery wheels, 1; envelopes, 2; fertilizers, 1; fire extinguishers, chemical, 1; fireworks, 2; furnishing goods, men's, 2; hammocks, 1; hand knit goods, 1; hardware, 1; house furnishing goods, not elsewhere specified, 2; ink, printing, 1; instruments, professional and scientific, 1; labels and tags, 2; lard, refined, 1; lead, bar, pipe, and

TABLE 8.—MANUFACTURES IN CITIES

DULUTH.

1	*All industries*	433	$8,872,940	$2,728,821	$618,712	$1,615,678	$3,909,729	478	245	$245,448	3,998	$2,145,444
2	Bicycle and tricycle repairing	6	4,317			1,892	2,425	10			2	891
3	Blacksmithing and wheelwrighting	22	17,655	800	5,265	3,830	7,760	25			28	17,407
4	*Boots and shoes, custom work and repairing.*	26	3,225		1,075	3,120	4,030	27			13	5,876
5	Bread and other bakery products	5	17,152		2,000	5,508	9,644	6	9	4,624	41	21,649
6	Bridges	5	243,337	56,000	15,300	47,800	124,237	9	10	21,881	231	117,298
7	*Carpentering*	34	176,320		6,550	10,970	158,800	40	6	4,110	424	270,284
8	Carriages and wagons	7	11,270	800	2,050	1,345	7,075	7			14	8,312
9	Clothing, men's, custom work and repairing.	30	53,875	4,500	7,225	5,225	36,925	33	1	675	102	71,634
10	Clothing, women's, dressmaking	27	17,507	400	800	2,668	13,639	31			103	27,372
11	Confectionery	5	28,398		150	4,207	24,041	5	14	10,368	46	13,598
12	Dyeing and cleaning	3	2,150		300	1,200	650	4			10	3,802
13	Foundry and machine shop products	8	273,442		9,700	62,728	201,014	5	37	29,980	303	195,008
14	*Fur goods*	3	26,445			1,100	25,345	3			16	6,288
15	Furniture, cabinetmaking, repairing, and upholstering.	5	2,270			360	1,910	6			4	2,540
16	Lock and gun smithing	4	3,060			1,725	1,335	4			2	508
17	Lumber and timber products	12	5,749,754	2,412,739	259,725	598,487	2,478,803	9	37	44,075	1,276	652,504
18	Lumber, planing mill products, including sash, doors, and blinds.	4	157,312	49,000	19,000	37,138	52,674	4	5	3,624	51	23,050
19	Marble and stone work	5	4,000		1,200	1,375	1,425	6			18	11,537
20	Masonry, brick and stone	9	43,910	2,500	2,000	7,810	31,600	11	4	3,000	85	67,037
21	Millinery, custom work	17	27,157	1,500	4,267	1,590	19,800	15			31	10,099
22	Mineral and soda waters	4	22,775	2,000	1,150	12,200	7,425	4			12	7,584
23	Painting, house, sign, etc	23	38,105	700	2,400	3,065	31,940	31	7	6,035	100	55,882
24	*Paper hanging*	3	16,924			1,559	15,365	4	3	1,548	22	6,644
25	Photography	13	18,160		550	9,300	8,310	14			19	10,368
26	Plumbing, and gas and steam fitting	18	46,086			4,685	41,401	18	9	12,380	72	44,576
27	Printing and publishing, book and job	10	82,262			54,600	27,662	12	9	7,317	93	49,193
28	Printing and publishing, newspapers and periodicals.	10	108,879			69,877	39,002	11	8	13,150	104	69,549
29	Saddlery and harness	7	31,100			7,200	23,900	7	3	2,400	43	22,041
30	Ship and boat building, wooden	5	80,482	8,600	11,685	17,272	42,925	5	7	7,580	71	41,760
31	Shirts	3	3,400			1,650	1,750	4			27	7,348
32	Tinsmithing, coppersmithing, and sheet-iron working.	18	27,693	200	450	8,575	18,468	19	5	5,020	60	31,412
33	Tobacco, cigars and cigarettes	13	31,810	475	1,510	1,205	28,120	11	4	3,600	64	36,716
34	*Watch, clock, and jewelry repairing*	16	10,355		1,900	4,250	4,205	19			6	4,090
35	All other industries[1]	53	1,487,353	188,607	262,460	620,162	416,124	59	67	64,081	505	230,992

[1] Embraces artificial limbs, 1; awnings, tents, and sails, 2; bookbinding and blank book making, 2; boots and shoes, factory product, 1; bottling, 1; boxes, wooden packing, 2; brass castings and brass finishing, 1; brooms and brushes, 1; carpets, rag, 1; cars and general shop construction and repairs by steam railroad companies, 2; cars and general shop construction and repairs by street railroad companies, 1; cheese, butter, and condensed milk, factory product, 1; clothing, men's, factory product, 1; coffee and spice, roasting and grinding, 1; electrical apparatus and supplies, 1; electrical construction and repairs, 2; flavoring extracts, 1; flouring and grist mill products, 2; furniture, factory product, 2; gas and lamp fixtures, 1; gas, illuminating and heating, 1; glass, cutting, staining, and

MINNEAPOLIS.

1	All industries	2,368	$57,708,204	$8,424,632	$6,917,174	$13,766,617	$28,599,781	2,603	2,606	$2,428,396	26,608	$12,708,528
2	Agricultural implements	7	317,116	15,890	64,000	25,960	211,266	5	27	26,780	151	64,766
3	Artificial limbs	4	18,266			7,903	10,363	4	13	12,880	15	9,210
4	Awnings, tents, and sails	6	66,425	13,500	3,200	3,650	46,075	5	15	11,512	63	24,610
5	*Belting and hose, leather*	3	179,840	8,800	10,365	24,783	135,892	1	14	21,056	50	28,241
6	Bicycle and tricycle repairing	77	67,454	4,050	1,660	24,227	37,517	86	7	1,491	101	39,623
7	Blacksmithing and wheelwrighting	132	102,887	21,350	21,635	22,580	37,322	154	1	150	143	87,414
8	Bookbinding and blank book making	8	48,950			29,900	19,050	7	7	5,456	78	36,934
9	*Boots and shoes, custom work and repairing.*	113	32,882	5,900	9,835	10,251	6,896	124	1	180	55	23,725
10	Boots and shoes, factory product	5	410,340		2,100	99,395	308,845	4	20	16,480	577	213,665
11	Bottling	7	100,240	24,600	29,900	16,375	29,365	3	8	4,520	37	19,046

SPECIFIED INDUSTRIES: 1900—Continued.

Average number of wage-earners and total wages—continued.						Miscellaneous expenses.					Cost of materials used.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
166	$97,277	5	$1,120	5	$613	$55,924	$35,363	$2,640	$15,197	$2,724	$104,047	$98,831	$5,216	$458,979	132
32	16,140	3	1,634	1	104	3,909	720	509	2,680	------	133,517	130,871	2,646	223,507	133
48	19,214	------	------	1	114	3,596	425	76	3,095	------	41,598	40,478	1,120	78,574	134
19	8,308	------	------	------	------	1,652	871	100	681	------	6,421	5,361	1,060	20,994	135
160	60,196	119	27,081	21	3,385	36,178	1,255	3,894	31,029	------	272,483	263,477	9,006	496,812	136
1,619	584,309	441	89,252	13	1,964	218,638	54,571	17,877	133,292	12,898	4,090,636	4,031,946	58,690	5,709,184	137

sheet, 1; leather goods, 2; linen goods, 1; mats and matting, 1; mirrors, 2; mucilage and paste, 2; musical instruments, pianos and materials, 1; paper and wood pulp, 2; perfumery and cosmetics, 2; photographic apparatus, 1; pocketbooks, 1; printing and publishing, music, 1; regalia and society banners and emblems, 1; rubber and elastic goods, 1; sausage, 1; sewing machines and attachments, 1; soda water apparatus, 1; sporting goods, 1; steam packing, 1; sugar and molasses, beet, 1; toys and games, 1; umbrellas and canes, 2; varnish, 1; washing machines and clothes wringers, 2; wheelbarrows, 1; windmills, 1; wool pulling, 1.

BY SPECIFIED INDUSTRIES: 1900.

DULUTH.

3,682	$2,063,098	275	$71,426	41	$10,920	$572,266	$112,221	$41,543	$358,882	$64,620	$5,861,499	$5,792,369	$69,130	$10,628,957	1
2	891	------	------	------	------	1,412	1,166	13	233	------	4,313	4,255	58	9,400	2
28	17,407	------	------	------	------	2,673	2,323	85	265	------	17,577	16,657	920	60,568	3
13	5,876	------	------	------	------	1,902	1,712	63	127	------	11,013	10,803	210	31,414	4
34	19,612	7	2,037	------	------	4,733	3,605	360	768	------	73,415	71,396	2,019	121,352	5
231	117,298	------	------	------	------	16,276	696	1,404	4,076	10,100	291,677	286,959	4,718	501,824	6
424	270,284	------	------	------	------	28,299	2,179	173	3,697	22,250	799,792	799,095	697	1,262,546	7
14	8,312	------	------	------	------	1,165	860	58	247	------	10,018	9,772	246	26,857	8
98	70,168	4	1,466	------	------	11,711	8,305	265	3,141	------	66,196	65,283	913	185,765	9
7	7,092	96	20,280	------	------	5,028	4,443	82	403	100	58,617	58,404	213	121,927	10
23	8,384	23	5,214	------	------	9,049	4,210	180	4,679	------	86,170	80,936	5,234	143,460	11
7	2,932	2	680	1	190	2,397	1,776	36	585	------	2,593	2,205	388	11,300	12
302	194,858	------	------	1	150	18,595	13,275	602	4,718	------	194,227	182,311	11,916	475,848	13
4	2,918	12	3,870	------	------	2,126	1,363	55	658	50	19,400	19,390	10	41,500	14
4	2,540	------	------	------	------	898	771	8	119	------	7,460	7,420	40	14,800	15
2	508	------	------	------	------	783	470	5	308	------	1,458	1,364	94	5,578	16
1,255	645,319	------	------	21	7,185	163,100	2,016	25,766	135,288	------	2,086,842	2,086,842	------	3,800,442	17
51	23,050	------	------	------	------	3,249	1,200	1,101	948	------	113,276	112,176	1,100	172,943	18
18	11,537	------	------	------	------	530	530	------	------	------	15,425	14,795	630	28,624	19
85	67,637	------	------	------	------	1,176	100	97	979	------	128,596	128,508	88	224,940	20
------	------	31	10,099	------	------	5,509	4,322	66	1,121	------	46,953	46,777	176	79,259	21
12	7,584	------	------	------	------	841	290	101	450	------	12,585	12,313	272	46,481	22
100	55,882	------	------	------	------	5,915	4,781	216	918	------	42,512	42,365	147	143,869	23
22	6,644	------	------	------	------	1,572	1,186	45	341	------	7,970	7,957	13	23,575	24
13	8,126	6	2,237	------	------	4,095	3,348	72	625	50	14,925	14,775	150	41,478	25
71	44,456	------	------	1	120	8,806	4,201	239	4,366	------	126,871	126,418	453	229,784	26
73	44,911	16	3,712	4	570	10,376	5,159	540	2,427	2,250	31,057	29,685	1,372	133,614	27
99	66,699	4	2,700	1	150	17,483	5,383	325	10,600	1,175	31,817	29,802	2,015	183,831	28
40	21,381	1	300	2	360	5,285	4,717	124	444	------	74,541	74,299	242	121,586	29
71	41,760	------	------	------	------	8,055	1,860	553	1,642	4,000	30,990	29,385	1,605	102,316	30
3	1,600	24	5,748	------	------	1,058	840	18	200	------	17,231	17,008	223	30,228	31
59	31,202	1	210	------	------	5,812	4,674	130	908	100	38,648	38,091	557	101,179	32
51	34,317	5	954	8	1,445	12,218	1,890	101	10,227	------	50,066	49,915	151	122,849	33
6	4,090	------	------	------	------	3,079	2,634	80	365	------	6,717	6,511	206	22,345	34
460	217,823	43	12,419	2	750	207,060	15,876	8,630	158,009	24,545	1,340,551	1,308,497	32,054	2,005,475	35

ornamenting, 1; hand stamps, 1; hosiery and knit goods, 1; house furnishing goods, not elsewhere specified, 1; lime and cement, 1; liquors, malt, 2; looking-glass and picture frames, 1; mattresses and spring beds, 2; millinery and lace goods, 1; monuments and tombstones, 1; optical goods, 2; paving and paving materials, 1; plastering and stuccework, 2; roofing and roofing materials, 2; show cases, 1; slaughtering and meat packing, wholesale, 1; soap and candles, 1; taxidermy, 1; trunks and valises, 2.

MINNEAPOLIS.

22,328	$11,612,118	4,090	$1,060,101	190	$36,304	$5,237,162	$670,649	$216,351	$3,560,745	$789,417	$78,175,735	$77,453,060	$722,675	$110,943,043	1
148	63,466	3	1,300	------	------	16,404	1,380	904	13,630	490	112,485	109,623	2,862	302,319	2
15	9,210	------	------	------	------	8,252	1,500	115	6,637	------	11,865	11,585	280	66,400	3
25	12,378	38	12,232	------	------	10,517	3,580	422	6,365	150	66,276	65,516	760	137,670	4
50	28,241	------	------	------	------	6,155	2,100	967	3,088	------	285,682	283,624	2,058	378,919	5
97	38,424	3	1,000	1	199	17,884	12,111	197	4,012	1,564	80,982	78,886	2,096	190,978	6
142	37,298	------	------	1	146	20,619	15,779	947	3,693	200	91,268	85,785	5,483	325,952	7
42	25,971	35	10,819	1	144	11,287	4,410	261	3,516	3,100	17,928	17,331	597	85,578	8
54	23,517	------	------	1	208	10,624	8,579	190	792	1,063	40,745	39,659	1,086	124,778	9
371	154,115	191	57,980	15	1,570	25,404	6,374	706	18,324	------	663,326	659,487	3,839	1,008,007	10
37	19,046	------	------	------	------	14,911	1,580	520	12,811	------	65,524	64,635	889	151,500	11

TABLE 8.—MANUFACTURES IN CITIES.

MINNEAPOLIS—Continued.

	Manufacturing and mechanical industries.	Number of establishments.	Capital. Total.	Capital. Land.	Capital. Buildings.	Capital. Machinery, tools, and implements.	Capital. Cash and sundries.	Proprietors and firm members.	Salaried officials, clerks, etc. Number.	Salaried officials, clerks, etc. Salaries.	Average number of wage-earners and total wages. Total. Average number.	Average number of wage-earners and total wages. Total. Wages.
12	Boxes, wooden packing	5	$127,696			$46,038	$81,658	4	9	$12,940	165	$49,947
13	Bread and other bakery products	62	801,960	$33,541	$51,347	496,075	220,397	70	94	63,307	481	190,064
14	Brick and tile	8	173,410	82,100	18,275	21,775	51,260	9	4	2,150	88	36,012
15	Bridges	7	65,344	1,100	800	20,300	43,144	11	13	15,200	118	53,400
16	Brooms and brushes	8	17,585	2,400	3,100	1,325	10,710	8	1	800	38	16,830
17	Carpentering	176	946,938	53,720	42,470	109,186	741,562	195	49	55,461	2,351	1,175,806
18	Carpets, rag	6	5,265		100	4,325	840	7			25	8,275
19	Carpets, wood	3	5,100			500	4,600	5			22	11,200
20	Carriages and sleds, children's	3	2,400			300	2,100	4	1	300	7	2,742
21	Carriages and wagons	23	172,790	12,680	23,700	22,800	113,610	28	10	10,865	192	73,005
22	Cars and general shop construction and repairs by steam railroad companies.	4	1,333,949	129,000	552,263	318,773	333,913		71	65,412	1,268	656,932
23	Cheese, butter, and condensed milk, factory product.	15	42,464		200	17,570	24,694	22	7	3,020	26	12,513
24	China decorating	7	4,825	100	500	420	3,805	7			1	300
25	Cleansing and polishing preparations	5	8,205	2,000	1,300	255	4,650	6			3	822
26	Clothing, men's, custom work and repairing.	139	394,873	13,450	17,675	28,895	334,853	171	50	35,016	717	387,000
27	Clothing, men's, factory product	13	236,976			57,590	179,386	18	23	19,050	465	143,416
28	Clothing, women's, dressmaking	204	208,391	13,900	20,900	25,541	143,050	224	13	14,374	855	206,035
29	Clothing, women's, factory product	5	67,063			20,791	46,272	11	15	11,110	431	96,430
30	Coffee and spice, roasting and grinding	3	32,000			3,600	28,400	5	15	12,365	22	11,000
31	Confectionery	21	170,005	5,000	8,000	38,520	118,485	22	69	39,650	180	58,582
32	Cooperage	14	322,615	68,676	78,581	34,500	140,858	7	26	20,315	441	241,463
33	Corsets	4	16,700			800	15,900	6	2	480	17	5,252
34	Dyeing and cleaning	8	19,375	3,000	4,000	7,950	4,425	11	2	816	73	29,400
35	Electrical apparatus and supplies	7	69,195			23,445	45,750	5	11	6,976	70	37,740
36	Electrical construction and repairs	9	10,880	150	150	4,750	5,830	15	1	260	25	10,370
37	Electroplating	3	9,000			4,950	4,050	4	2	900	16	7,650
38	Enameling and enameled goods	3	2,875			1,000	1,875	4			9	4,625
39	Flavoring extracts	6	7,405			1,830	5,575	11	5	1,217	6	2,722
40	Flouring and grist mill products	12	14,322,061	646,547	1,096,841	5,450,624	7,128,049	4	240	327,300	2,071	1,321,998
41	Food preparations	10	156,411	625	10,500	39,075	106,211	5	26	25,500	159	28,984
42	Foundry and machine shop products	62	1,642,754	254,767	179,852	479,408	728,727	56	155	136,325	1,309	558,418
43	Fur goods	16	127,866	4,000	4,000	7,260	112,606	18	4	2,604	139	49,698
44	Furniture, cabinetmaking, repairing, and upholstering.	59	214,348	24,800	17,900	33,753	137,890	69	12	7,500	217	177,694
45	Furniture, factory product	12	749,867	116,642	112,806	108,179	412,240	13	53	54,494	536	217,991
46	Gas and lamp fixtures	5	27,600			2,700	24,900	4	8	6,732	37	21,754
47	Gas machines and meters	4	6,300			2,350	3,950	5	2	1,200	9	5,500
48	Glass, cutting, staining, and ornamenting.	4	7,185		150	435	6,600	5	1	520	16	9,480
49	Gloves and mittens	4	3,855			1,555	2,300	7			10	2,210
50	Hairwork	7	31,140	150	50	525	30,415	9	1	312	11	3,555
51	Hand stamps	3	27,780			14,000	13,780	4	2	910	24	11,734
52	Hosiery and knit goods	4	273,860	23,000	45,000	72,374	133,486		9	18,350	139	40,253
53	Ironwork, architectural and ornamental.	5	769,515	98,409	94,186	148,503	428,417	6	50	37,526	373	210,057
54	Jewelry	5	37,350		4,000	14,350	19,000	8	1	500	45	18,862
55	Liquors, malt	4	4,195,408	1,737,040	1,268,775	443,708	745,885	1	44	66,957	194	124,845
56	Lock and gun smithing	11	25,285		12,000	4,450	8,835	11	6	556	17	12,520
57	Looking-glass and picture frames	14	40,350			4,350	36,000	15	18	9,610	52	20,067
58	Lumber and timber products	13	12,900,046	3,584,147	267,950	987,996	8,059,953	7	103	177,368	3,017	1,490,262
59	Lumber, planing mill products, including sash, doors, and blinds.	14	1,244,311	259,147	172,646	201,416	611,102	14	79	80,486	900	380,970
60	Marble and stone work	17	280,635	21,179	31,827	93,924	133,705	15	13	13,602	409	224,881
61	Masonry, brick and stone	53	390,150	14,725	9,910	54,535	310,980	61	45	22,031	1,128	645,330
62	Mattresses and spring beds	4	235,935	38,500	44,545	23,167	129,723	8	9	7,880	146	59,630
63	Millinery, custom work	35	154,474	1,000	10,000	4,507	138,967	38	36	19,884	247	75,175
64	Mineral and soda waters	8	66,695	14,200	11,700	17,300	23,495	10	7	6,400	28	15,466
65	Models and patterns	6	7,355	300	150	3,425	3,480	9			9	4,850
66	Monuments and tombstones	12	37,760	3,450	2,800	3,335	28,175	11	3	3,124	39	19,701
67	Musical instruments and materials, not specified.	5	6,200			2,375	3,825	5			7	3,050
68	Oil, linseed	3	1,128,092	125,000	165,000	466,000	372,092		39	66,815	104	54,491
69	Oil, not elsewhere specified	5	104,712	16,000	15,000	6,800	66,912	4	18	6,032	23	5,947
70	Optical goods	6	18,100			4,200	13,900	7	7	7,118	12	7,280
71	Painting, house, sign, etc	104	182,852	7,850	11,655	25,012	138,335	114	24	18,561	419	199,055
72	Paints	4	67,025	915	2,000	15,741	48,369	3	12	8,078	14	6,568
73	Paper hanging	22	48,946	1,800	1,650	2,543	42,953	26	20	8,419	107	55,566
74	Patent medicines and compounds	36	385,588	1,500	5,650	5,780	372,658	39	101	57,492	55	21,886
75	Paving and paving materials	25	99,125	7,900	7,810	16,735	66,680	32	5	2,605	241	124,464
76	Photography	55	91,145	12,900	6,600	32,575	39,070	60	20	9,332	61	30,585
77	Photolithographing and photoengraving.	6	18,750			9,550	9,200	7	3	744	41	22,531
78	Plastering and stuccowork	21	27,422	2,255	4,500	5,885	14,782	24	3	2,700	75	42,196
79	Plumbing, and gas and steam fitting	66	348,168	900	2,000	35,444	309,824	82	63	49,878	562	326,539
80	Printing and publishing, book and job	73	474,357	100	200	289,413	184,644	87	63	57,296	548	253,200
81	Printing and publishing, newspapers and periodicals.	79	1,731,793	173,300	201,700	439,680	917,113	77	364	293,342	588	341,115

BY SPECIFIED INDUSTRIES: 1900—Continued.

MINNEAPOLIS—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.				
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.	Value of products, including custom work and repairing.	
165	$49,947					$20,999	$6,160	$277	$14,562		$157,142	$154,612	$2,530	$276,900	12
301	153,268	173	$34,694	7	$2,102	142,988	26,619	2,597	113,772		731,706	711,427	20,279	1,287,254	13
88	36,012					4,567		1,954	2,613		21,568	5,633	15,935	79,155	14
118	53,400					8,127	780	61	7,286		225,940	225,110	830	355,150	15
32	16,686			1	144	1,008	290	83	635		36,096	35,896	200	58,925	16
2,348	1,174,926	1	260	2	620	587,792	10,718	2,485	45,129	$479,460	3,191,646	3,170,986	20,660	5,412,038	17
12	4,510	13	3,765			1,463	655	23	775		2,273	1,987	286	16,712	18
22	11,200					1,551	780	6	765		14,015	13,750	265	30,750	19
7	2,742					1,173	860	20	293		4,455	4,375	80	15,350	20
189	71,405	3	1,600			17,306	6,469	912	8,940	985	161,121	157,344	3,777	332,401	21
1,268	656,932					52,166		305	51,861		776,003	740,697	35,306	1,550,513	22
25	12,288			1	225	9,580	4,420	179	4,981		165,508	163,833	1,675	211,843	23
		1	300			900	736	12	135	17	2,910	2,740	170	9,755	24
1	432	1	230	1	160	1,149	345	54	750		7,445	7,390	55	14,380	25
611	349,527	104	37,056	2	417	108,467	52,836	2,426	19,310	33,895	460,793	453,357	7,436	1,227,838	26
47	35,009	418	108,407			13,815	7,342	1,125	5,348		160,229	157,746	2,483	448,681	27
29	18,784	823	187,001	3	250	42,134	29,573	894	11,467	200	314,592	309,843	4,749	747,012	28
11	8,920	415	86,900	5	610	17,360	3,820	190	13,260	90	110,310	108,640	1,670	302,000	29
16	8,900	6	2,100			17,050	6,000	650	10,400		335,730	331,830	3,900	397,400	30
85	38,354	92	19,385	3	843	23,880	11,555	874	11,451		375,508	369,232	6,276	619,053	31
432	239,003	2	500	7	1,960	21,093	1,970	2,208	12,315	4,600	852,568	843,545	9,023	1,314,635	32
		17	5,252			1,935	1,229	25	681		3,890	3,865	25	14,950	33
49	22,480	23	6,790	1	130	10,880	3,180	299	7,401		11,075	8,125	2,950	72,925	34
70	37,740					7,759	2,245	209	5,305		110,425	107,055	3,370	189,836	35
24	10,193			1	177	2,054	1,405	42	607		28,859	28,455	404	54,458	36
16	7,650					1,685	1,124	26	535		8,635	7,858	777	26,700	37
9	4,625					899	555	6	338		1,172	1,082	90	12,156	38
4	2,080	1	312	1	330	1,968	922	30	1,016		12,145	12,005	140	21,481	39
1,939	1,276,058	132	45,940			725,766	10,520	46,189	669,057		45,218,238	44,914,121	304,117	49,673,568	40
30	13,374	129	15,610			102,310	2,650	280	99,380		415,122	410,779	4,343	585,864	41
1,294	553,352	12	4,520	3	546	161,049	17,100	10,550	118,269	15,130	1,142,298	1,112,106	30,192	2,570,601	42
45	24,116	98	25,510	1	72	15,982	6,416	485	9,081		166,603	165,240	1,363	263,252	43
206	174,500	9	2,900	2	294	29,724	14,316	1,093	13,461	854	199,985	196,219	3,766	470,037	44
530	216,644	2	670	4	677	56,833	6,810	4,068	45,455	500	384,800	376,849	7,951	827,286	45
29	19,246	7	2,040	1	468	6,332	3,290	97	2,845	100	28,242	27,776	466	80,800	46
9	5,500					1,729	796	18	395	520	4,872	4,842	30	15,035	47
15	8,280	1	1,200			1,727	1,444	63	220		12,133	11,870	263	36,050	48
1	570	8	1,560	1	80	768	498	5	265		3,937	3,811	126	9,628	49
		11	3,555			4,728	3,532	36	660	500	10,477	10,355	122	28,300	50
19	10,590	2	364	3	780	5,811	2,381	54	3,376		5,905	5,668	237	38,600	51
26	9,280	113	30,973			22,723	264	545	21,914		118,989	116,882	2,107	257,073	52
373	210,057					148,780	580	1,369	146,831		480,494	471,729	8,765	1,076,286	53
35	16,812	10	2,050			4,286	2,285	308	1,443	300	22,044	21,184	860	62,500	54
186	123,048	8	1,797			711,942	96	16,409	695,437		252,107	233,337	18,770	1,507,720	55
16	12,000	1	520			3,989	3,196	321	432	40	17,159	16,428	731	51,655	56
47	18,898	1	332	4	837	8,752	6,089	251	1,612	850	65,983	65,550	433	123,030	57
3,009	1,488,917	8	1,345			415,086	25,569	45,574	343,893		7,155,402	7,149,402	6,000	12,285,305	58
891	378,458			9	2,512	60,663	3,290	7,399	49,974		1,547,059	1,532,114	14,945	2,329,769	59
409	224,881					40,268	5,651	1,216	24,941	8,460	83,732	79,015	4,717	415,441	60
1,126	645,026			2	304	114,864	8,299	1,464	15,097	95,004	1,360,823	1,355,087	5,736	2,267,773	61
126	53,593	18	5,817	2	220	44,541	1,282	895	42,364		169,700	167,932	1,768	333,191	62
18	11,364	227	63,403	2	408	42,387	32,287	1,313	8,787		230,762	229,001	1,761	473,300	63
28	15,466					5,950	385	1,013	1,552	3,000	19,425	18,995	430	65,540	64
8	4,650	1	200			1,911	631	13	1,247	20	2,374	2,092	282	20,961	65
39	19,701					2,573	1,128	208	1,037	200	59,378	59,182	196	99,503	66
7	3,050					1,075	654	13	408		2,448	2,336	112	11,095	67
104	54,491					70,631	2,500	4,022	64,109		1,818,314	1,798,635	19,679	2,017,214	68
23	5,947					4,573	700	133	3,240	500	84,430	83,820	610	166,080	69
12	7,280					10,653	4,375	271	6,007		17,831	17,423	408	78,700	70
415	198,283			4	772	37,599	13,210	450	23,589	350	234,573	233,060	1,513	664,397	71
10	5,635	4	933			7,021	1,000	111	3,710	2,200	58,952	57,676	1,276	96,329	72
107	55,566					10,151	5,795	113	4,243		53,447	53,256	191	162,067	73
25	12,048	29	9,732	1	106	68,370	7,580	492	60,298		109,059	107,889	1,770	376,108	74
240	124,176			1	288	8,607	2,192	561	5,854		199,152	196,743	2,409	337,824	75
43	24,403	17	6,025	1	157	21,502	15,182	383	5,687	250	53,899	52,520	1,379	178,466	76
39	21,787	2	744			5,402	2,100	47	2,105	1,150	7,584	7,354	230	50,570	77
75	42,196					5,190	240	94	1,356	3,500	58,110	57,283	827	186,950	78
560	326,129			2	410	50,151	22,517	1,095	17,689	8,850	700,994	695,560	5,434	1,441,553	79
433	216,002	103	34,917	12	2,281	68,706	28,211	1,613	17,263	21,619	209,474	199,003	10,471	770,839	80
521	323,093	47	14,995	20	3,027	448,807	48,194	5,069	299,659	95,885	328,869	316,776	12,093	1,792,955	81

TABLE 8.—MANUFACTURES IN CITIES

MINNEAPOLIS—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
82	Roofing and roofing materials	6	$173,499	$32,100	$12,300	$35,186	$93,913	4	14	$17,986	64	$30,078
83	Saddlery and harness	33	173,166	3,000	29,835	36,252	104,079	35	18	17,940	176	84,128
84	Ship and boat building, wooden	3	1,365	650	200	390	125	3			1	420
85	Shirts	6	60,790			5,860	54,930	7	21	17,280	112	46,451
86	Soap and candles	4	73,261	5,500	12,768	18,653	36,340	1	13	13,612	22	8,321
87	Steam fittings and heating apparatus	4	43,650			8,300	35,350	5	5	5,000	52	24,895
88	Taxidermy	4	3,705	800	500	345	2,060	4			3	1,760
89	Tinsmithing, coppersmithing, and sheet-iron working.	68	174,211	18,200	7,305	39,984	108,722	85	12	6,004	264	145,265
90	Tobacco, cigars and cigarettes	42	206,203	2,200	5,200	9,438	189,365	51	28	22,058	335	152,385
91	Trunks and valises	3	19,825			1,025	18,800	3	5	3,000	20	12,182
92	Typewriter repairing	4	2,275			320	1,955	2			7	3,824
93	Watch, clock, and jewelry repairing	51	34,198	3,400	2,200	16,180	12,418	59			52	36,196
94	Window shades	3	36,800	7,000	13,000	1,200	15,600	3	2	1,800	11	4,990
95	Wood, turned and carved	3	5,737			4,025	1,712	5			8	4,308
96	All other industries[1]	88	7,376,824	643,827	2,046,457	2,435,094	2,251,446	73	213	215,644	1,966	830,165

[1] Embraces artificial feathers and flowers, 1; bags, other than paper, 2; baking and yeast powders, 1; baskets, and rattan and willow ware, 1; bicycles and tricycles, 1; blacking, 1; bluing, 1; boot and shoe uppers, 1; boxes, cigar, 1; boxes, fancy and paper, 2; brass castings and brass finishing, 2; buttons, 1; butter, reworking, 1; calcium lights, 1; cars and general shop construction and repairs by street railroad companies, 1; coffins, burial cases, and undertakers' goods, 2; cordials and sirups, 2; dentists' materials, 1; engraving, steel, including plate printing, 2; engraving, wood, 2; envelopes, 2; fancy articles, not elsewhere specified, 1; fire extinguishers, chemical, 1; fireworks, 1; furnishing goods, men's, 2; furs, dressed, 2; gas, illuminating and heating, 2; hats and caps, not including fur hats and wool hats, 1; labels and tags, 1; lard, refined, 1; leather goods, 1; lime and cement, 2; lithographing and engraving, 2; millinery and lace goods, 1; mirrors, 2;

ST. PAUL.

1	All industries	1,501	$28,208,389	$2,131,257	$3,733,941	$8,289,147	$14,051,044	1,747	2,292	$2,012,574	17,593	$7,669,805
2	Artificial limbs	3	2,500			1,200	1,300	4	2	1,168	8	3,540
3	Awnings, tents, and sails	8	29,810			1,510	28,300	7	4	2,110	32	10,956
4	Bicycle and tricycle repairing	31	23,590			9,870	13,720	37	1	960	45	22,050
5	Blacksmithing and wheelwrighting	71	57,395	9,650	13,525	10,415	23,805	81	2	804	79	47,072
6	Bookbinding and blank book making	7	51,350			29,000	22,350	6	9	5,060	115	58,248
7	Boots and shoes, custom work and repairing.	101	26,564	2,900	4,090	9,495	10,079	106			39	17,947
8	Boots and shoes, factory product	4	1,294,435			181,164	1,113,271	5	80	90,805	1,019	377,458
9	Bottling	5	48,175	7,000	10,000	12,300	18,875		8	7,600	21	14,509
10	Boxes, cigar	3	18,500			5,500	13,000	3	2	1,580	33	10,760
11	Boxes, wooden packing	3	39,010		20	12,090	26,900	3	2	2,100	45	15,603
12	Bread and other bakery products	40	473,912	18,700	34,500	262,377	158,335	43	78	31,015	263	122,652
13	Brick and tile	4	87,785	33,200	22,525	12,560	19,500	5	4	5,400	40	17,260
14	Brooms and brushes	8	49,784	2,850	2,800	3,130	41,004	10	8	4,450	39	20,709
15	Carpentering	106	269,775	43,400	27,325	36,500	162,550	116	9	6,750	626	331,656
16	Carpets, rag	4	3,010		200	1,380	1,430	6			12	4,174
17	Carriages and wagons	14	270,709	76,000	59,531	27,470	107,708	23	11	10,640	173	80,729
18	Cars and general shop construction and repairs by steam railroad companies.	7	1,595,840	172,200	789,272	287,847	346,521		68	63,927	1,401	817,302
19	Cheese, butter, and condensed milk, factory product.	5	175,054			67,542	107,512	6	14	11,860	46	20,020
20	China decorating	3	6,435			175	6,260	4	1	160		
21	Clothing, men's, custom work and repairing.	108	201,832	2,175	3,125	12,440	184,092	119	18	17,470	432	248,726
22	Clothing, men's, factory product	9	896,470			98,614	797,856	21	92	109,460	1,209	355,750
23	Clothing, women's, dressmaking	172	91,216	6,700	8,300	22,006	54,210	197	5	3,220	597	190,737
24	Clothing, women's, factory product	3	18,800			5,800	13,000	6	2	1,650	85	32,190
25	Coffee and spice, roasting and grinding	6	344,300		500	33,300	310,500	5	75	72,950	118	40,040
26	Confectionery	13	154,403	6,000	4,000	29,059	115,344	16	68	48,266	208	47,921
27	Cooperage	9	121,575	26,800	23,400	14,815	56,560	7	6	5,000	77	37,578
28	Dyeing and cleaning	6	17,480	1,000	5,500	4,060	6,920	7	3	2,040	34	13,936
29	Electrical apparatus and supplies	4	10,325			5,625	4,700	5	1	400	12	5,600
30	Electrical construction and repairs	5	47,250			4,200	43,050	6	7	7,580	53	24,900
31	Electroplating	3	5,950			4,500	1,450	6			7	5,184
32	Food preparations	7	19,582	300	200	7,912	11,170	11	6	4,700	24	6,362
33	Foundry and machine shop products	25	1,529,715	139,577	273,934	413,708	702,496	25	72	90,987	997	515,928
34	Fur goods	17	1,011,125	20,000	10,000	41,525	939,600	23	141	116,864	641	253,382
35	Furniture, cabinetmaking, repairing, and upholstering.	26	29,165	2,100	1,400	4,510	21,155	25	8	1,100	70	45,265
36	Furniture, factory product	8	287,273	45,777	31,273	58,101	152,122	10	31	26,980	225	94,556
37	Furs, dressed	4	60,600	9,000	18,700	18,500	14,400	4	2	1,800	71	31,475
38	Hairwork	3	12,525			525	12,000	3	3	990	6	1,680
39	Ironwork, architectural and ornamental.	3	30,179		200	11,920	18,059	1	7	6,680	61	28,461
40	Liquors, malt	7	2,355,460	264,548	512,677	303,889	1,274,346	5	44	71,460	276	115,532
41	Lock and gun smithing	10	5,720			2,175	3,545	12	2	344	9	3,660
42	Looking-glass and picture frames	7	11,420			1,350	10,070	13	2	676	20	10,194
43	Lumber, planing mill products, including sash, doors, and blinds.	7	657,624	103,911	89,132	95,980	368,601	3	36	26,048	339	129,079
44	Marble and stone work	5	144,900	22,500	15,300	34,000	73,100	6	9	11,250	122	58,300
45	Masonry, brick and stone	50	544,175	39,700	58,420	125,785	325,270	61	17	19,440	1,055	584,800
46	Mattresses and spring beds	3	76,441			2,893	73,548	3	14	10,497	46	15,547

BY SPECIFIED INDUSTRIES: 1900—Continued.

MINNEAPOLIS—Continued.

Average number of wage-earners and total wages—continued.						Miscellaneous expenses.					Cost of materials used.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
64	$30,078					$8,553	$800	$962	$6,791		$193,719	$190,153	$3,566	$298,114	82
164	80,738	9	$2,750	3	$640	20,346	11,711	1,751	6,884		300,827	297,509	3,318	499,875	83
1	420					99	60	10	29		743	735	8	2,395	84
12	10,128	100	36,323			14,605	3,890	170	10,525	$20	65,950	65,285	665	170,043	85
14	6,619	6	1,352	2	350	4,441	2	1,169	3,270		98,395	96,190	2,205	155,380	86
52	24,895					6,287	1,394	108	3,645	1,140	62,616	62,300	316	115,800	87
3	1,760					419	294	25	160		804	755	49	10,550	88
263	145,052			1	213	23,189	11,895	856	9,825	613	226,361	223,863	2,498	520,483	89
201	112,359	131	39,736	3	290	68,844	11,338	498	57,008		173,272	172,041	1,231	532,491	90
20	12,182					4,038	1,020	130	2,888		16,389	16,289	100	38,688	91
7	3,824					683	675	8			1,535	1,535		4,725	92
52	36,196					13,597	10,095	224	1,791	1,487	17,848	16,535	1,313	101,014	93
10	4,240	1	750			1,704	300	368	1,036		39,500	38,880	620	84,500	94
8	4,308					1,055	736	30	289		2,268	1,670	598	8,794	95
1,429	696,173	485	123,655	52	10,337	295,645	66,383	31,138	197,563	561	4,139,889	4,077,871	62,018	6,228,624	96

mucilage and paste, 1; paper and wood pulp, 1; perfumery and cosmetics, 2; pickles, preserves, and sauces, 2; plumbers' supplies, 2; pocketbooks, 1; pottery, terra cotta, and fire-clay products, 1; printing and publishing, music, 1; printing materials, 2; sausage, 1; sewing machine repairing, 2; show cases, 1; slaughtering and meat packing, wholesale, 1; soda water apparatus, 1; sporting goods, 1; steam packing, 1; stereotyping and electrotyping, 2; sugar and molasses, refining, 1; surgical appliances, 2; tobacco, chewing, smoking, and snuff, 2; tools, not elsewhere specified, 2; umbrellas and canes, 1; upholstering materials, 1; vinegar and cider, 1; washing machines and clothes wringers, 1; wheelbarrows, 1; wirework, including wire rope and cable, 2; woolen goods, 1; wool pulling, 1.

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13,391	$6,583,370	3,922	$1,046,002	280	$40,433	$3,668,047	$435,990	$115,650	$2,323,554	$792,853	$19,464,570	$19,098,732	$365,838	$38,541,030	1
7	3,340	1	200			485	460		25		4,045	4,000	45	22,300	2
11	5,450	21	5,506			2,706	1,710	31	965		26,608	26,287	321	56,429	3
44	21,825			1	225	7,963	5,130	111	1,255	1,467	34,712	33,859	853	89,829	4
79	47,072					9,892	7,843	453	1,541	55	45,403	42,417	2,986	174,114	5
59	37,693	56	15,555			6,237	4,968	229	1,040		172,169	171,699	470	257,757	6
38	17,785			1	162	8,206	6,797	180	829	400	30,066	28,677	1,389	101,427	7
697	273,237	320	103,834	2	387	86,779	16,617	4,590	65,572		1,002,502	993,824	8,678	1,645,999	8
24	14,500					8,009	1,460	2,409	4,140		38,838	37,908	930	78,088	9
11	4,840	22	5,920			1,398	966	82	350		30,040	29,630	410	51,848	10
45	15,603					2,577	630	102	1,845		58,257	56,632	1,625	87,808	11
199	107,834	63	14,700	1	118	31,530	15,458	1,711	13,361	1,000	479,908	467,733	12,175	875,903	12
40	17,260					6,552	20	832	5,700		17,364	5,514	11,850	54,485	13
38	20,534	1	175			5,027	1,084	168	3,775		49,672	49,279	393	96,501	14
625	331,536			1	120	194,423	6,401	1,467	9,245	177,310	587,507	586,233	1,274	1,365,091	15
9	3,560	3	614			856	624	10	222		1,605	1,505	100	10,544	16
173	80,729					17,834	3,770	1,784	12,030	250	110,269	105,459	4,810	320,548	17
1,398	816,586			3	716	13,396		10,602	2,794		1,192,187	1,155,420	36,767	2,086,812	18
46	20,020					11,379	4,160	748	6,471		433,022	427,096	5,926	517,790	19
396	234,031	36	14,695			1,165	1,100	12	53		3,975	3,900	75	6,200	20
						53,491	32,873	819	14,584	5,215	272,547	268,686	3,861	744,259	21
78	53,610	1,051	281,360	80	20,780	112,349	14,828	2,501	45,020	50,000	1,171,891	1,162,821	9,070	1,647,000	22
24	22,600	570	167,808	3	329	28,613	24,260	261	3,742	350	147,003	143,735	3,268	552,811	23
8	6,060	77	26,130			6,539	2,366	23	4,150		75,200	75,000	200	125,000	24
65	29,840	53	10,200			63,372	6,207	2,375	54,790		515,225	510,020	5,205	807,900	25
75	27,309	131	20,248	2	364	23,104	11,330	717	11,057		262,113	248,428	3,685	519,236	26
77	37,578					4,985	525	807	3,653		73,025	71,910	1,115	130,920	27
18	9,480	15	4,276	1	180	2,722	700	136	1,886		5,895	5,142	753	38,274	28
12	5,600					1,266	880	36	350		10,567	10,138	429	31,600	29
53	24,900					14,243	2,100	130	2,013	10,000	87,267	87,127	140	173,200	30
7	5,184					888	700	18	170		1,688	1,255	428	11,100	31
14	5,172	10	1,190			3,210	1,414	105	1,691		24,111	23,230	881	44,140	32
996	515,778			1	150	90,784	10,920	5,902	71,962	2,000	1,018,266	944,831	73,435	2,046,937	33
289	145,046	345	107,246	7	1,090	145,488	17,498	3,145	73,661	51,184	997,435	994,416	3,019	1,802,193	34
67	42,855	3	2,410			8,370	6,254	147	1,569	400	63,460	62,386	1,074	169,989	35
223	93,276	2	1,280			40,594	5,280	1,533	33,781		269,910	266,210	3,700	517,289	36
71	31,475					1,597	300	437	860		24,923	22,543	2,380	90,730	37
1	600	5	1,080			2,538	2,100	21	417		4,387	4,375	12	16,664	38
60	28,099	1	362			4,300	880	131	1,289	2,000	25,479	24,375	1,104	62,260	39
276	115,532					678,186		5,948	672,238		234,722	211,124	23,598	1,335,293	40
8	3,560			1	100	4,312	1,896	1,513	903		4,210	3,705	505	20,072	41
19	9,984			1	210	2,922	2,050	138	734		16,340	16,193	147	41,292	42
337	128,519	2	560			37,931	60	4,412	27,474	5,985	598,299	594,484	3,815	841,955	43
122	58,300					6,245	860	735	4,150	500	108,660	106,875	1,785	196,200	44
1,055	584,800					208,481	6,735	1,776	7,680	192,290	814,005	806,574	7,431	1,898,817	45
85	12,684	11	2,863			6,511	1,980	90	4,441		77,317	76,922	395	116,312	46

TABLE 8.—MANUFACTURES IN CITIES

ST. PAUL—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES, AND CITIES AND TOWNS.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
47	Millinery and lace goods	3	$67,200			$2,450	$64,750	5	9	$5,500	99	$23,616
48	Millinery, custom work	25	36,365	$500	$500	3,015	32,350	29	20	6,240	87	20,794
49	Monuments and tombstones	7	22,186	600		2,455	19,131	8	2	1,800	26	14,025
50	Musical instruments and materials, not specified.	3	6,950			1,250	5,700	2	3	1,000	9	5,220
51	Painting, house, sign, etc	80	188,568	13,175	22,779	22,758	129,856	93	26	17,556	435	236,415
52	Paper hanging	4	3,340	100	300	725	2,215	6			10	5,240
53	Patent medicines and compounds	21	55,942	900	800	4,206	50,036	24	34	27,862	49	15,643
54	Paving and paving materials	9	147,621	21,897	4,575	27,600	93,549	9	13	5,896	261	111,370
55	Photography	26	110,901	6,000	7,000	39,820	58,081	28	6	3,979	72	33,447
56	Photolithographing and photoengraving.	4	10,125			6,000	4,125	5			12	6,755
57	Pickles, preserves, and sauces	3	30,850		5,600	3,900	21,350	2	6	6,050	22	6,202
58	Plastering and stuccework	21	24,650	7,100	5,435	3,240	8,875	24			97	53,440
59	Plumbing, and gas and steam fitting	50	291,260	60,000	45,430	20,370	165,460	61	21	13,814	257	170,756
60	Printing and publishing, book and job	47	577,999	7,500	8,900	246,878	314,721	53	195	127,902	395	188,808
61	Printing and publishing, newspapers and periodicals.	44	2,816,189	100,600	394,281	500,473	1,820,835	30	503	402,911	900	473,327
62	Refrigerators	3	14,850			2,750	12,100	2	4	8,100	31	10,520
63	Roofing and roofing materials	3	33,850	500	1,800	16,550	15,000	1	7	5,920	34	14,300
64	Saddlery and harness	19	444,940	16,000	46,900	47,995	334,045	21	44	44,500	299	113,663
65	Ship and boat building, wooden	3	13,125	3,500	4,000	1,500	4,125	3			5	2,428
66	Shirts	3	14,900			1,900	13,000	2	2	1,500	34	10,175
67	Slaughtering and meat packing, wholesale.	3	199,773	41,000	52,000	11,500	95,273	5	12	7,890	69	32,378
68	Slaughtering, wholesale, not including meat packing.	3	51,225	3,000	23,300	4,800	20,125	2	4	3,500	15	9,874
69	Soap and candles	3	279,700	51,800	77,500	100,150	50,250	3	12	19,700	34	11,100
70	Stereotyping and electrotyping	3	65,194			22,270	42,924	1	11	4,570	26	16,014
71	Tinsmithing, coppersmithing, and sheet-iron working.	54	573,309	58,750	77,545	163,922	273,092	64	46	56,543	660	248,164
72	Tobacco, cigars and cigarettes	60	513,471	60,050	89,500	6,618	357,303	67	52	52,480	562	239,977
73	Trunks and valises	3	47,500			3,700	43,800	5	5	4,000	34	15,000
74	Vinegar and cider	4	122,250	47,150	24,000	26,100	25,000	2	22	16,480	12	7,500
75	Watch, clock, and jewelry repairing	41	51,240	3,800	10,250	19,085	18,105	46			39	26,717
76	All other industries[1]	92	8,183,778	574,347	816,697	4,646,450	2,146,284	79	259	262,640	2,175	662,518

[1] Embraces baking and yeast powders, 1; baskets, and rattan and willow ware, 2; bicycles and tricycles, 2; billiard tables and materials, 1; blacking, 1; boxes, fancy and paper, 2; brass castings and brass finishing, 1; brassware, 1; bridges, 1; butter, reworking, 1; carpets, wood, 1; carriage and wagon materials, 2; carriages and sleds, children's, 1; cleansing and polishing preparations, 1; coffins, burial cases, and undertakers' goods, 1; dentists' materials, 1; druggists' preparations, not including prescriptions, 1; emery wheels, 1; enameling and enameled goods, 1; engraving, steel, including plate printing, 1; engraving, wood, 1; fancy articles, not elsewhere specified, 2; fireworks, 1; flavoring extracts, 2; flouring and grist mill products, 1; fruits and vegetables, canning and preserving, 1; gas and lamp fixtures, 1; gas, illuminating and heating, 1; gas machines and meters, 1; glass, cutting, staining, and ornamenting, 2; hand stamps, 2; hardware, 1; hats and caps, not including fur hats and wool hats, 2; house furnishing goods, not elsewhere specified, 1; ink, printing, 1; instruments, professional and scientific, 1; iron

TABLE 9.—MANUFACTURES IN CITIES AND

1	Total for cities and towns	1,720	$30,708,298	$5,294,075	$3,536,340	$5,266,818	$16,611,065	2,008	1,153	$1,115,670	13,681	$5,967,157
2	Albert Lea	33	466,426	63,300	76,250	100,292	226,584	98	21	14,363	336	146,104
3	Anoka	47	620,833	22,270	70,300	136,532	391,671	57	11	11,873	291	123,908
4	Austin	69	469,671	41,420	137,080	106,871	184,300	85	19	13,293	265	107,206
5	Brainerd	54	1,924,045	209,810	219,010	409,372	1,085,853	62	55	59,288	989	528,012
6	Crookston	60	761,047	92,734	107,665	141,026	419,622	67	22	15,040	349	191,410
7	Faribault	102	880,867	81,100	167,564	270,524	361,679	123	65	56,090	482	222,234
8	Fergus Falls	91	429,254	26,775	78,325	119,440	204,714	108	19	19,688	264	114,367
9	Hastings	59	238,872	18,670	63,300	37,726	123,676	65	12	10,022	172	70,764
10	Little Falls	52	2,508,745	1,372,320	104,105	213,306	819,014	53	32	41,705	603	264,555
11	Mankato	135	1,371,907	169,205	250,724	401,083	550,895	162	92	78,185	683	242,742
12	Moorhead	23	134,934	17,050	19,400	56,219	41,365	24	6	4,310	77	39,010
13	New Ulm	90	1,097,616	57,725	363,650	267,107	409,134	111	42	55,279	423	183,987
14	Owatonna	82	434,260	58,700	71,600	93,850	210,110	97	19	16,720	257	108,935
15	Red Wing	79	1,657,336	144,461	321,994	313,982	876,899	84	73	78,603	765	297,149
16	Rochester	116	471,994	38,975	74,962	141,075	216,982	144	21	11,506	331	125,891
17	St. Cloud	96	789,946	86,860	145,915	209,033	348,138	112	56	39,193	650	343,062
18	St. Louis Park	6	1,228,875	48,975	144,945	431,005	603,950	6	41	60,225	224	133,660
19	St. Peter	61	374,760	32,767	80,883	81,040	180,070	74	13	10,600	199	77,085
20	South St. Paul	11	927,504	8,050	119,200	102,725	697,529	6	93	80,954	573	262,485
21	Stillwater	114	5,451,915	1,712,851	190,275	625,082	2,923,707	128	128	144,735	2,803	1,122,330
22	Wabasha	44	349,984	17,925	24,102	70,330	237,627	52	11	10,780	83	39,449
23	Waseca	69	260,614	16,700	39,410	61,115	143,389	92	15	11,360	172	83,292
24	West Minneapolis	15	1,665,907	25,210	122,314	11,699	1,506,684	16	83	79,807	476	211,129
25	Winona	162	6,192,886	935,222	543,307	866,384	3,847,473	182	204	192,051	2,214	928,400

BY SPECIFIED INDUSTRIES: 1900—Continued.

ST. PAUL—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.				
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.											
Average number.	Wages	Average number.	Wages.	Average number.	Wages.	Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.	Value of products, including custom work and repairing.	
4	$2,940	95	$20,676			$9,825	$2,600	$200	$7,025		$65,770	$65,360	$410	$127,700	47
2	500	82	19,998	3	$296	17,163	13,992	223	2,948		64,371	63,845	526	134,872	48
26	14,025					2,139	1,320	54	690	$75	24,714	24,034	680	54,557	49
9	5,220					1,254	1,104	50	100		2,705	2,525	180	27,881	50
432	235,190	3	1,225			27,389	11,158	715	14,302	1,214	197,378	196,281	1,097	591,460	51
10	5,240					347	180	27	140		3,369	3,301	68	14,400	52
22	9,042	26	6,461	1	140	45,726	4,389	302	41,035		45,357	44,756	601	219,637	53
260	111,010			1	360	6,749	1,348	886	4,515		203,999	203,477	522	395,653	54
49	25,023	22	8,224	1	200	14,249	10,685	218	2,966	380	44,340	43,348	992	161,043	55
10	6,010	1	520	1	225	1,726	1,204	31	491		2,155	1,842	313	19,803	56
19	5,452	3	750			8,946	645	204	8,097		55,692	55,349	343	81,420	57
97	53,440					4,189	384	221	2,984	600	44,881	44,526	355	130,216	58
256	170,586			1	170	30,505	9,076	1,289	9,317	10,823	361,738	359,410	2,328	689,038	59
336	177,393	48	9,607	11	1,808	163,324	22,659	1,175	25,628	113,862	289,164	280,817	8,347	923,909	60
711	439,348	84	29,581	105	4,398	645,166	40,585	14,565	446,444	143,572	381,434	361,592	19,842	2,258,427	61
31	10,520					2,701	1,180	13	1,508		7,265	6,657	608	38,250	62
34	14,300					8,608	390	81	7,637	500	50,563	48,485	2,078	101,928	63
280	108,988	19	4,680			21,745	8,025	1,365	12,355		565,512	562,959	2,553	835,193	64
5	2,428					190	70	46	74		6,492	6,382	110	10,275	65
2	1,740	32	8,435			1,395	995	60	340		15,370	15,200	170	37,500	66
67	31,778	2	600			12,716		700	11,516	500	591,214	589,154	2,060	824,158	67
15	9,874					8,381	2,300	251	5,830		398,585	397,205	1,380	464,206	68
14	6,600	20	4,500			3,979		819	3,160		162,575	159,525	3,050	302,800	69
26	16,014					20,244	1,230	83	7,147	11,781	7,236	5,850	1,386	56,372	70
534	202,984	125	45,000	1	180	157,726	9,565	2,725	143,236	2,200	649,976	641,077	8,899	1,382,499	71
387	199,774	158	37,124	17	3,079	130,547	10,371	1,975	118,201		335,446	332,954	2,492	865,567	72
34	15,000					8,239	5,660	146	2,433		38,990	38,610	380	91,000	73
12	7,500					7,845	720	505	6,620		66,513	63,838	2,675	127,200	74
35	26,204			4	513	9,608	6,554	256	1,761	1,037	20,008	19,509	499	86,225	75
1,743	597,976	403	60,409	29	4,133	325,971	33,407	27,088	259,576	5,900	3,549,719	3,491,287	58,432	5,606,825	76

and steel, 1; jewelry, 1; labels and tags, 1; lead, bar, pipe, and sheet, 1; lime and cement, 1; lithographing and engraving, 1; lumber and timber products, 2; malt, 1; mats and matting, 1; mineral and soda waters, 2; models and patterns, 2; mucilage and paste, 1; musical instruments, organs and materials, 1; oil, linseed, 2; oil, not elsewhere specified, 2; optical goods, 2; paints, 2; plumbers' supplies, 1; printing materials, 1; regalia and society banners and emblems, 1; rubber and elastic goods, 1; sewing machine repairing, 1; sewing machines and attachments, 1; show cases, 1; steam fittings and heating apparatus, 1; sugar and molasses, refining, 1; surgical appliances, 1; tobacco, chewing, smoking, and snuff, 1; tools, not elsewhere specified, 1; toys and games, 1; typewriter repairing, 2; umbrellas and canes, 1; varnish, 1; washing machines and clothes wringers, 1; window shades, 2; wirework, including wire rope and cable, 2; wood, turned and carved, 1.

TOWNS UNDER 20,000 IN POPULATION: 1900.

12,792	$5,782,058	761	$167,234	128	$17,865	$1,912,288	$172,794	$221,990	$1,447,698	$69,806	$30,505,363	$29,979,323	$526,040	$45,057,064	1
282	134,237	51	11,317	3	550	28,777	8,770	2,830	17,177		402,032	389,466	12,566	750,100	2
254	115,418	37	8,490			56,246	4,983	5,580	31,723	13,960	1,451,288	1,438,856	12,432	1,847,812	3
215	97,937	48	9,019	2	250	26,065	5,970	1,662	18,433		474,286	447,688	26,598	757,455	4
972	523,802	12	8,425	5	785	102,130	5,435	6,832	89,863		1,112,037	1,093,784	18,253	1,943,962	5
334	187,145	13	3,975	2	290	59,071	4,940	6,830	45,701	1,600	635,880	621,059	14,271	1,102,064	6
434	213,953	43	7,881	5	400	47,852	9,962	5,648	30,002	2,240	2,014,715	1,986,000	28,715	2,687,312	7
230	104,411	29	8,058	5	1,898	43,892	6,876	3,530	25,826	7,660	685,883	675,397	10,486	1,062,397	8
158	68,842	11	1,632	3	290	36,872	12,216	2,185	19,721	2,750	1,024,625	1,010,712	13,913	1,270,209	9
587	260,984	11	2,964	5	607	93,261	5,229	41,090	45,942	1,000	1,416,892	1,399,316	17,576	2,139,427	10
503	204,696	137	32,197	43	5,849	87,620	14,210	9,614	62,659	1,137	1,513,182	1,472,675	40,507	2,242,000	11
71	38,098	3	584	3	328	9,525	2,189	727	6,609		372,341	362,183	10,158	490,243	12
395	178,615	25	5,074	3	298	128,660	7,473	5,644	113,618	1,925	1,706,462	1,666,103	40,359	2,328,347	13
242	106,020	14	2,665	1	250	34,582	7,050	2,299	25,209	24	486,828	475,645	11,183	788,927	14
739	290,819	24	6,056	2	265	109,907	9,199	13,344	87,302	62	1,383,140	1,297,625	85,515	2,120,303	15
281	117,740	46	7,921	4	230	65,489	8,694	3,197	37,138	16,460	386,215	373,173	13,042	728,166	16
632	338,012	18	5,050			63,422	8,556	6,772	46,624	1,470	1,229,824	1,207,278	22,546	1,895,202	17
219	182,310	4	1,200	1	150	28,601	655	1,202	17,996	8,748	271,292	254,084	17,208	606,736	18
168	69,236	27	7,210	4	639	34,815	3,684	2,083	27,003	2,045	274,104	264,268	9,836	509,471	19
558	258,293	7	2,400	8	1,792	61,437	598	6,123	54,716		5,168,573	5,138,987	29,586	5,714,757	20
2,767	1,112,689	35	9,591	1	50	203,523	17,805	39,641	145,332	745	2,508,559	2,496,158	12,401	4,904,792	21
74	37,711	9	1,738			35,646	2,463	1,604	31,379	200	581,886	572,736	9,150	761,165	22
160	80,871	9	2,116	3	305	15,749	4,168	1,499	10,082		767,954	756,608	11,346	976,007	23
475	210,959	1	170			134,959	475	1,888	132,366	230	345,070	329,619	15,451	853,828	24
2,042	899,260	147	26,501	25	2,639	404,187	21,194	50,166	325,277	7,550	4,292,845	4,249,903	42,942	6,576,882	25

Twelfth Census of the United States.

CENSUS BULLETIN.

No. 138. WASHINGTON, D. C. February 13, 1902.

MANUFACTURES.

OLEOMARGARINE.

Hon. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I transmit herewith, for publication in bulletin form, a report on the manufacture of oleomargarine during the census year ending May 31, 1900, prepared under my direction by Mr. John H. Garber, of the Census Office.

Oleomargarine manufacture is now for the first time made the subject of special inquiry by the Census Office. The industry was introduced into the United States prior to 1880, and at the census of that date and in 1890 its general statistics were collected and may be found in Table 1 of the accompanying report. All the large centers of the industry were visited by Mr. Garber in obtaining reports, and 17 of the largest factories were personally inspected by him. The remaining reports were secured by correspondence.

The statistics are presented in 8 tables: Table 1 showing comparative figures for the industry at the Tenth, Eleventh, and Twelfth censuses; Table 2 showing a comparative statement of capital for 1890 and 1900; Table 3 showing the different classes of materials and the products for 1900; Table 4 showing the annual production of oleomargarine from 1886 to 1900, inclusive, as shown in the reports of the internal-revenue commissioner; Table 5 showing the amount of oleomargarine shipped into each state for the fiscal year ending June 30, 1899; Table 6 showing the quantity and value of the oleomargarine and oleo oil exported during the fiscal year ending June 30, 1900, as published in the Report on Commerce and Navigation, 1900; Table 7 showing the estimated annual production of European countries; Table 8 showing the detailed statistics for the industry in 1900, by states and territories.

In drafting the schedules of inquiry for the census of 1900 care was taken to preserve the basis of comparison with prior censuses. Comparison may be made safely with respect to all the items of inquiry except those relating to capital, salaried officials, clerks, etc., and their salaries, the average number of employees, and the total amount of wages paid. Live capital, that is, cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries, was first called for at the census of 1890. No definite attempt was made, prior to the census of 1890, to secure a return of live capital invested.

Changes were made in the inquiries relating to employees and wages in order to eliminate defects found to exist on the form of inquiry adopted in 1890. At the census of 1890 the average number of persons employed during the entire year was called for, and also the average number employed at stated weekly rates of pay, and the average number was computed for the actual time the establishments were reported as being in operation. At the census of 1900 the greatest and least numbers of employees were reported, and also the average number employed during each month of the year. The average number of wage-earners (men, women, and children) employed during the entire year was ascertained by using 12, the number of calendar months, as a divisor into the total of the average numbers reported for each month. This difference in the method of ascertaining the average number of wage-earners during the entire year may have resulted in a variation in the number, and should be considered in making comparisons.

At the census of 1890 the number and salaries of proprietors and firm members actively engaged in the business or in supervision were reported, combined with clerks and other officials. In cases where proprietors and firm members were reported without salaries, the amount that would ordinarily be paid for similar services was estimated.

At the census of 1900 only the number of proprietors and firm members actively engaged in the industry or in supervision was ascertained, and no salaries were reported for this class. *It is therefore impossible to compare the number and salaries of salaried officials of any character for the two censuses.*

Furthermore, the schedules for 1890 included in the wage-earning class, overseers, foremen, and superintendents (not general superintendents or managers), while the census of 1900 separates from the wage-earning class such salaried employees as general superintendents, clerks, and salesmen. It is possible and probable that this change in the form of the question has resulted in eliminating from the wage-earners, as reported by the present census, many high-salaried employees included in that group for the census of 1890.

The number of proprietors and firm members, shown in the accompanying tables, falls short of the number of establishments reported. This is accounted for by the fact that no proprietors or firm members are reported for corporations or cooperative establishments. The number of salaried officials, clerks, etc., is the greatest number reported employed at any one time during the year.

The reports show a capital of $3,023,646 invested in the manufacture of oleomargarine in the 24 establishments reporting for the country. This sum represents the value of land, buildings, machinery, tools, and implements, and the live capital utilized, but does not include the capital stock of any of the manufacturing corporations. The value of the products is returned at $12,499,812, to produce which involved an outlay of $412,012 for salaries of officials, clerks, etc.; $534,544 for wages; $2,489,784 for miscellaneous expenses, including rent, taxes, etc.; and $7,639,501 for materials used, mill supplies, freight, and fuel. It is not to be assumed, however, that the difference between the aggregate of these sums and the value of the products is, in any sense, indicative of the profits in the manufacture of the products during the census year. The census schedule takes no cognizance of the cost of selling manufactured articles, or of interest on capital invested, or of the mercantile losses incurred in the business, or of depreciation in plant. The value of the product given is the value as obtained or fixed at the shop or factory. This statement is necessary in order to avoid erroneous conclusions from the figures presented.

Very respectfully,

S. N. D. North

Chief Statistician for Manufactures.

THE MANUFACTURE OF OLEOMARGARINE.

By JOHN H. GARBER, *Expert Special Agent.*

Table 1 shows the totals for the manufacture of oleomargarine as reported at the censuses of 1880 to 1900, inclusive, with the percentages of increase for each decade.

TABLE 1.—COMPARATIVE SUMMARY, 1880 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.			PER CENT OF INCREASE.	
	1900	1890	1880	1890 to 1900	1880 to 1890
Number of establishments	24	12	15	100.0	[1]20.0
Capital	$3,023,646	$634,532	$1,680,300	376.5	[1]62.2
Salaried officials, clerks, etc., number	394	64	(2)	515.6	
Salaries	$412,012	$91,752	(2)	349.0	
Wage-earners, average number	1,085	264	599	311.0	[1]55.9
Total wages	$534,544	$154,138	$212,952	246.8	[1]27.6
Men, 16 years and over	1,007	252	561	299.6	[1]55.1
Wages	$511,238	$150,918	(2)	238.8	
Women, 16 years and over	66	11	18	500.0	[1]38.9
Wages	$21,109	$2,870	(2)	635.5	
Children, under 16 years	12	1	20	1,100.0	[1]95.0
Wages	$2,197	$350	(2)	527.7	
Miscellaneous expenses	$2,489,784	$385,563	(3)	545.8	
Cost of materials used	$7,639,501	$2,175,264	$5,486,141	251.2	[1]60.3
Value of products	$12,499,812	$2,988,525	$6,892,939	318.3	[1]56.6

[1] Decrease. [2] Not reported separately. [3] Not reported.

While the industry was in existence prior to 1880, statistics concerning it first appear in the census reports for that year. From Table 1 it appears that there was a general decrease in the industry during the decade ending with 1890, followed by a large increase during the ten years ending with 1900. Oleomargarine is, however, frequently manufactured in connection with slaughtering and meat packing, and in such cases it is difficult to obtain data which relate exclusively to its production; it is possible that at prior censuses the statistics for oleomargarine so manufactured were not separately reported and to this extent may fall short of representing the total for the industry. Of the 24 establishments reported for 1900, 8 manufactured oleomargarine in connection with slaughtering and meat packing.

Table 1 shows that from 1880 to 1890 the number of establishments decreased from 15 to 12; the capital from $1,680,300 to $634,532; and the products, from $6,892,939 to $2,988,525. This large decrease is due, in part, to the fact that certain states—notably New York—enacted effective legislation antagonistic to the manufacture of oleomargarine, and the Act of Congress of 1886 imposing a special tax of $600 on manufacturers forced a few small producers out of business. The census report for 1880[1] shows 5 establishments in New York with $645,500 capital and $5,338,753 product; and in 1890 none were reported. At the census of 1890 there had not been time for a readjustment and redistribution of the industry, and the figures of the Tenth Census afford, therefore, a better basis of comparison than do those of the Eleventh Census. It appears from Table 1 that during the twenty years there has been a net gain of 9 in the number of establishments, while the capital increased from $1,680,300 to $3,023,646, and the value of products from $6,892,939 to $12,499,812. In 1880 the average number of wage-earners was 599, and the wages paid $212,952; in 1900 the number had increased to 1,085 and the wages to $534,544. The amount paid for miscellaneous expenses was not reported in 1880; of the $2,489,784 reported for this item in 1900, more than two million dollars are represented by the internal-revenue tax of 2 cents a pound.

The distribution by cities of the 24 establishments reported at the present census is as follows: Chicago, Ill., 6; Providence, R. I., 3; Indianapolis, Ind., 2; Washington, D. C., 2; Kansas City, Kans., 2; Kansas City, Mo., 1; Hammond, Ind., 1; East St. Louis, Ill., 1; Pittsburg, Pa., 1; Louisville, Ky., 1; Columbus, Ohio, 1; Cleveland, Ohio, 1; Houston, Tex., 1; Camden, N. J., 1.

The corporate form of organization predominates in this industry, 17 establishments being operated by incorporated companies, 4 by individuals, and 3 by firms or limited partnerships. Fifteen establishments were engaged in the manufacture of oleomargarine as a separate and independent business, 1 was more extensively engaged in manufacturing neutral lard for export, and the remaining 8 made the industry an adjunct to slaughtering and meat packing.

Table 2 presents a comparative statement of capital for 1890 and 1900, with the percentages of increase for the ten years.

TABLE 2.—COMPARATIVE SUMMARY, CAPITAL: 1890-1900.

ITEMS.	1900	1890	Per cent of increase.
Capital:			
Total	$3,023,646	$634,532	376.5
Land	200,868	32,234	523.2
Buildings	535,620	29,900	1,691.4
Machinery, tools, and implements	482,477	73,300	558.2
Cash and sundries	1,804,681	499,098	261.6

[1] Report of Manufactures at the Tenth Census, page 62.

The invested capital is shown by Table 2 to have increased from $634,532 in 1890 to $3,023,646 in 1900, a gain of 376.5 per cent. The largest item for each year was that of cash and sundries, which includes cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries. In 1900, $1,804,681 was reported for this item, and in 1890, $499,098, an increase of 261.6 per cent. In 1900 the value of the owned land and buildings, as reported by 13 establishments, was $200,868 and $535,620, respectively. The remaining 11 establishments paid $16,800 for rent of land and buildings. The $482,477 reported as invested in machinery, tools, and implements in 1900 represents the value of the equipment of all of the 24 plants, this part of the capital being owned by the manufacturer in every instance. The amount represents *an average of $20,103 for each factory.* The smallest amount reported for this item of capital from any plant was $546; the largest amount, $105,000. The equipment is singularly free from delicate and complex machinery, and is therefore subject to comparatively little deterioration through use.

Table 3 shows the quantity and cost of the different materials used and the quantity and value of products as reported for the census year 1900.

TABLE 3.—MATERIALS AND PRODUCTS: 1900.

ITEMS.	Quantity.	Cost of materials.	Value of products.
Materials:	*Pounds.*		
Total	114,748,633	$7,639,501	
Milk and cream	23,684,395	579,068	
Oleo oil	33,724,621	2,744,235	
Neutral lard	37,651,741	2,976,870	
Cottonseed oil	11,818,921	567,790	
Butter	396,956	61,176	
Salt	6,962,233	58,887	
Color	204,418	32,078	
Sugar	137,342	7,084	
Glucose	32,965	494	
Materials—continued:	*Pounds.*		
Stearin and oleo stock	134,541	$4,320	
Fuel and rent of power and heat		49,855	
Mill supplies		5,745	
All other materials		501,107	
Freight		50,792	
Products:			
Total	104,633,214		$12,499,812
Oleomargarine	104,633,214		12,286,357
All other products			213,455

This table shows that there were used during the census year *114,748,633 pounds of material to produce 104,633,214* pounds of oleomargarine, indicating a loss of 10,115,419 pounds in the manufacturing process. While there is a slight shrinkage through evaporation and other natural causes, the principal loss is from the milk and cream, only a part of which is absorbed or held by the oils in the churning process. Exclusive of milk and cream, the weight of ingredients was 91,064,238 pounds, or 13,568,976 pounds less than the quantity of oleomargarine produced. Except for slight shrinkage these materials return pound for pound in manufacturing, and it follows that the difference (13,568,796 pounds) represents the gain from 23,684,395 pounds of milk and cream used. It is calculated that the *solid ingredients—those giving out pound for pound in* the churning process—will gain from 10 to 20 per cent in weight through the absorption of butter fats and other constituents of milk. The largest factory in point of output manufactured more than 15,000,000 pounds of oleomargarine; the smallest, less than 50,000 pounds.

Table 4 shows the annual production of oleomargarine in the United States from 1886 to 1900, inclusive, as shown in the Report of the Commissioner of Internal Revenue for the fiscal year ending June 30, 1900.[1]

[1] Report of the Commissioner of Internal Revenue, 1900, pages 191, 390–393.

TABLE 4.—QUANTITY OF OLEOMARGARINE PRODUCED AND AMOUNT OF INTERNAL REVENUE RECEIVED THEREFROM, 1886 TO 1900, INCLUSIVE.

FISCAL YEAR ENDING JUNE 30.	Quantity produced.	TAXES.				
		Total.	General tax, 2 cents per pound.	Special taxes.		
				Manufacturers, $600.	Wholesalers, $480.	Retailers, $48.
	Pounds.					
On hand November 1, 1886	181,090					
1887 (from November 1, 1886)	21,513,537	$723,948	$435,924	$31,700	$101,400	$154,924
1888	34,325,527	864,140	653,355	17,150	70,376	123,259
1889	35,664,026	894,248	677,302	12,400	73,914	130,632
1890	32,324,032	786,292	619,206	11,700	55,318	100,068
1891	44,392,409	1,077,924	871,488	6,950	53,192	146,294
1892	48,364,155	1,266,326	945,675	10,400	106,036	204,215
1893	67,224,298	1,670,644	1,301,318	15,350	115,644	238,332
1894	63,622,246	1,723,480	1,328,558	11,250	107,394	276,278
1895	56,958,105	1,409,211	1,065,293	8,950	98,784	236,184
1896	50,853,234	1,219,432	952,475	15,725	72,264	178,968
1897	45,531,293	1,034,130	850,691	7,200	45,900	130,339
1898	57,516,136	1,315,781	1,107,775	7,600	44,272	156,134
1899	83,139,901	1,956,619	1,609,918	11,500	71,884	263,322
1900	107,045,028	2,543,785	2,085,273	15,450	97,919	345,143

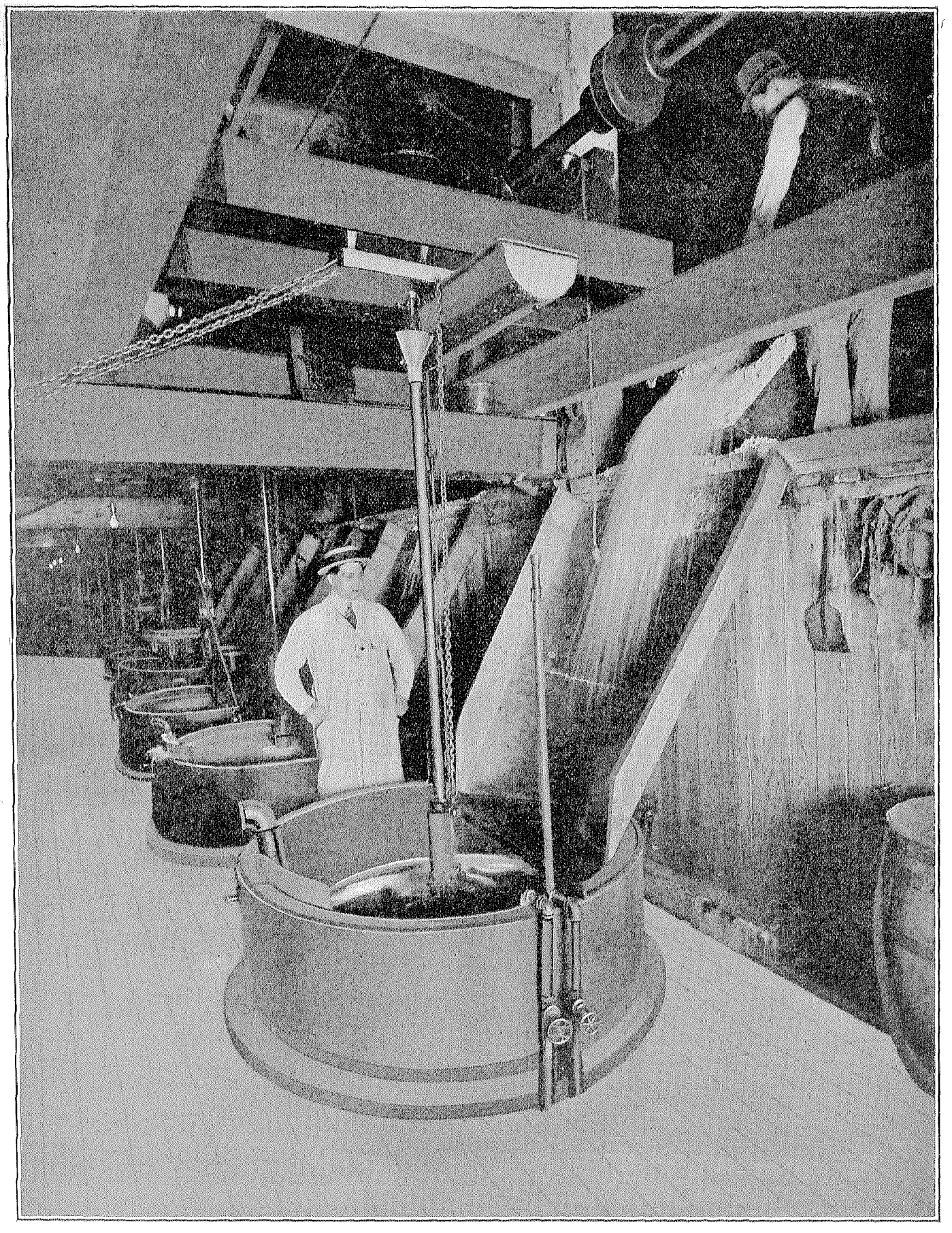

Fig. 1.—Melting Beef Fat for Oleo Oil.

From Table 4 it appears that 107,045,028 pounds were produced during the fiscal year ending June 30, 1900, which quantity differs from the 104,633,214 pounds reported to the Census Office and shown in Table 3. There was 1 establishment operating a portion of the census year that is not included in this report; a few establishments reported their output from their record of sales, which is not exactly identical with the amount manufactured, and the fiscal year does not correspond with the census year by one month. These facts explain the small discrepancy of less than two and one-half million pounds between the two tables.

The value of the 104,633,214 pounds of oleomargarine was $12,286,357, an average of 11.7 cents per pound. This amount represents the value at the factory, packed and ready for shipment, and includes the internal-revenue tax of 2 cents a pound, which must be paid on withdrawal for sale.

Table 5, prepared by the Treasury Department in response to a resolution of the House of Representatives, exhibits the quantity of oleomargarine shipped into each state for the fiscal year ending *June 30, 1899.*[1]

Table 6 shows the quantity and value of the oleo oil and oleomargarine exported during the fiscal year ending June 30, 1900.[2]

[1] Senate Report, No. 2043, 56th Congress, Second Session, page 90.

[2] Commerce and Navigation, 1900, Vol. II, pages 873–877.

TABLE 5.—QUANTITY OF OLEOMARGARINE SHIPPED INTO EACH STATE FOR FISCAL YEAR ENDING JUNE 30, 1899.

STATE OR TERRITORY.	Number of dealers.	Pounds.	Per cent of total.
Alabama	21	226,053	0.3
Alaska	5	18,080	(1)
Arkansas	35	380,389	0.5
Arizona	5	78,767	0.1
California		74,923	0.1
Colorado	55	1,123,537	1.4
Connecticut	5	134,255	0.2
Delaware	48	40,475	0.1
District of Columbia	61	816,848	1.0
Florida	82	590,225	0.7
Georgia	61	495,004	0.6
Illinois	2,020	18,638,921	23.4
Idaho	3	58,224	0.1
Indiana	306	3,923,228	4.9
Indian Territory	21	152,278	0.2
Iowa	3	79,922	0.1
Kansas	186	1,658,544	2.1
Kentucky	217	1,490,577	1.9
Louisiana	140	1,043,502	1.3
Maine	17	102,274	0.1
Maryland	58	1,791,950	2.2
Massachusetts	108	2,083,889	2.6
Michigan	109	2,092,521	2.6
Minnesota	30	1,343,865	1.7
Missouri	231	3,133,313	3.9
Mississippi	17	104,622	0.1
Montana		446,022	0.6
Nebraska	73	1,021,985	1.3
New Hampshire	19	465,583	0.6
New Jersey	296	5,875,975	7.4
New Mexico	12	115,850	0.1
New York	14	222,788	0.3
Nevada		625	(1)
North Carolina	9	110,244	0.1
North Dakota	18	7,710	(1)
Ohio	1,005	8,830,969	11.1
Oklahoma	10	117,398	0.1
Oregon	3	41,250	0.1
Pennsylvania	717	11,433,341	14.3
Rhode Island	333	3,594,984	4.5
South Carolina	24	258,159	0.3
South Dakota	4	55,432	0.1
Tennessee	83	714,640	0.9
Texas	162	1,518,264	1.9
Utah		8,450	(1)
Vermont	1	2,940	(1)
Virginia	121	1,159,400	1.5
Washington	5	68,345	0.1
West Virginia	172	1,206,865	1.5
Wisconsin	23	714,742	0.9
Wyoming	5	39,547	0.1
Total		79,695,744	100.0

[1] Less than one-tenth of 1 per cent.

TABLE 6.—QUANTITY AND VALUE OF OLEO OIL AND OLEOMARGARINE EXPORTED DURING THE FISCAL YEAR ENDING JUNE 30, 1900.

COUNTRIES TO WHICH EXPORTED.	Oleo oil.		Oleomargarine.	
	Pounds.	*Value.*	*Pounds.*	*Value.*
Total	146,739,681	$10,503,856	4,182,536	$409,088
Europe:				
Austria-Hungary	73,634	4,786		
Belgium	2,892,778	212,457	58,265	6,073
Denmark	8,628,948	675,053		
France	167,047	10,800		
Germany	26,780,986	2,104,818	448,769	37,049
Italy	250	15		
Malta, Gozo, etc			1,470	157
Netherlands	85,976,848	5,912,334		
Portugal			2,000	200
Sweden and Norway	18,500,332	960,047	17,990	1,400
Turkey in Europe	88,370	7,050		
United Kingdom	7,265,764	512,745	364,712	34,074
North America:				
Bermuda	2,537	201	32,015	3,786
British Honduras	1,050	152	7,880	1,097
Quebec, Ontario, Manitoba, etc	27,494	1,906	3,066	245
Newfoundland and Labrador	709,817	54,353	107,473	7,200
Honduras			260	31
Nicaragua			3,035	397
Mexico			9,194	993
Miquelon, Langley, etc			2,800	310
West Indies:				
British			1,466,638	146,959
Cuba			516,463	60,693
Danish			116,890	8,530
Dutch			41,605	3,280
French			157,200	13,501
Haiti			50,088	4,989
Porto Rico			219,140	22,776
Santo Domingo			9,784	903

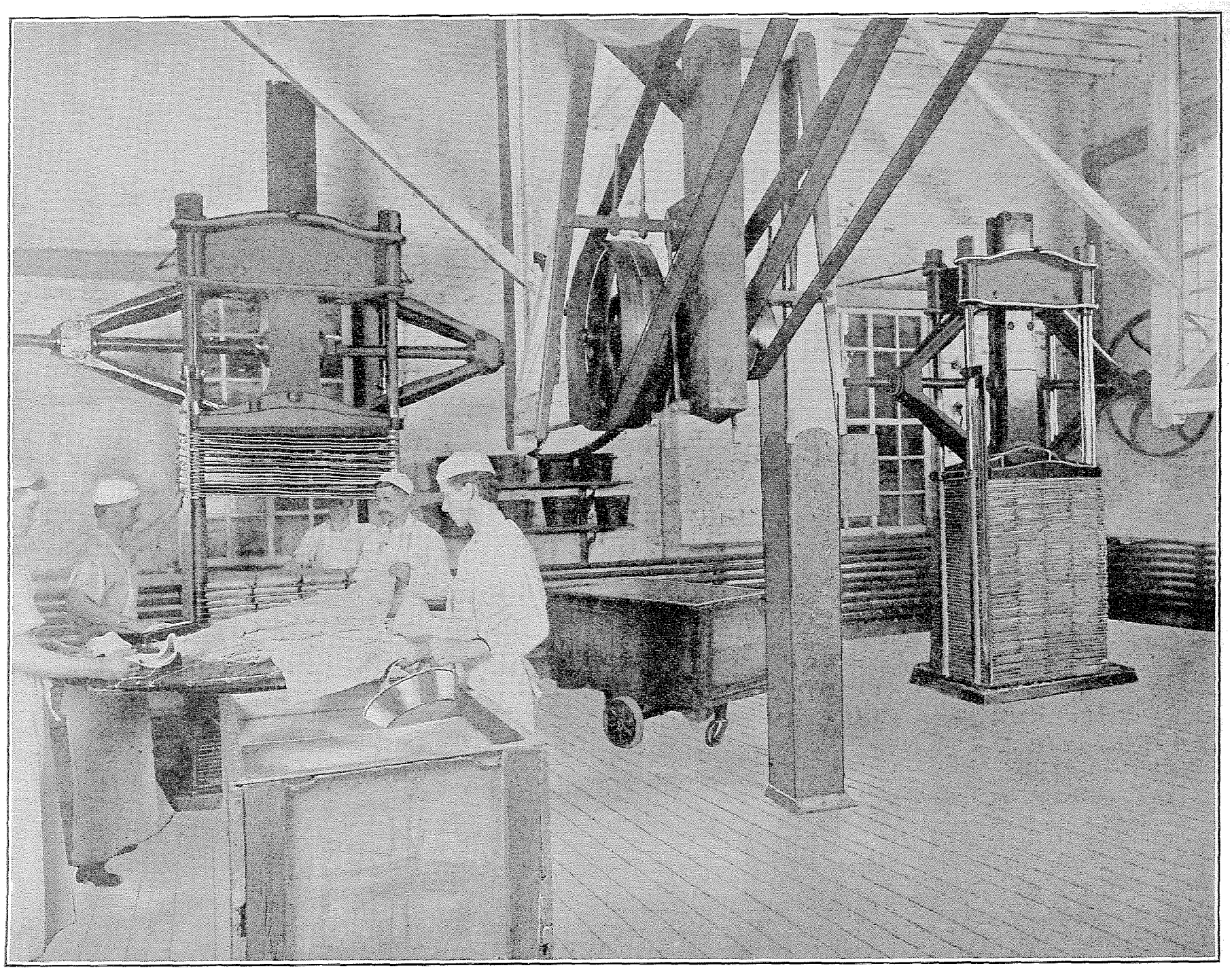

Fig. 2.—Separating Oleo Oil from the Stearin of the Fat, by Pressure.

TABLE 6.—QUANTITY AND VALUE OF OLEO OIL AND OLEOMARGARINE EXPORTED DURING THE FISCAL YEAR ENDING JUNE 30, 1900—Continued.

COUNTRIES TO WHICH EXPORTED.	Oleo oil.		Oleomargarine.	
	Pounds.	*Value.*	*Pounds.*	*Value.*
South America:				
Brazil	4,652	$391	100	$18
Colombia			113,777	9,675
Ecuador			837	106
Guiana:				
British	3,000	270	133,236	14,638
Dutch			59,700	5,486
Asia:				
Chinese Empire			7,626	670
East Indies—British			2,300	328
Hongkong			1,560	194
Japan	6,049	656	41,309	4,412
Oceania:				
British Australasia	607,625	45,572		
Hawaii			118,396	11,800
Africa:				
British Africa			66,908	7,102
Portuguese Africa	2,500	250	50	8

From Table 6 it will be seen that about one-third of the oleomargarine exported goes to the British West Indies, the next largest quantity being purchased by Cuba. The largest European purchasers were Germany and the United Kingdom. None of the oleo oil went to the West Indies, but the Netherlands, Germany, Norway-Sweden, Denmark, and the United Kingdom received nearly all the oleo oil exported.

Table 7, based on commercial estimates, shows approximately the annual production of oleomargarine in European countries.

TABLE 7.—ANNUAL PRODUCTION OF OLEOMARGARINE IN EUROPEAN COUNTRIES.

COUNTRY.	Quantity produced.	Quantity imported.
	Pounds.	*Pounds.*
United Kingdom	82,000,000	110,000,000
Denmark	35,000,000	4,500,000
Norway	22,000,000	
Sweden	22,000,000	
Germany	220,000,000	
Netherlands	123,000,000	
Belgium	20,000,000	

Table 7 indicates that Germany is the greatest producer of oleomargarine, with a product of 220,000,000 pounds, followed by the Netherlands with 123,000,000 pounds. According to the figures of this table, the United States, with an output of more than 100,000,000 pounds, ranks third in production.

HISTORICAL AND DESCRIPTIVE.

Oleomargarine was first manufactured in France. In 1869 the French war office, at the instance of Napoleon III, who was desirous of discovering a substitute for butter that would keep longer and also increase the dietary of the poor, offered a prize for the best substitute for butter, which was won by M. Mége-Mouries, a Parisian chemist. After a series of observations and experiments, Mége-Mouries was persuaded that the butter fat contained in milk was absorbed from the animal tissues of the cow, and his attention was then directed to the discovery of a process that would separate from beef fat the oil similar to that in milk. The method finally devised by him for the manufacture of oleo oil (called then oleomargarine or oleomargarine oil) was to heat finely minced beef fat with water, carbonate of potash, and small fragments of fresh stomachs of sheep, to a temperature of about 115 degrees Fahrenheit. The influence of the heat, together with the pepsin contained in the sheep's stomach, separated the fat from the cellular tissue. This fatty matter was then removed and when cool was subjected to hydraulic pressure sufficient to separate the stearin. The oleo oil was then churned with milk and water in the proportion of 10 pounds of oleo oil to 4 pounds of milk and 3 pints of water. The resulting compound was washed and declared ready for use.[1]

The industry was early introduced into the United States, but statistics of its manufacture prior to 1886 are unreliable. In that year Congress passed an act regulating its manufacture and imposing a tax of 2 cents a pound on the product. From that date more exact information is obtainable. In 1887 there were 21,513,537 pounds made, and the present report shows a product of nearly five times that amount.

In the manufacture of oleomargarine so much depends on the handling of the constituent oils and the manipulation of the temperatures by which they are surrounded throughout the different stages of the process, that equipment for live steam, ice water, and refrigeration is the indispensable requisite of every establishment. Aside from this, the equipment consists principally of the machinery of power, melting tanks, mixing tanks, milk receptacles, churns, and machine butter workers. The butter workers are such as are used in creameries throughout the United States. In some factories the churns are similar to those used in creameries, but oftener they are large, upright, jacketed caldrons in which the milk and color are mixed with the melted oils by a violent churning or stirring produced by revolving or rotating agitators inside. By the introduction of steam into the jacket the operator controls the temperature and the degree of liquefaction until the churning process is complete. By the same means any considerable quantity of oleomargarine is prevented from congealing on the side of the churn while the contents are being drawn off. The equipment is generally of American manufacture. Only 2 factories visited by the writer were

[1] Appleton's Annual Cyclopædia, 1882; also Universal Cyclopædia, 1900, Vol. 2, page 253.

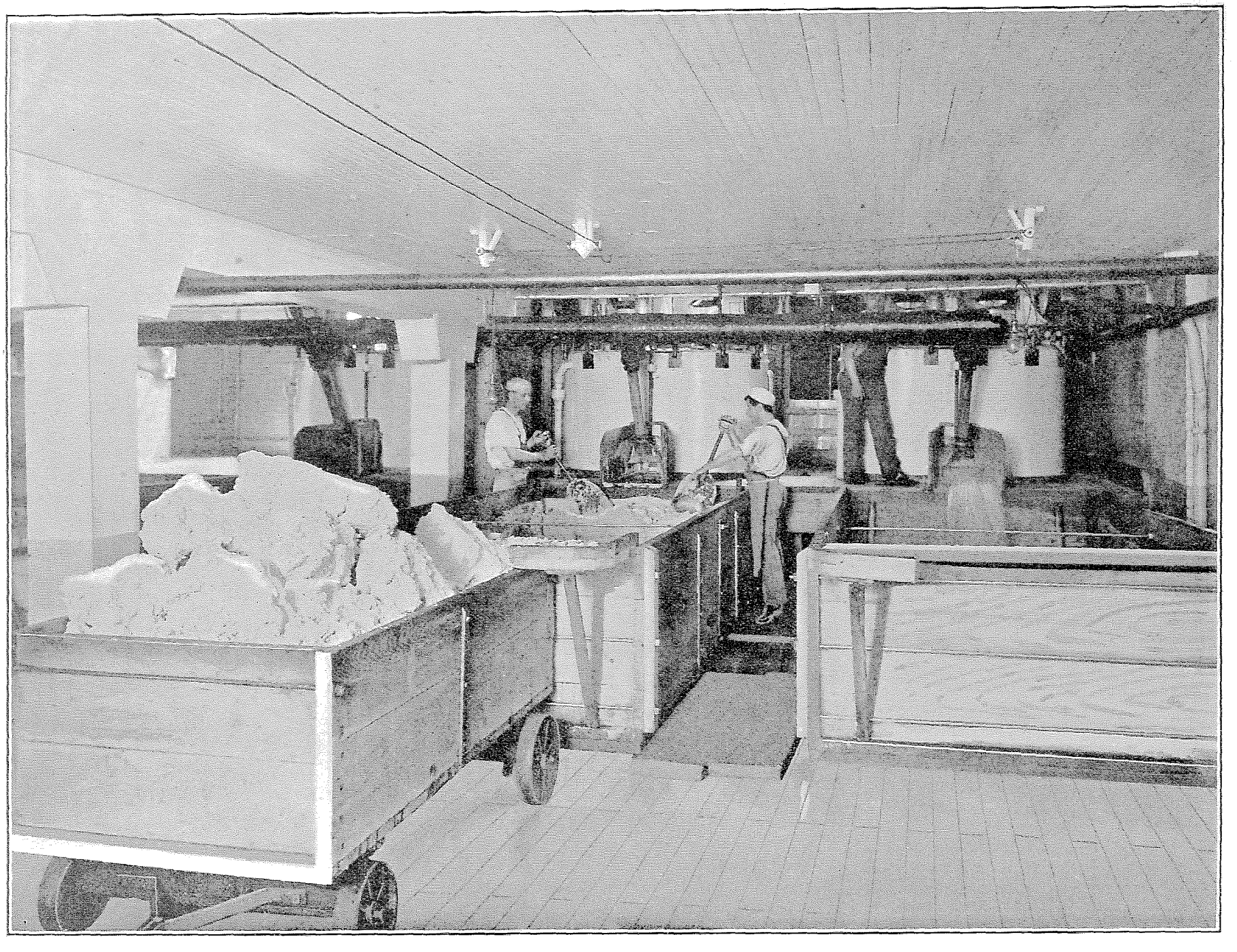

Fig. 3.—Churning Oleomargarine.

supplied with foreign machinery, which was imported from the centers of oleomargarine manufacture in Europe.

The number and character of the ingredients of oleomargarine make them susceptible of almost an infinite number of combinations, and each manufacturer has his own working formula. So much depends on the handling of the oils and the regulation of temperatures surrounding them at each successive step that different manufacturers using the same quality of ingredients in similar combination will secure vastly different results. A formula for each of three distinct grades of oleomargarine, of general manufacture, is given below to show the use of different ingredients and their variation in quantity.

Formula 1.—Cheap Grade.

	Pounds.
Oleo oil	495
Neutral lard	265
Cottonseed oil	315
Milk	255
Salt	120
Color	1¼
Total	1,451¼

will produce from 1,265 to 1,300 pounds of oleomargarine.

Formula 2.—Medium High Grade.

	Pounds.
Oleo oil	315
Neutral lard	500
Cream	280
Milk	280
Salt	120
Color	1½
Total	1,496½

will produce from 1,050 to 1,080 pounds of oleomargarine.

Formula 3.—High Grade.

	Pounds.
Oleo oil	100
Neutral lard	130
Butter	95
Salt	32
Color	½
Total	357½

will produce about 352 pounds of oleomargarine.

Practically all the oleomargarine manufactured in the United States is made by the simple process of churning a melted mixture of oleo oil and neutral lard with milk, cream, or melted butter to give it the butter flavor, and coloring matter to give it any desired shade of yellow in semblance of butter. In the cheap grades cottonseed oil is often substituted for a portion of oleo oil and neutral lard, but never to the total exclusion of either. After the churning process the whole is salted and put upon the market in a variety of forms, as demanded by the various classes of consumers. The different forms in which it is packed for market are well shown by the following extract from a circular of information issued by one of the large manufacturers:

"Our Butterine is packed as follows:

"Solids in 10, 20, 25, 30, 40, 50, and 60 lb. tubs; also in 25, 28 and 50 lb. record packages (tin-lined).

1 lb. bricks in 10, 28, 30, 48, and 60 lb. cases; also 48 lb. tubs.
2 lb. bricks in 30, 48, and 54 lb. cases.
3 lb. bricks in 54 lb. cases.
5 lb. bricks in 50 lb. cases.
1 lb. rolls in 42, 56, and 62 lb. tubs; also in 10 and 50 lb. cases.
1 lb. country rolls in 37 and 50 lb. tubs and 50 lb. cases.
1 lb. long rolls in 42 and 62 lb. tubs.
1 lb. prints in 37 and 50 lb. tubs; also 50 and 60 lb. cases.
2 lb. rolls in 32, 52, and 62 lb. tubs; also 10 and 56 lb. cases.
2 lb. country rolls in 52 lb. tubs and 50 lb. cases.
1, 2, and 3 lb. rolls, assorted, in 62 lb. tubs.
3 lb. rolls in 54 lb. cases.
5 lb. rolls in 60 lb. cases.
9½ lb. rolls in 57 lb. cases."

Cottonseed oil is used as a partial substitute for oleo oil or neutral lard. It never fully replaces them, but is added to some combination of those two ingredients to cheapen the product. It is a liquid within the range of temperature to which butter is exposed, and its use is, therefore, limited to such a proportion in any formula as will not soften the product beyond the usual consistency of butter. Its use would doubtless increase largely were it not for the fact that no process has been discovered that will take away its characteristic flavor. To make a high-grade oleomargarine it is absolutely essential that all its constituent oils respond fully to the neutralizing treatment by which their characteristic odors and flavors are removed, so that they will take on the flavor of butter from the aromatic principles of the milk or cream with which they are churned. Cottonseed oil, when forming any considerable proportion of oleomargarine, betrays its presence, and those manufacturers making a specialty of high-class table products have discontinued its use altogether.

Oleo oil is obtained from beef fat by the processes of settling, crystallization, and pressure, which separate it from the stearin and the fiber. Its manufacture is more widely distributed than that of neutral lard, but is principally confined to the large packing houses, which supply their own oleomargarine departments and also the independent manufacturers and the export trade. By independent manufacturers is meant those who produce oleomargarine exclusively, in contradistinction to those who subordinate it to slaughtering and meat packing. None of the independent manufacturers make their own oleo oil.

After the animal is slaughtered the fat is removed and placed in a vat of warm water, where it is thoroughly washed to remove blood and adhering impurities. It is then chilled and hardened with a bath of ice water, after which it is finely comminuted by cutting machines and melted in steam-jacketed caldrons at a temperature of about 160 degrees Fahrenheit. Slowly revolving agitators keep the fat moving until the melting process is complete, when the whole is allowed to settle. Figure 1 represents a car of comminuted fat from the cutting machine being dumped into the melting kettle. The settling process is accelerated by the addition of salt, which is scattered over

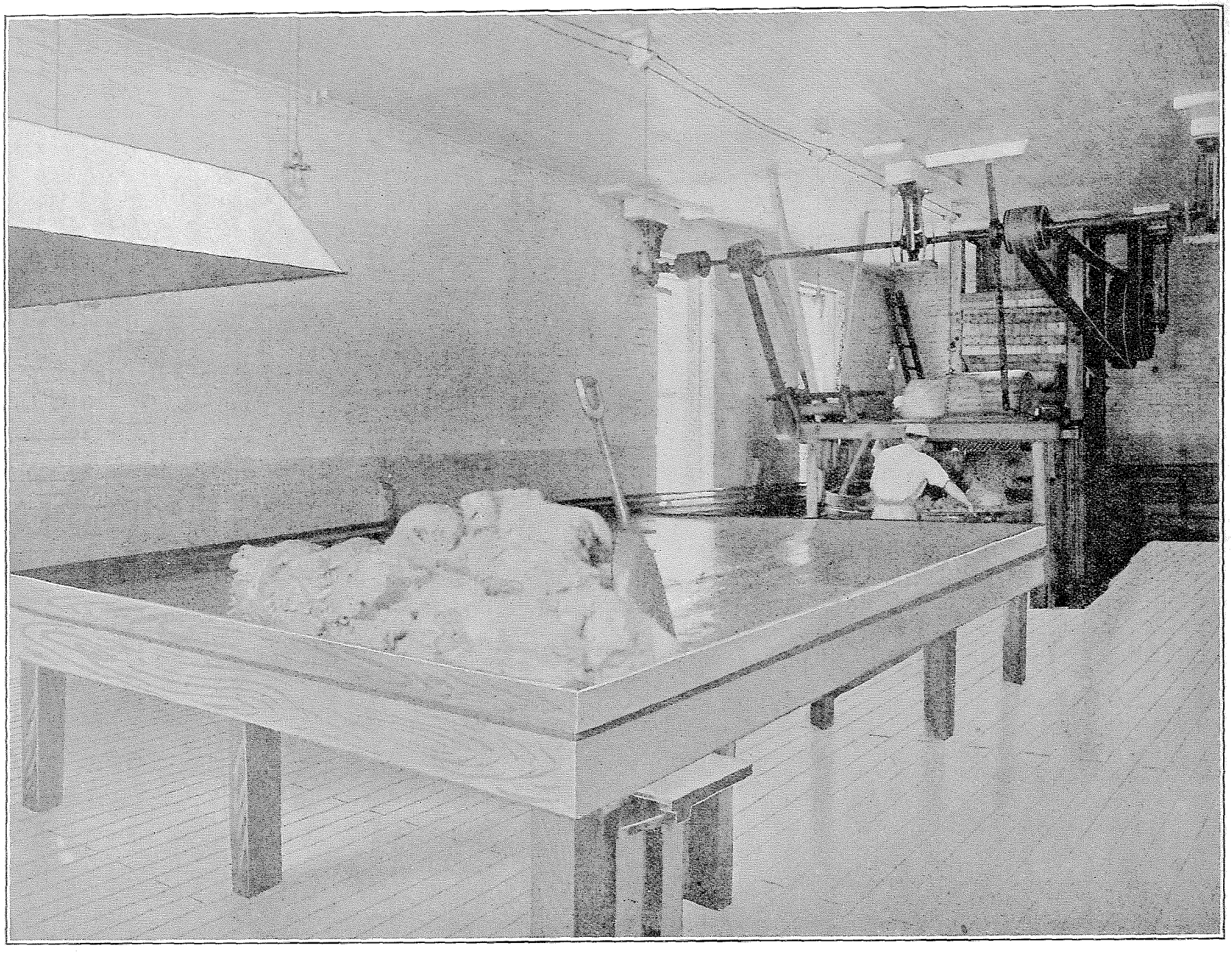

Fig. 4.—The "Working" and Salting Process after Churning and Tempering.

the entire surface of the liquid and settles the fiber or "scrap" to the bottom. After the first settling, the clear oil is carefully siphoned to a second series of jacketed caldrons, usually on the floor below, where more salt is added, and the temperature controlled until a second settling is completed. This demembranized fat is now siphoned into mounted vats and allowed to stand from three to five days in a temperature favorable to the crystallization of the stearin, a part of which forms a crust over the top and the remainder settles to the bottom, leaving the clear oil between. It is a common phenomenon in the crystallization of various substances whose specific gravity is not greatly in excess of the mother liquor that, cooling first at the top, a portion of the substance which is being crystallized out forms a crust over the surface and the remaining portion is precipitated. When the vats have stood the required time the crust is broken into fine particles and the whole is given a thorough mechanical mixing which leaves it of a mushy consistency. It is then wheeled to a revolving table surrounded by skilled workmen who wrap the mixture into small packages with canvas cloths—each containing about 3 pounds—which are built into the presses. The oleo oil is then separated by great pressure, slowly and gradually applied, and flows from the presses into a large receiving tank on the floor below, from which it is piped to the oleomargarine department or is drawn into new oak tierces and allowed to harden in preparation for shipment to independent manufacturers or for export. Figure 2 shows 2 presses, one filled and the other in process of being filled.

All manufacturers of oleo oil follow substantially the method above described, but the system of grading and the character of the fat selected differ greatly. The number of grades manufactured is from three to five, and, when the market is active and prices are high, about all the fat taken in slaughtering, both from cattle and sheep, is worked into one grade or another. The oil made from sheep fat can not be neutralized, and retains the characteristic odor and flavor of the animal to such degree as to be unfit for the oleomargarine demanded in American markets. It is exported to Europe, where there is demand for cheaper oils. With the beef fats the character of the animal from which they are taken is the most potent factor in the selection. Some manufacturers work into their highest grade of oleo oil practically all the fat taken from a good steer, and make one or two lower grades from the fat of cows and "canners." Other manufacturers make their highest grade from the caul and other selected fats of the best beeves, using certain intestinal and other lower forms, together with that taken from poorer animals, in making from one to three lower grades. As previously indicated, the manufacture of oleo oil is more widely distributed than that of neutral lard, and, while it is largely confined to the big packing houses, considerable quantities are made in large cities, outside the centers of the packing industry, from fats collected in part from abattoirs and in part from retail butchers. The quantity of oleo oil obtained by the process described is, by weight, about 50 per cent of the fat treated. About 28 per cent is tallow and stearin and the remainder is lost in shrinkage. The quantity obtained from each beef is difficult of exact determination because it varies so greatly with the size and condition of the animal when slaughtered.

Compared with oleo oil, the manufacture of neutral lard is a simple process. Two grades are made—one from the leaf, the other from the back fat of the hog. Its manufacture is almost exclusively confined to large packing houses, but there are independent manufacturers of oleomargarine located near the packing centers who prefer to buy the fat as it is taken from the animal and work it into neutral by their own process. In the packing plants the leaf fat is taken from the animal immediately after killing, hung on mounted racks, and wheeled into refrigerators to remove as quickly as possible all animal heat. It is next chopped finely or reduced to pulp by machinery and melted in jacketed kettles exactly similar to those used for oleo oil. When the melting process is complete it is allowed to settle, the precipitation of the fiber being accelerated by the addition of salt as in the case of oleo oil. After the settling process the clear oil is siphoned to a receiving tank, and what is not used in oleomargarine is tierced for shipment. A good quality of leaf fat will produce by careful handling about 90 per cent of its weight in neutral, and each animal will yield an average of eight or nine pounds. Comparatively little neutral is made from back fat. The amount used, however, depends much on the relative demand for neutral and ordinary lard products, as it is sometimes more advantageous to work fats into one form than another. The oil made from back fat retains more of the flavor peculiar to lard and, like the lower grades of oleo oil, is less free from stearin or other undesirable constituents. Some packing houses mix a small per cent of back fat with the "leaf" in making their highest grade of neutral, and oleomargarine manufacturers sometimes use both grades of the finished oil in combination. The difference in price between the two is usually slight, and neutral made exclusively from "leaf" is generally sought. Independent manufacturers of oleomargarine, who make their own neutral lard, give the fat a more extended treatment than that described as the process of the packers. In addition to the separation of the fiber by the process of settling, the clear oil is drawn into a large vat of salt water at a low temperature, where it is again chilled and hardened, and is allowed to remain for several hours. It is then placed on shelves to drain, and is again melted when ready for churning. This treatment carries the neutralizing process to a higher degree of perfection and improves the texture of the oil.

After a detailed description of the methods of manufacturing its principal ingredients, the manufacture of oleomargarine itself may be described briefly. In those independent plants where both oleo oil and neutral lard are purchased for use, melting tanks are provided for each, in which they are melted separately, after being taken from the tierces in which they are shipped. They are then piped or pumped to a mixing tank mounted on

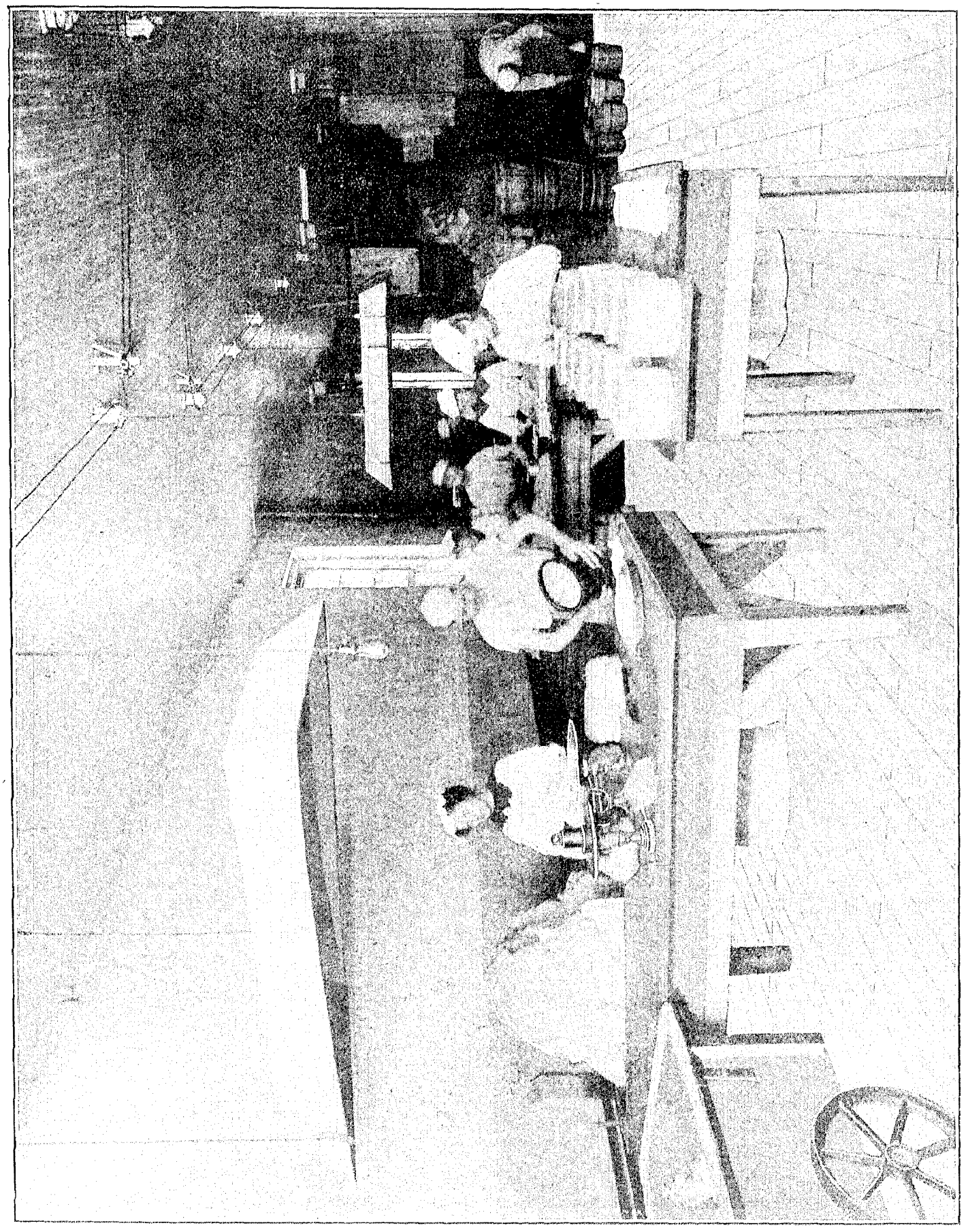

Fig. 5.—Packing Oleomargarine for Market.

weighing scales, where the exact proportions demanded by the working formula are ascertained. If cottonseed oil is required by the formula, a separate tank for it is usually provided. If butter is to be used instead of milk or cream, a separate melting tank is also provided for that. After the oils are melted and weighed into the mixing tank together, the mixture is piped or pumped into the churn, where it receives the milk and coloring matter. The whole mass is then churned together, as described on page 8. In the packing houses liquid oleo oil and neutral lard are piped from the oil room direct to the weighing tank. After churning, the liquid oleomargarine is allowed to flow into a vat of ice water, which chills and hardens it before crystallization can take place. It is next shoveled into mounted cars and wheeled to the "tempering room," where it stands for several hours, until sufficiently softened for the machine butter workers. After the salt has been worked through it, it is put up in the different forms described on page 10, and is stored in refrigerators to await shipment. Figure 3 represents an actual scene in the churning room of a large factory. At the left of the picture is seen a quantity of oleomargarine which has just been taken from the chilling vat after churning, and is ready for the "tempering room." At the right the contents of a churn are being drawn off into the chilling vat. The pipe descending from the ceiling brings a stream of ice water from a reservoir above into immediate contact with the stream of liquid oleomargarine for the purpose of chilling it as quickly as possible. Figure 4 represents the working and salting process, and figure 5 a scene in the preparation of the finished product for market.

While there is substantial uniformity in the process of manufacture, there is great diversity in the grades and combinations of material used and, consequently, in the character of the finished article. The cheapest grades of oleomargarine found on the market are made from the lowest grades of oleo oil and neutral lard, to which is added the limit of cottonseed oil, and the whole is churned with skimmed milk or buttermilk, salted with common salt, and colored with the cheaper grades of coloring matter. These low-grade oils may be manufactured from "scrap" fat and made firm by the addition of more stearin or other similar substances so that a greater proportion of cottonseed oil can be added to the combination. Sometimes glycerine is added to give the product a glossy appearance and sugar or glucose to sweeten or give texture. The highest grades are made from pure oleo oil and neutral lard of best quality, churned with whole milk, cream, or creamery butter, salted with Ashland salt, and colored with annatto or other coloring matter. The number of grades manufactured varies from 2 to 6, but all large factories receive orders for special lots to be made in a prescribed way. One factory visited by the writer made only 2 grades—the higher from high-class oils churned with whole milk, the other from low-grade oils churned with the same. In this case the quality of the oleo oil and neutral was the only basis of grading the finished product. In another factory the lowest grade manufactured was a combination of the best oleo oil and neutral churned with whole milk. Three higher or more expensive ones were made with the same oils, each depending for its rank on the amount of pure cream or creamery butter added in the churning process. A large proportion of the independent manufacturers are making a specialty of the higher grades, which include only the best oleo oil and neutral, the grade being determined from the quantity and character of the dairy product added.

Table 8 presents in detail the statistics for the industry by states and territories, as collected by the Twelfth Census, for the census year ending May 31, 1900.

TABLE 8.—OLEOMARGARINE MANUFACTURE, BY STATES AND TERRITORIES: 1900.

	United States.	Illinois.	Indiana.	Rhode Island.	All other states and territories.[1]
Number of establishments	24	7	3	3	11
Character of organization:					
Individual	4	1			3
Firm and limited partnership	3	1			2
Incorporated company	17	5	3	3	6
Established during the decade	16	4	2	3	7
Established during the census year	3		1		2
Capital:					
Total	$3,028,646	$1,131,835	$137,393	$702,209	$1,052,119
Land	$200,868	$40,674	$17,700	$31,494	$111,000
Buildings	$535,620	$165,686	$15,700	$100,000	$254,234
Machinery, tools, and implements	$482,477	$150,286	$24,500	$77,949	$229,792
Cash and sundries	$1,804,681	$775,239	$79,493	$492,856	$457,093
Proprietors and firm members	10	3			7
Salaried officials, clerks, etc:					
Total number	394	120	27	25	222
Total salaries	$412,012	$110,784	$27,790	$31,626	$241,812
Officers of corporations—					
Number	8	6		2	
Salaries	$13,100	$11,100		$2,000	
General superintendents, managers, clerks, and salesmen—					
Total number	386	114	27	23	222
Total salaries	$398,912	$99,684	$27,790	$29,626	$241,812
Men—					
Number	348	90	24	19	215
Salaries	$373,698	$82,238	$25,790	$27,506	$238,164
Women—					
Number	38	24	3	4	7
Salaries	$25,214	$17,446	$2,000	$2,120	$3,648

[1] Distributed as follows: District of Columbia, 2; Kansas, 2; Kentucky, 1; Missouri, 1; New Jersey, 1; Ohio, 2; Pennsylvania, 1; Texas, 1.

TABLE 8.—OLEOMARGARINE MANUFACTURE, BY STATES AND TERRITORIES: 1900—Continued.

	United States.	Illinois.	Indiana.	Rhode Island.	All other states and territories.[1]
Wage-earners, including pieceworkers and total wages:					
Greatest number employed at any one time during the year	1,334	662	91	147	434
Least number employed at any one time during the year	867	410	48	103	306
Average number	1,085	528	70	127	360
Wages	$534,544	$273,184	$38,968	$52,796	$169,596
Men, 16 years and over—					
Average number	1,007	490	62	111	344
Wages	$511,238	$261,655	$36,378	$47,856	$165,349
Women, 16 years and over—					
Average number	66	36	8	16	6
Wages	$21,109	$11,229	$2,590	$4,940	$2,350
Children, under 16 years—					
Average number	12	2			10
Wages	$2,197	$300			$1,897
Average number of wage-earners, including pieceworkers, employed during each month:					
Men, 16 years and over—					
January	1,138	582	64	113	379
February	1,136	583	63	116	374
March	1,143	579	66	115	383
April	1,034	492	63	113	366
May	925	442	58	108	317
June	818	372	51	101	294
July	816	364	59	99	294
August	854	378	58	100	318
September	916	423	58	111	324
October	1,060	523	66	115	356
November	1,110	573	65	118	354
December	1,135	575	73	120	367
Women, 16 years and over—					
January	77	44	8	17	8
February	77	44	7	18	8
March	77	42	8	18	9
April	68	39	5	18	6
May	63	36	6	16	5
June	48	25	6	13	4
July	50	24	8	13	5
August	52	25	7	14	6
September	60	34	8	16	2
October	68	33	10	18	7
November	72	39	9	18	6
December	77	41	10	19	7
Children, under 16 years—					
January	16	3			13
February	16	3			13
March	16	3			13
April	13				13
May	12				12
June	8	2			6
July	8	2			6
August	8	2			6
September	9	3			6
October	10	3			7
November	16	3			13
December	16	3			13
Miscellaneous expenses:					
Total	$2,489,784	$1,386,148	$228,726	$121,912	$752,998
Rent of works	$16,800	$11,280	$750	$1,000	$3,770
Taxes, not including internal revenue	$11,314	$4,447	$2,640	$1,460	$2,767
Rent of offices, insurance, interest, and all sundry expenses not hitherto included	$2,461,670	$1,370,421	$225,336	$119,452	$746,461
Materials used:					
Total cost	$7,639,501	$3,353,904	$702,749	$912,912	$2,669,936
Milk and cream—					
Pounds	23,684,395	10,023,581	3,081,093	1,653,743	8,926,028
Cost	$579,068	$255,968	$40,275	$35,898	$246,927
Oleo oil—					
Pounds	33,724,621	15,582,919	2,916,120	4,230,000	10,995,582
Cost	$2,744,235	$1,192,239	$229,511	$336,728	$935,757
Neutral lard—					
Pounds	37,651,741	17,561,013	3,494,356	3,335,100	13,260,772
Cost	$2,976,870	$1,348,416	$280,656	$292,636	$1,055,162
Cottonseed oil—					
Pounds	11,818,921	4,585,760	1,921,656	1,456,300	3,855,205
Cost	$567,790	$222,002	$89,934	$72,455	$183,399
Butter—					
Pounds	396,956	168,552	9,864	29,165	189,375
Cost	$61,176	$31,770	$2,466	$4,958	$21,982
Salt—					
Pounds	6,962,233	3,697,680	969,766	402,600	1,892,187
Cost	$58,887	$30,531	$8,541	$2,013	$17,802
Color—					
Pounds	204,418	93,931	24,038	12,008	74,446
Cost	$32,078	$12,162	$4,363	$2,441	$13,112
Sugar—					
Pounds	137,842	804		80,800	56,238
Cost	$7,084	$44		$4,040	$3,000
Glucose—					
Pounds	32,965		32,965		
Cost	$494		$494		
Stearin and oleo stock—					
Pounds	134,541	28,824		26,190	79,527
Cost	$4,320	$1,890		$1,833	$597
Fuel	$45,611	$21,776	$3,500	$6,302	$14,033
Rent of power and heat	$4,244	$3,027	$1,100		$117
Mill supplies	$5,745	$1,979	$100	$1,860	$1,806
All other materials	$501,107	$232,100	$41,809	$92,113	$135,085
Freight	$50,792			$9,635	$41,157
Products:					
Total value	$12,499,812	$5,852,413	$1,107,284	$1,345,133	$4,194,982
Oleomargarine—					
Pounds	104,633,214	45,574,073	10,596,071	10,433,996	38,029,074
Value	$12,280,357	$5,769,678	$1,107,284	$1,220,623	$4,188,772
Value of all other products, including by-products	$213,455	$82,735		$124,510	$6,210

[1] Distributed as follows: District of Columbia, 2; Kansas, 2; Kentucky, 1; Missouri, 1; New Jersey, 1; Ohio, 2; Pennsylvania, 1; Texas, 1.

TABLE 8.—OLEOMARGARINE MANUFACTURE, BY STATES AND TERRITORIES: 1900—Continued.

	United States.	Illinois.	Indiana.	Rhode Island.	All other states and territories.[1]
Comparison of products:					
Number of establishments reporting for both years	10	3	1	3	3
Value for census year	$8,545,780	$4,903,128	$709,014	$1,345,133	$1,588,505
Value for preceding business year	$6,196,185	$3,120,564	$625,000	$1,256,048	$1,194,578
Power:					
Number of establishments reporting	21	6	2	3	10
Total horsepower	1,356	764	35	133	424
Owned—					
Engines—					
Steam:					
Number	22	8	1	3	10
Horsepower	1,281	710	20	133	418
Rented horsepower	75	54	15		6
Establishments classified by number of persons employed, not including proprietors and firm members:					
Total number of establishments	24	7	3	3	11
Under 5	2				2
5 to 20	6	3		1	2
21 to 50	8		3	1	4
51 to 100	3	2			1
101 to 250	2			1	1
251 to 500	3	2			1

[1] Distributed as follows: District of Columbia, 2; Kansas, 2; Kentucky, 1; Missouri, 1; New Jersey, 1; Ohio, 2; Pennsylvania, 1; Texas, 1.

Twelfth Census of the United States.

CENSUS BULLETIN.

No. 139. WASHINGTON, D. C. February 13, 1902.

AGRICULTURE.

MAINE.

Hon. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I have the honor to transmit herewith, for publication in bulletin form, the statistics of agriculture for the state of Maine, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that—

> The schedules relating to agriculture shall comprehend the following topics: Name of occupant of each farm, color of occupant, tenure, acreage, value of farm and improvements, acreage of different products, quantity and value of products, and number and value of live stock. All questions as to quantity and value of crops shall relate to the year ending December thirty-first next preceding the enumeration.

A "farm," as defined by the Twelfth Census, includes all the land, under one management, used for raising crops and pasturing live stock, with the wood lots, swamps, meadows, etc., connected therewith. It also includes the house in which the farmer resides, and all other buildings used by him in connection with his farming operations.

The farms of Maine, June 1, 1900, numbered 59,299, and had a value of $96,502,150. Of this amount $47,142,700, or 48.9 per cent, represents the value of buildings, and $49,359,450, or 51.1 per cent, the value of land and improvements other than buildings. On the same date the value of farm implements and machinery was $8,802,720, and of live stock, $17,106,034. These values, added to that of farms, give the "total value of farm property," $122,410,904.

The products derived from domestic animals, poultry, and bees, including animals sold or slaughtered on farms, are referred to in this bulletin as "animal products." The total value of all such products, together with the value of all crops, is termed "total value of farm products." This value for 1899 was $37,113,469, of which amount $15,159,415, or 40.8 per cent, represents the value of animal products, and $21,954,054, or 59.2 per cent, the value of crops, including forest products. The total value for 1899 exceeds that reported for 1889 by $15,064,249, or 68.3 per cent. A large part of this apparent increase is doubtless due to a more detailed enumeration in 1900 than in 1890. Of the actual increase, the greater part has been in the products of market gardens, dairies, and poultry farms.

The value of "net farm products," or the "gross farm income," is obtained by deducting from the "total value of farm products" the value of the products fed to live stock on the farms of the producers. In 1899 the reported value of products fed was $9,847,860, leaving $27,265,609 as the gross farm income. The percentage which this amount is of the "total value of farm property" is referred to in the text of the bulletin as the "percentage of gross income upon investment." For Maine in 1899 it was 22.3 per cent.

As no reports of expenditures for taxes, interest, insurance, feed for stock, and similar items have been obtained by any census, no statement of net farm income can be given.

The statistics presented in this bulletin will be treated in greater detail in the final volume, "Statistics of Agriculture for the United States," which will be published about June 1, 1902. The present publication is designed to present a succinct advance statement for Maine.

Very respectfully,

L. G. Powers.
Chief Statistician for Agriculture.

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AGRICULTURE IN MAINE.

GENERAL STATISTICS.

Maine has a total land area of 29,895 square miles, of which 9,844 square miles, or 32.9 per cent, are included in farms. The surface consists of two great slopes, the northern and the southern. The northern slope, comprising about one-third of the total area, is drained by the St. John River and its tributaries, and the southern slope by numerous streams which flow into the Atlantic. The broad, flat divide which separates the two slopes serves as a natural reservoir, most of the rivers of the state having their sources in the large lakes of this region. Some of the lakes have outlets on both sides of the watershed.

The surface of a large part of the state is rugged and broken. The soil of the river valleys is very productive, but in the mountainous regions and along the seacoast it is for the most part sterile. The Aroostook Valley, which comprises the largest area of fertile farming land in New England, has a deep, porous, yellow loam, especially adapted to the growing of fruits and vegetables. The remarkable development of this part of the state in the past ten years is an important feature revealed by the statistics presented in this bulletin.

NUMBER AND SIZE OF FARMS.

The following table gives, by decades since 1850, the number of farms, the total and average acreage, and the per cent of farm land improved.

TABLE 1.—FARMS AND FARM ACREAGE: 1850 TO 1900.

YEAR.	Number of farms.	NUMBER OF ACRES IN FARMS.				Per cent of farm land improved.
		Total.	Improved.	Unimproved.	Average.	
1900	59,299	6,299,946	2,386,889	3,913,057	106.2	37.9
1890	62,013	6,179,925	3,044,666	3,135,259	99.7	49.3
1880	64,309	6,552,578	3,484,908	3,067,670	101.9	53.2
1870	59,804	5,838,058	2,917,793	2,920,265	97.6	50.0
1860	55,698	5,727,671	2,704,183	3,023,538	102.8	47.2
1850	46,760	4,555,393	2,039,596	2,515,797	97.4	44.8

The number of farms in 1900 was 12,539 greater than in 1850, a gain of 26.8 per cent. Since 1880, however, the number has been decreasing, the loss for the past decade having been 2,714 farms, or 4.4 per cent.

Except in the decade 1880–1890, the total farm acreage has increased steadily since 1850. An increase since 1890 of 120,021 acres, accompanying the decrease in the number of farms, resulted in a gain of 6.5 acres in the average size of farms, which was larger in 1900 than at any previous time.

The acreage of improved land increased steadily until 1880, when a marked decline began, and in 1900 the percentage of farm land improved was smaller than ever before reported. This change, although less marked than in other New England states, is doubtless due to the same general causes, namely, the demands of a growing city population for the products of special branches of agriculture, notably dairying and market gardening, and the competition of western land in cereal production. The lands which are most fertile and most easily tilled have been retained under cultivation and made increasingly productive. As a result, the aggregate income derived from meadow, orchard, and plow lands is now greater than it was in 1860, although the acreage under cultivation is considerably less. The less fertile lands have been found to afford greater incomes as permanent pastures than as meadow or plow lands, and each decade since 1870 has shown an increasing acreage of such land reported as unimproved.

FARM PROPERTY AND PRODUCTS.

Table 2 presents a summary of the principal statistics relating to farm property and products for each census year, beginning with 1850.

TABLE 2.—VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND OF FARM PRODUCTS: 1850 TO 1900.

YEAR.	Total value of farm property.	Land, improvements, and buildings.	Implements and machinery.	Live stock.	Farm products.[1]
1900	$122,410,904	$96,502,150	$8,802,720	$17,106,034	$37,113,469
1890	122,347,283	98,567,730	5,499,413	18,280,140	22,049,220
1880	123,805,039	102,357,615	4,948,048	16,499,376	21,945,489
1870[2]	131,128,193	102,961,951	4,809,113	23,857,129	[3]33,470,044
1860	97,424,385	78,688,525	3,298,327	15,437,533	----------
1850	66,852,031	54,861,748	2,284,557	9,705,726	----------

[1] For year preceding that designated.
[2] Values for 1870 were reported in depreciated currency. To reduce to specie basis of other figures they must be diminished one-fifth.
[3] Includes betterments and additions to live stock.

The value of farm property in 1900 was nearly twice as great as in 1850, although the gain in the decade 1890–1900, was less than one-tenth of 1 per cent. In this decade there was a slight decrease in the value of land, improvements, and buildings, and also in that of live stock, but in the value of implements and machinery there was a gain of 60.1 per cent. A portion of this increase, however, is doubtless the result of a more detailed enumeration in 1900 than heretofore.

COUNTY STATISTICS.

Table 3 gives an exhibit of general agricultural statistics by counties.

TABLE 3.—NUMBER AND ACREAGE OF FARMS, AND VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, JUNE 1, 1900, WITH VALUE OF PRODUCTS OF 1899 NOT FED TO LIVE STOCK, AND EXPENDITURES IN 1899 FOR LABOR AND FERTILIZERS, BY COUNTIES.

COUNTIES.	NUMBER OF FARMS.		ACRES IN FARMS.		VALUES OF FARM PROPERTY.				Value of products not fed to live stock.	EXPENDITURES.	
	Total.	With buildings.	Total.	Improved.	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		Labor.	Fertilizers.
The State	59,299	58,136	6,299,946	2,336,889	$49,359,450	$47,142,700	$3,802,720	$17,106,034	$27,265,609	$2,667,260	$819,680
Androscoggin	2,924	2,900	257,400	125,701	2,897,270	3,045,050	470,650	906,907	1,574,083	170,710	46,840
Aroostook	6,938	6,761	793,205	389,232	6,863,290	4,274,020	1,325,440	2,220,671	4,553,169	473,010	268,700
Cumberland	5,101	5,030	408,946	148,436	5,371,850	5,067,720	775,840	1,303,913	2,509,406	274,100	67,480
Franklin	2,526	2,462	393,870	158,051	1,774,550	1,713,290	316,300	874,136	1,038,436	98,290	22,790
Hancock	2,784	2,747	274,390	51,353	1,783,450	1,895,510	316,530	571,943	912,518	91,200	16,940
Kennebec	5,523	5,249	479,749	180,994	4,650,350	4,846,950	776,510	1,564,277	2,258,618	236,250	56,270
Knox	2,115	2,091	156,480	47,091	1,507,890	1,682,720	249,970	477,548	767,607	72,320	10,860
Lincoln	2,808	2,779	223,069	58,430	1,649,490	1,851,050	324,540	582,060	884,035	59,290	14,340
Oxford	4,420	4,320	620,704	198,474	3,604,620	3,478,880	576,650	1,443,731	2,000,323	181,690	45,390
Penobscot	6,076	6,007	663,671	293,240	4,496,330	4,845,340	999,020	2,011,128	2,787,258	263,690	68,700
Piscataquis	1,935	1,888	265,180	104,223	1,325,180	1,382,870	310,730	632,232	858,652	85,520	24,270
Sagadahoc	1,238	1,221	115,043	39,279	973,950	1,052,990	174,840	299,840	555,006	61,830	19,200
Somerset	4,122	4,068	579,301	240,474	3,093,060	3,199,150	601,210	1,435,540	1,868,907	186,060	52,160
Waldo	3,674	3,637	381,531	155,789	2,326,690	2,535,680	526,710	974,963	1,544,808	123,840	29,530
Washington	2,051	2,022	248,782	54,919	1,232,670	1,225,490	278,890	479,714	753,171	64,370	14,070
York	5,064	4,954	438,625	141,203	5,808,810	5,045,990	778,890	1,327,431	2,399,612	225,090	62,140

For the 7 counties which reported more farms in 1900 than in 1890, the percentages of increase are as follows: Aroostook, 12.3; Kennebec, 5.6; Androscoggin, 2.2; Sagadahoc, 1.4; Franklin, Knox, and Oxford each less than 1 per cent. The counties reporting the largest relative decreases were Hancock, Washington, Waldo, and Penobscot, the percentages being 28.4, 16.9, 10.7, and 9.2, respectively.

The portion of the total land surface included in farms varied from 11.4 per cent in Piscataquis county to 85.2 per cent in Kennebec county, and the average size of farms, from 74 acres in Knox county to 156 acres in Franklin county.

The total acreage in farms increased in the last decade in every county except Hancock, Washington, Piscataquis, and Somerset, which reported decreases of 10.6 per cent, 8.9 per cent, 4.0 per cent, and 0.5 per cent, respectively. The greatest relative increase, 9.7 per cent, occurred in Aroostook county, which was the only county that reported a larger acreage of improved land in 1900 than in 1890. In 1900 the per cent of improved farm land varied from 18.7 in Hancock county to 49.1 in Aroostook county.

All counties except Androscoggin, Aroostook, and Oxford show decreases since 1890 in the value of farms. With the exception of the increase of 48.1 per cent in Aroostook county, and the decreases of 21.7 per cent and 20.2 per cent in Hancock and Waldo counties, respectively, the changes were slight. The average value of farms varied from $1,199 in Washington county to $2,144 in York county. In the south-central part of the state the value of the farm buildings exceeds that of the land. Elsewhere the reverse is true, especially in Aroostook county and in the extreme southeastern part of the state.

The value of implements and machinery increased greatly in every county. In Aroostook county it was more than three times as large in 1900 as in 1890. The average value per farm ranged from $114 in Hancock county to $191 in Aroostook county.

The only counties in which the value of live stock increased are Aroostook and Sagadahoc, where gains of 18.5 per cent and 1.2 per cent, respectively, were reported. The most marked decrease occurred in Washington county, and amounted to 21.7 per cent.

The average value per farm of the products of 1899 not fed to live stock ranged from $315 in Lincoln county to $656 in Aroostook county. The average value per acre was greatest in Cumberland, where it was $6.14, and least in Franklin, where it was $2.64.

The average expenditure per farm for labor, including value of board furnished, varied from $21 in Lincoln county to $68 in Aroostook county. Waldo and Washington counties each reported a smaller expenditure for fertilizers than in 1890. All other counties show increases, the amounts reported by Hancock and Aroostook counties in 1900 being three and five times, respectively, as great as the amounts reported in 1890. The average expenditures per farm varied from $5 in Lincoln and Knox counties to $39 in Aroostook county. The general use of commercial fertilizers in recent years in the growing of potatoes accounts for the relatively large expenditure in the latter county.

FARM TENURE.

Table 4 gives a comparative exhibit of farm tenure for 1880, 1890, and 1900. In Table 5 the tenure of farms for 1900 is given by race of farmer, and "farms operated by owners" are subdivided into groups designated as "owners," "part owners," "owners and tenants," and "managers." These terms denote, respectively: (1) Farms operated by individuals who own all the land they cultivate; (2) farms operated by individuals who own a part of the land and rent the remainder from others; (3) farms operated under the joint direction and by the united labor of two or more individuals, one owning the farm or a part of it, and the other, or others, owning no part, but receiving for supervision or labor a share of the products; and (4) farms

operated by individuals who receive for their supervision and other services a fixed salary from the owners.

TABLE 4.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES: 1880 TO 1900.

YEAR.	Total number of farms.	NUMBER OF FARMS OPERATED BY—			PER CENT OF FARMS OPERATED BY—		
		Owners.[1]	Cash tenants.	Share tenants.	Owners.[1]	Cash tenants.	Share tenants.
1900	59,299	56,524	2,030	745	95.3	3.4	1.3
1890	62,013	58,643	1,976	1,394	94.6	3.2	2.2
1880	64,309	61,528	1,628	1,153	95.7	2.5	1.8

[1] Including "part owners," "owners and tenants," and "managers."

TABLE 5.—FARMS OF SPECIFIED TENURES, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER.

RACE.	Total number of farms.	Owners.	Part owners.	Owners and tenants.	Managers.	Cash tenants.	Share tenants.
The State	59,299	54,263	775	569	917	2,030	745
White	59,270	54,237	774	569	916	2,029	745
Colored[1]	29	26	1		1	1	

[1] Including 5 Indians.

The number of farms operated by owners has decreased 5,004 since 1880, but, as the total number of farms has also decreased, the percentage of farms operated by owners has not materially changed. The total number of tenant-operated farms, June 1, 1900, varied but 6 from the number reported twenty years before. Within the class, however, there has been a significant change in the intervening years, the number of share tenants having decreased 35.4 per cent, while the number of cash tenants increased in a corresponding degree. In 1880, 41.5 per cent of all tenants were share tenants, while in 1900 only 26.8 per cent were of this class. The change in the relative number of cash and share tenants is the result of a growing sentiment on the part of both landlord and tenant in favor of the cash-payment system, and indicates greater independence and financial responsibility on the part of the tenant class as a whole. Considered as evidence of agricultural progress, the significance of this change is enhanced by the fact that the greatest relative numbers of share tenants are found in the most recently developed and least improved sections of the state. In Aroostook county 42.9 per cent of all tenants are share tenants, while in Cumberland county the corresponding per cent is but 19.7.

No previous census has reported the number of farms operated by "part owners," "owners and tenants," or "managers," but it is believed that the number conducted by the last-named class is constantly increasing.

OWNERSHIP OF RENTED FARMS.

The ownership of 2,633 of the 2,775 rented farms in Maine was ascertained by the enumerators; that of 142 was unreported. The titles to the 2,633 farms are vested in 2,563 owners, an average of about 103 farms to every 100 owners. Of the 2,563 owners, 2,510 possess 1 farm each; 45, 2 each; 6, 3 each; and the remaining 2 own 4 and 11 farms, respectively.

Of the 2,563 owners, 2,165, possessing 2,235 farms, reside in Maine. The owners of 1,868 of these farms live in the counties in which their farms are located. Of the nonresident owners 336 live in the North Atlantic states; 5, in the South Atlantic states; 14, in the North Central states; 32, in the Western states; 1, in a South Central state; and 10, in foreign countries. None of them possess more than one farm. The total value of the 398 farms owned by these nonresidents was $719,675, an average of $1,808. This amount is so small as to make it apparent that few, if any, of the nonresident owners derive their support from farms in Maine.

Of the 2,775 rented farms, only 5 are worth $25,000 or over. These 5 farms have an aggregate value of $157,800, an average of $31,560. Eighteen rented farms are worth between $10,000 and $25,000 each, their aggregate value being $229,200, and their average value $12,733. The remaining 2,752 rented farms have a total value of $3,576,160. As the average value of these farms is but $1,299, it is evident that the number of landlords in Maine who are supported by the incomes from their rented farms is very small.

FARMS CLASSIFIED BY RACE OF FARMER AND BY TENURE.

Tables 6 and 7 present the principal statistics for farms classified by race of farmer and by tenure.

TABLE 6.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER AND BY TENURE, WITH PERCENTAGES.

RACE OF FARMER, AND TENURE.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	59,299	106.2	6,299,946	100.0	$122,410,904	100.0
White farmers	59,270	106.3	6,298,591	100.0	122,383,844	100.0
Colored farmers[1]	29	46.7	1,355	(2)	27,060	(2)
Owners	54,263	105.3	5,712,308	90.7	109,959,024	89.8
Part owners	775	168.7	130,704	2.1	2,334,770	1.9
Owners and tenants	569	133.4	75,910	1.2	1,614,390	1.3
Managers	917	138.0	126,537	2.0	3,668,370	3.0
Cash tenants	2,030	86.9	176,491	2.8	3,536,510	2.9
Share tenants	745	104.7	77,996	1.2	1,297,840	1.1

[1] Including 5 Indians.
[2] Less than one-tenth of 1 per cent.

TABLE 7.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY RACE OF FARMER AND BY TENURE.

RACE OF FARMER, AND TENURE.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State	$832	$795	$148	$289	$460	22.3
White farmers	833	795	148	289	460	22.3
Colored farmers[1]	440	333	52	108	265	28.4
Owners	808	785	147	286	457	22.5
Part owners	1,344	1,024	231	414	743	24.7
Owners and tenants	1,080	1,062	218	477	729	25.7
Managers	1,885	1,509	228	428	591	14.8
Cash tenants	802	636	97	207	331	19.0
Share tenants	756	646	119	221	376	21.6

[1] Including 5 Indians.

The value of the farm property of the 24 negroes who operate farms in Maine is $24,915, and that of the 5 Indian farmers, all of whom are owners, is $2,145.

Farms operated by "part owners" have the largest average area, 168.7 acres, and those operated by "cash tenants" the smallest, 86.9 acres. Of the 114 farms containing 1,000 acres each or over, 99 are operated by "owners;" 6, by "managers;" 5, by "part owners;" 3, by "share tenants;" and 1, by an "owner and tenant."

Many of the farms operated by managers are adjuncts of public institutions. Such farms, as a rule, are favorably located and highly improved, and the average values of the several classes of farm property are generally larger for this than for any other group of farms classified by tenure. The ratio which the gross income of these farms bears to the total value of their farm property is, however, smaller than for the other groups. This is due to the high average valuation of land and buildings, and to the fact that many of these farms are not cultivated primarily for profit.

FARMS CLASSIFIED BY AREA.

Tables 8 and 9, for farms classified by area, present facts corresponding to those given in Tables 6 and 7 for farms classified by race of farmer and by tenure.

TABLE 8.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY AREA, WITH PERCENTAGES.

AREA.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	59,299	106.2	6,299,946	100.0	$122,410,904	100.0
Under 3 acres	375	2.8	1,034	(1)	441,290	0.4
3 to 9 acres	2,042	7.3	14,923	0.2	2,484,250	2.0
10 to 19 acres	2,890	14.1	40,690	0.7	3,752,260	3.1
20 to 49 acres	9,267	34.3	317,627	5.0	13,131,150	10.7
50 to 99 acres	18,644	69.6	1,297,754	20.6	31,386,890	25.7
100 to 174 acres	17,191	123.8	2,127,393	33.8	39,178,374	32.0
175 to 259 acres	5,662	207.0	1,171,767	18.6	17,399,050	14.2
260 to 499 acres	2,598	322.5	837,867	13.3	10,301,900	8.4
500 to 999 acres	516	594.4	306,709	4.9	2,951,890	2.4
1,000 acres and over	114	1,615.5	184,172	2.9	1,380,850	1.1

[1] Less than one-tenth of 1 per cent.

TABLE 9.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY AREA.

AREA.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State	$832	$795	$148	$289	$460	22.3
Under 3 acres	360	706	46	65	300	25.5
3 to 9 acres	391	674	60	92	175	14.4
10 to 19 acres	457	651	76	114	185	14.2
20 to 49 acres	542	625	95	155	268	18.9
50 to 99 acres	661	667	128	227	372	22.1
100 to 174 acres	922	840	170	347	548	24.0
175 to 259 acres	1,268	1,100	219	486	736	24.0
260 to 499 acres	1,714	1,337	290	624	935	23.6
500 to 999 acres	2,773	1,825	344	785	1,194	20.8
1,000 acres and over	7,370	2,733	755	1,255	1,970	16.3

The group of medium-sized farms, containing from 100 to 174 acres each, comprises a larger percentage of the total farm area and of the value of farm property than does any other group. With the exception of slight variations in the average values of buildings on small farms, the average values of the several forms of farm property advance as the farms increase in size. For farms of less than 100 acres each, the value of the buildings exceeds that of the land and improvements other than buildings,

but for larger farms the land is more valuable than the buildings. For the group of farms containing less than 3 acres each, the average values of farm property per acre are relatively high, as this class includes most of the florists' establishments and many city dairies.

The average gross incomes per acre for the various groups are as follows: Farms under 3 acres, $108.82; 3 to 9 acres, $23.94; 10 to 19 acres, $13.10; 20 to 49 acres, $7.82; 50 to 99 acres, $5.34; 100 to 174 acres, $4.42; 175 to 259 acres, $3.56; 260 to 499 acres, $2.90; 500 to 999 acres, $2.01; and 1,000 acres and over, $1.22. In considering the high gross income per acre for farms of less than 3 acres, it should be borne in mind that the incomes of the florists' establishments, nurseries, and city dairies, of which this group is largely composed, are determined not so much by the acreage of land used, as by the amount of capital invested in buildings, implements, and live stock, and the amounts expended for labor and fertilizers.

FARMS CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

Tables 10 and 11 present the leading features of the statistics relating to farms classified by principal source of income.

If for any farm 40 per cent of the products not fed to live stock consists of hay and grain, the farm is designated a "hay and grain" farm. Should 40 per cent of the products consist of vegetables, the farm is designated a "vegetable" farm. The farms of the other groups are classified in the same manner. A "miscellaneous" farm is one whose operator does not derive his principal income from any single class of farm products. Farms which yielded no income in 1899 are classified according to the agricultural operations upon other farms in the same locality.

TABLE 10.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME, WITH PERCENTAGES.

PRINCIPAL SOURCE OF INCOME.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	59,299	106.2	6,299,946	100.0	$122,410,904	100.0
Hay and grain	7,453	97.5	726,661	11.5	13,601,110	11.1
Vegetables	5,263	101.8	535,611	8.5	12,409,818	10.1
Fruit	551	64.2	35,404	0.6	1,075,509	0.9
Live stock	15,048	102.1	1,537,083	24.4	28,978,948	23.7
Dairy produce	17,740	100.6	1,785,286	28.4	38,751,782	31.7
Flowers and plants	65	9.6	625	(1)	293,255	0.2
Nursery products	16	78.4	1,254	(1)	84,940	0.1
Miscellaneous	13,163	127.5	1,678,022	26.6	27,215,542	22.2

[1] Less than one-tenth of 1 per cent.

TABLE 11.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

PRINCIPAL SOURCE OF INCOME.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State	$832	$795	$148	$289	$460	22.3
Hay and grain	891	735	86	113	254	13.9
Vegetables	1,087	747	205	319	731	31.0
Fruit	810	874	113	155	351	18.0
Live stock	710	760	144	312	427	22.2
Dairy produce	825	859	157	343	475	21.7
Flowers and plants	1,898	2,338	209	67	2,181	48.3
Nursery products	3,425	1,475	359	50	2,988	56.3
Miscellaneous	840	790	156	282	478	23.1

Only about one-half of the 7,453 "hay and grain" farms report any domestic animals, and many report no crops except small quantities of hay or grain. These facts explain the relatively small percentage of gross income shown in Table 11 for farms of this group.

For the several classes of farms the average values per acre of products not fed to live stock are: Flowers and plants, $226.84; nursery products, $38.13; vegetables, $7.18; fruit, $5.45; dairy produce, $4.72; live stock, $4.18; miscellaneous, $3.75; hay and grain, $2.60.

The wide variations in the averages and percentages of gross income are largely due to the fact that in computing gross income no deductions are made for expenses involved in operation. For florists' establishments, nurseries, and market gardens the average expenditure for such items as labor and fertilizers represents a far larger percentage of the gross income than in the case of "hay and grain," "live stock," or "miscellaneous" farms. If it were possible to present the average net incomes, the variations shown would be comparatively slight.

FARMS CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

Tables 12 and 13 present data relating to farms classified by the reported value of products not fed to live stock.

TABLE 12.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK, WITH PERCENTAGES.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	59,299	106.2	6,299,946	100.0	$122,410,904	100.0
$0	266	34.6	9,194	0.2	205,870	0.2
$1 to $49	1,842	39.1	71,962	1.1	1,636,920	1.3
$50 to $99	3,886	48.8	189,466	3.0	3,787,910	3.1
$100 to $249	16,215	69.0	1,118,265	17.8	21,035,890	17.2
$250 to $499	19,414	103.0	1,999,205	31.7	36,313,420	29.6
$500 to $999	12,732	148.8	1,831,449	29.1	35,356,810	28.9
$1,000 to $2,499	4,436	207.5	920,587	14.6	19,809,790	16.2
$2,500 and over	508	314.6	159,818	2.5	4,264,794	3.5

TABLE 13.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State	$832	$795	$148	$289	$460	22.3
$0	307	334	37	94	----------	----------
$1 to $49	363	435	37	54	32	3.7
$50 to $99	401	455	44	75	75	7.7
$100 to $249	527	549	80	141	178	13.7
$250 to $499	724	742	137	267	365	19.5
$500 to $999	1,105	1,020	215	437	694	25.0
$1,000 to $2,499	1,881	1,549	347	689	1,422	31.8
$2,500 and over	4,011	2,597	613	1,174	3,550	42.3

The absence of income in the first group is due in part to the inability of the enumerators to secure complete reports for certain farms where changes in proprietorship had occurred shortly prior to the date of enumeration. Frequently the persons in charge of such farms, June 1, 1900, could not give definite information concerning the products of the preceding year. The same statement is also true of some of the farms with reported incomes of less than $100. To this extent the reports fall short of giving a complete exhibit of farm income in 1899. Some of the farms reporting little or no income are doubtless summer homes or country estates held for pleasure and not for profit.

LIVE STOCK.

At the request of the various live-stock associations of the country, a new classification of domestic animals was adopted for the census of 1900. The age grouping for neat cattle was determined by their present and prospective relations to the dairy industry and the supply of meat products. Horses and mules are classified by age, and neat cattle and sheep by age and sex. The new classification permits a very close comparison with the figures published in previous census reports.

Table 14 presents a summary of live-stock statistics.

TABLE 14.—NUMBER OF DOMESTIC ANIMALS, FOWLS, AND BEES ON FARMS, JUNE 1, 1900, WITH TOTAL AND AVERAGE VALUES, AND NUMBER OF DOMESTIC ANIMALS NOT ON FARMS.

LIVE STOCK.	Age in years.	ON FARMS.			NOT ON FARMS.
		Number.	Value.	Average value.	Number.
Calves	Under 1	61,794	$411,104	$6.65	1,522
Steers	1 and under 2	15,508	218,758	14.11	396
Steers	2 and under 3	11,156	266,452	23.88	174
Steers	3 and over	11,442	582,828	50.94	168
Bulls	1 and over	6,995	152,984	21.87	82
Heifers	*1 and under 2*	*46,877*	*621,354*	*13.54*	*1,179*
Cows kept for milk	2 and over	178,592	5,060,048	29.15	11,956
Cows and heifers not kept for milk.	2 and over	12,483	272,017	21.79	146
Colts	Under 1	2,834	78,587	27.71	156
Horses	1 and under 2	3,955	201,548	50.96	165
Horses	2 and over	99,510	6,778,904	68.12	33,690
Mule colts	Under 1	92	2,675	29.08	8
Mules	1 and under 2	21	970	46.19	1
Mules	2 and over	240	15,885	66.19	41
Asses and burros	All ages	48	769	16.02	18
Lambs	Under 1	167,903	364,706	2.17	2,045
Sheep (ewes)	1 and over	240,717	709,720	2.95	4,820
Sheep (rams and wethers).	1 and over	11,496	42,057	3.66	228
Swine	All ages	79,018	516,015	6.53	9,545
Goats	All ages	279	1,091	3.91	36
Fowls:[1]					
Chickens[2]		1,564,853	756,153		
Turkeys		6,437			
Geese		4,566			
Ducks		9,708			
Bees (swarms of)		10,857	51,459	4.74	
Value of all live stock			17,106,034		

[1] The number reported is of fowls over 3 months old. The value is for all, old and young.
[2] Including Guinea fowls.

The total value of all live stock on farms was $17,106,034. Of this amount 41.3 per cent represents the value of horses; 29.6 per cent, that of dairy cows; 14.8 per cent, that of other neat cattle; 6.5 per cent, that of sheep; 4.4 per cent, that of poultry; 3.0 per cent, that of swine; and 0.4 per cent, that of all other live stock.

As in the other New England states, the value of steers 3 years old and over is comparatively high, this class including the valuable working oxen still used in some parts of the state. The number of these animals is rapidly decreasing. In 1850, 83,893 working oxen were reported; in 1860, 79,792; in 1870, 60,530; in 1880, 43,049; in 1890, 33,105. In 1900 the total number of steers over 2 years old was only 22,598, and it is probable that many of these were not working oxen.

No reports were received concerning the value of live stock not on farms, but it is probable that such animals have higher average values than those on farms. Allowing the same averages, however, the total value of all live stock in the state, exclusive of the poultry and bees not on farms, is approximately $19,897,000.

CHANGES IN LIVE STOCK ON FARMS.

The following table shows the changes since 1850 in the number of the most important domestic animals.

TABLE 15.—NUMBER OF SPECIFIED DOMESTIC ANIMALS ON FARMS: 1850 TO 1900.

YEAR.	Dairy cows.	Other neat cattle.	Horses.	Mules and asses.	Sheep.[1]	Swine.
1900	173,592	165,255	106,299	401	252,213	79,018
1890	157,278	141,832	109,156	278	370,484	91,297
1880	160,845	183,576	87,848	298	565,918	74,369
1870	139,259	203,802	71,514	336	434,666	45,760
1860	147,314	229,619	60,637	104	452,472	54,783
1850	133,556	209,783	41,721	55	451,577	54,598

[1] Lambs not included.

With the exception of the decade 1860–1870 the number of dairy cows has increased steadily for fifty years, the gain in the last decade having been 16,314, or 10.4 per cent. The number of "other neat cattle" given for 1900 includes 61,794 calves. It is uncertain whether calves were included with "neat cattle" in census reports prior to 1900. If not, their number in that year should be deducted when making comparisons with reports for previous years, in which case a decrease would be shown for the last decade in the number of "other neat cattle" corresponding with that shown for each succeeding decade since 1860.

The number of horses more than doubled from 1850 to 1890, but in the last decade there was a small decrease. The number of sheep remained nearly constant until 1880, since which date there has been a rapid decrease, amounting in the last ten years to 31.9 per cent. Between 1850 and 1890 the number of swine fluctuated slightly with a general upward tendency, but in the last decade there was a decrease of 13.4 per cent.

In comparing the poultry report for 1900 (see Table 14) with that for 1890, it should be borne in mind that in 1900 the enumerators were instructed not to report fowls less than 3 months old, while in 1890 no such limitation was made. This fact explains, in part, the decrease shown in the number of all kinds of fowls except chickens, and the smallness of the increase shown for these fowls. Compared with the figures for 1890, the present census shows decreases in the number of fowls as follows: Ducks, 64.0 per cent; turkeys, 57.8 per cent; and geese, 37.2 per cent. The number of chickens increased 10.9 per cent.

ANIMAL PRODUCTS.

Table 16 is a summarized exhibit of the animal products of agriculture.

TABLE 16.—QUANTITIES AND VALUES OF SPECIFIED ANIMAL PRODUCTS, AND VALUES OF POULTRY RAISED, ANIMALS SOLD, AND ANIMALS SLAUGHTERED ON FARMS IN 1899.

PRODUCTS.	Unit of measure.	Quantity.	Value.
Wool	Pounds	1,478,018	$318,585
Mohair and goat hair	Pounds	105	21
Milk	Gallons	[1] 99,586,188	8,182,344
Butter	Pounds	16,174,173	
Cheese	Pounds	425,102	
Eggs	Dozens	13,304,151	2,038,225
Poultry			956,468
Honey	Pounds	200,080	34,461
Wax	Pounds	6,570	
Animals sold			2,371,717
Animals slaughtered			1,258,594
Total			15,159,415

[1] Includes all milk produced.

The animal products of the state in 1899 were valued at $15,159,415, or 40.8 per cent of the value of all farm products and 55.6 per cent of the gross farm income. Of the above amount, 54.0 per cent represents the value of dairy products; 23.9 per cent, that of animals sold and of animals slaughtered on farms; 19.8 per cent, that of poultry and eggs; and 2.3 per cent, that of wool, mohair, honey, and wax.

DAIRY PRODUCE.

The steady growth of population in Maine and the increasing popularity of its summer resorts have largely increased the demand for dairy produce in this state. The present importance of this industry is shown by the fact that in 1899 the proprietors of 17,740 farms, or 29.9 per cent of the farms of the state, derived their principal income from dairy produce. The production of milk in 1899 was 41,616,397 gallons greater than in 1889, a gain of 71.8 per cent. The census of 1890 secured no report of the quantity of milk sold, but since 1880 there has been a gain of 329.5 per cent. In every county except Androscoggin, the quantity of milk sold in 1899 was more than three times as great as that sold in 1879.

Of the $8,182,344 given in Table 16 as the value of all dairy products in 1899, $2,561,239, or 31.3 per cent, represents the value of such products consumed on the farms of the producers, and $5,621,105, or 68.7 per cent, the amount realized from sales. Of the latter sum, $2,278,122 was derived from the sale of 15,979,003 gallons of milk; $2,272,437, from 11,030,091 pounds of butter; $1,028,752, from 2,810,733 gallons of cream; and $41,794, from 365,936 pounds of cheese.

While the quantity of butter made on farms has increased since 1890, that of cheese has rapidly decreased, the production of 1899 being little more than one-half that of 1889 and less than one-fifth that of 1849. The transfer of cheese making from the farm to the factory explains the decrease.

POULTRY AND EGGS.

Of the $2,993,693 given as the total value of the products of the poultry industry in 1899, 68.1 per cent represents the value of eggs, and 31.9 per cent that of poultry raised. The number of dozens of eggs increased 41.8 per cent in the last decade.

WOOL.

The northern counties report a larger total production of wool than the southern counties, but show a much smaller number of fleeces per square mile. The production of wool increased steadily from 1850 until 1880, in which year 2,776,407 pounds were reported. Since that date there has been a steady decrease, amounting in the last decade to 20.7 per cent. The average weight of fleeces was 5.3 pounds in 1890 and 5.7 pounds in 1900.

HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS.

Table 17 presents, for the leading groups of farms, the number of farms reporting horses and dairy cows, the total number of these animals, and the average number per farm. In computing the averages presented, only those farms which report the kind of stock under consideration are included.

TABLE 17.—HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS, JUNE 1, 1900.

CLASSES.	HORSES.			DAIRY COWS.		
	Farms reporting.	Number.	Average per farm.	Farms reporting.	Number.	Average per farm.
Total	49,576	106,299	2.1	49,161	173,592	3.5
White farmers	49,554	106,267	2.1	49,148	173,563	3.5
Colored farmers	22	32	1.5	13	29	2.2
Owners[1]	46,996	100,274	2.1	46,689	164,753	3.5
Managers	578	2,007	3.5	554	3,020	5.5
Cash tenants	1,457	2,884	2.0	1,361	4,083	3.0
Share tenants	545	1,134	2.1	557	1,736	3.1
Under 20 acres	3,262	4,537	1.4	2,921	4,520	1.5
20 to 99 acres	22,217	38,939	1.8	22,584	59,365	2.6
100 to 174 acres	15,723	36,076	2.3	15,459	62,529	4.0
175 to 259 acres	5,367	15,209	2.8	5,250	28,386	5.4
260 acres and over	3,007	11,538	3.8	2,947	18,792	6.4
Hay and grain	3,272	7,142	2.2	2,246	4,761	2.1
Vegetable	4,809	13,091	2.7	4,108	11,463	2.8
Fruit	370	650	1.8	242	648	2.7
Live stock	13,352	27,098	2.0	13,100	39,671	3.0
Dairy	15,982	33,199	2.1	17,740	83,293	4.7
Miscellaneous[2]	11,791	25,119	2.1	11,725	33,756	2.9

[1] Including "part owners" and "owners and tenants."
[2] Including florists' establishments and nurseries, and 1 tobacco farm.

CROPS.

The following table gives the statistics of the principal crops grown in 1899.

TABLE 18.—ACREAGES, QUANTITIES, AND VALUES OF THE PRINCIPAL FARM CROPS IN 1899.

CROPS.	Acres.	Unit of measure.	Quantity.	Value.
Corn	16,856	Bushels	645,040	$326,824
Wheat	6,667	Bushels	116,720	107,396
Oats	108,661	Bushels	3,799,435	1,374,573
Barley	8,809	Bushels	252,850	137,448
Rye	611	Bushels	9,290	6,126
Buckwheat	25,292	Bushels	468,320	185,836
Flaxseed	2	Bushels	16	22
Clover seed		Bushels	519	2,956
Grass seed		Bushels	417	854
Hay and forage	1,270,254	Tons	1,136,774	10,641,546
Tobacco	(1)	Pounds	150	14
Hops	(1)	Pounds	60	6
Peanuts	1	Bushels	22	46
Dry beans	10,252	Bushels	137,290	290,885
Dry pease	2,300	Bushels	35,991	44,618
Potatoes	71,765	Bushels	9,813,748	3,711,999
Onions	168	Bushels	44,489	38,160
Chicory	29	Pounds	64,820	217
Miscellaneous vegetables	19,844			1,207,075
Maple sugar		Pounds	5,500	643
Maple sirup		Gallons	16,024	15,280
Small fruits	1,036			157,679
Grapes	[2] 51	Centals	2,758	[3] 7,584
Orchard fruits	[2] 117,322	Bushels	1,438,919	[4] 833,634
Nuts				593
Forest products				2,652,249
Flowers and plants	71			155,131
Seeds	6			3,082
Nursery products	106			46,207
Miscellaneous				5,371
Total	1,660,103			21,954,054

[1] Less than 1 acre.
[2] Estimated from number of vines or trees.
[3] Including value of raisins, wine, etc.
[4] Including value of cider, vinegar, etc.

Of the total value of crops, hay and forage contributed 48.5 per cent; vegetables, including potatoes and onions, 22.6 per cent; forest products, 12.1 per cent; cereals, 9.7 per cent; fruits and nuts, 4.5 per cent; and all other products, 2.6 per cent.

Owing to a more favorable season, the yield per acre of most crops in 1899 was greater than in 1889. The season of 1899 was especially favorable to the growing of potatoes, the yield per acre having been 136.7 bushels while in 1889 it was but 105.8 bushels. The average yield per acre of hay and forage was 0.9 ton, and the average values, $9.36 per ton and $8.38 per acre. The acreage devoted to hay and forage was 76.5 per cent of the total area in crops, but yielded only 48.5 per cent of the total receipts. The average values per acre of other crops were as follows: Flowers and plants, $2,185; nursery products, $436; onions, $227; small fruits, $152; grapes, $149; miscellaneous vegetables, $61; potatoes, $52; cereals, $13; and orchard fruits, $7. The crops yielding the highest returns per acre were grown upon very highly improved land. Their production required a relatively great amount of labor and large expenditures for fertilizers.

CEREALS.

Table 19 is an exhibit of the changes in cereal production since 1849.

TABLE 19.—ACREAGE AND PRODUCTION OF CEREALS: 1849 TO 1899.

PART 1.—ACREAGE.

YEAR.[1]	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1899	8,809	25,292	16,856	108,661	611	6,667
1889	11,972	22,395	10,891	121,612	791	4,116
1879	11,106	20,135	30,997	78,785	2,161	43,829

[1] No statistics of acreage were secured prior to 1879.

PART 2.—BUSHELS PRODUCED.

1899	252,850	468,320	645,040	3,799,435	9,290	116,720
1889	286,262	466,411	380,662	3,668,909	6,664	79,826
1879	242,185	382,701	960,633	2,265,575	26,398	665,714
1869	653,816	466,635	1,089,888	2,351,354	34,115	278,793
1859	802,108	239,519	1,546,071	2,988,939	123,287	233,876
1849	151,731	104,523	1,750,056	2,181,037	102,916	296,259

The development of agriculture in the southern part of Maine during the past fifty years has been attended by changes similar to those noted in other New England states, namely, a steady growth in the importance of dairying and market gardening, and a marked decrease in the acreage devoted to cereals.

In the northern part of the state, where agriculture has been more recently developed, very different conditions prevail. The distance from city markets, while retarding the development of special branches of husbandry, has favored general farming, and the production of such cereals as are adapted to the soil and climate has been steadily and rapidly increasing for several decades. This is especially true in Aroostook county, where the total area in cereals increased 37,116 acres, or 82.6 per cent, from 1879 to 1899, while for the remainder of the state there was a decrease of 57,233 acres, or 40.3 per cent. In 1880 Aroostook county reported 24.0 per cent of the total acreage in cereals; in 1890, 33.5 per cent; and in 1900, 49.2 per cent, or approximately one-half.

Of the total area in cereals in 1899, 65.1 per cent was devoted to oats; 15.1 per cent, to buckwheat; 10.1 per cent, to corn; 5.3 per cent, to barley; 4.0 per cent, to wheat; and 0.4 per cent, to rye.

Most of the barley is raised in the southern counties, and the total acreage of this grain decreased 26.4 per cent in the last decade. The northern counties of Aroostook, Penobscot, and Piscataquis show a gain of 48.7 per cent, while all others show decreases.

In 1900, 83.7 per cent of the total area devoted to buckwheat was in Aroostook county, and 12.7 per cent in the other 3 northern counties. The gain of 12.9 per cent in the last ten years in the acreage of this grain has resulted entirely from the increases in these 4 counties.

The northern counties report very little corn, Aroostook county only 27 acres, but in all others there were substantial increases in the last decade, amounting to 54.8 per cent for the state.

Aroostook county reports 48.4 per cent of the total acreage in oats, and Penobscot and Somerset counties, 22.7 per cent. For the last decade Aroostook shows a gain of 16,885 acres, or 47.3 per cent, but all other counties show decreases, resulting in a net loss for the state of 10.6 per cent.

Very little attention is given to rye. Aroostook county reports 58.6 per cent of the product and shows a gain in the last decade of 102.3 per cent. Oxford county, which reported 54.9 per cent of the total acreage in 1890, reports but 5.4 per cent in 1900.

The area in wheat in Aroostook county increased from 1,910 acres in 1889 to 5,759 acres in 1899. For the balance of the state there was a decrease from 2,206 to 908 acres. In 1889 Aroostook county had 46.4 per cent of the acreage devoted to this grain, and in 1899, 86.4 per cent. The gain for the state was 62.0 per cent.

The acreage given for cereals does not include 14,212 acres of grain cut green for hay, nor 12,494 acres devoted to corn, nonsaccharine sorghum, and similar crops, grown for forage or ensilage.

ORCHARD FRUITS.

The changes in orchard fruits since 1890 are shown in the following table:

TABLE 20.—ORCHARD TREES AND FRUITS: 1890 AND 1900.

FRUITS.	NUMBER OF TREES.		BUSHELS OF FRUIT.	
	1900.	1890.	1899.	1889.
Apples	4,184,781	3,003,109	1,421,773	3,071,471
Apricots	84	186		3
Cherries	11,597	10,686	1,550	364
Peaches	9,592	1,607	1,895	217
Pears	39,902	34,331	11,200	13,141
Plums and prunes	29,001	14,394	2,282	1,291

The value of the orchard products of 1899 was $833,634. The counties whose orchard products were valued at over $50,000 were: York, $150,297; Cumberland, $94,087; Kennebec, $80,991; Penobscot, $70,486; Androscoggin, $66,183; Oxford, $65,925; and Waldo, $63,826.

In 1890, 98.0 per cent, and in 1900, 97.9 per cent of all fruit trees in the state were apple trees. All counties report increases since 1890 in the number of trees, the rate of gain for the state being 39.3 per cent. The greatest relative gain was in Aroostook county. In 1899 there were manufactured on farms 11,906 barrels of cider, 2,161 barrels of vinegar, and 26,170 pounds of dried fruit.

Very little attention is given to apricots. The number of cherry trees has increased slightly, but many counties show decreases. Peach and nectarine trees are few in number, though a large percentage of gain is reported in all parts of the state. A large percentage of the pear trees reported are in the southwestern counties. The gain of 16.2 per cent for the state is, however, quite generally distributed, the only marked decreases being in Cumberland and Franklin counties. Plum and prune

trees have more than doubled in number, the only counties reporting losses being Androscoggin, Franklin, and Oxford. In addition to the trees given in Table 20, unclassified fruit trees to the number of 3,244 are reported, with a yield of 219 bushels of fruit.

The quantity of fruit produced in any year is determined largely by the nature of the season. Consequently, comparisons between the crop of 1889 and that of 1899 have little significance, as in the latter year there was only about one-third of a crop of the most important fruits.

SMALL FRUITS.

The total area used in the cultivation of small fruits in 1899 was 1,036 acres, distributed among 4,577 farms. The value of the fruits grown was $157,679, an average of $34.45 per farm. Of the total area, 512 acres, or 49.4 per cent, were devoted to strawberries, the total production of which was 1,066,860 quarts, grown principally in the southern counties. The acreage and production of other berries were as follows: Blackberries and dewberries, 151 acres and 164,300 quarts; cranberries, 90 acres and 1,554 bushels; currants, 32 acres and 37,080 quarts; gooseberries, 30 acres and 41,230 quarts; raspberries and Logan berries, 131 acres and 214,700 quarts; and other berries, 90 acres and 102,040 quarts.

VEGETABLES.

The value of all vegetables grown in the state in 1899, including potatoes and onions, was $4,957,234. Of this amount, 74.9 per cent represents the value of potatoes. This important crop was reported by 49,548 farmers, or 83.6 per cent of the total number in the state. It is relatively of greatest importance in Aroostook county, where the natural fertility of the soil and the presence of a number of starch factories render the crop an especially profitable one. In 1890 this county reported 33.5 per cent of the total acreage, and in 1900, 58.5 per cent. The average area per farm devoted to potatoes in 1899 was 6.6 acres for Aroostook county, and but 0.7 acre for the remainder of the state. The acreage of potatoes in Aroostook county in 1899 constituted 10.8 per cent of the total improved land; the average yield per acre was 154.1 bushels, while for the rest of the state it was but 112.3 bushels. Aside from the land devoted to potatoes and onions, 19,844 acres were used in the growing of miscellaneous vegetables. Of this area the products of 9,541 acres were not reported in detail. Of the remaining 10,303 acres, concerning which detailed reports were received, 8,252 acres were devoted to sweet corn; 594, to cabbages; 405, to turnips; 223, to cucumbers; 165, to green pease; 162, to tomatoes; and 502 to other vegetables.

FLORICULTURE.

The proprietors of 65 of the 93 establishments where flowers are grown for the market make commercial floriculture their principal business. They have invested a capital of $293,255, of which $123,375 represents the value of land; $151,940, that of buildings; $13,610, that of implements; and $4,330, that of live stock. In 1899 they raised flowers and plants valued at $134,232 and other products valued at $8,910, making a total product of $143,142 or $229.03 for each of the 625 acres used. During the same year they expended $2,830 for fertilizers and $39,515 for labor.

These 65 florists' establishments have 653,861 square feet of glass surface, equivalent to 490,396 square feet of land under glass. In addition, 131 farms have 693,714 square feet of land under glass, making the total for the state, 1,184,110 square feet.

LABOR AND FERTILIZERS.

The total expenditure for labor on farms in 1899, including the value of board furnished, was $2,667,260, an average of $45 per farm. The average was highest on the most intensively cultivated farms, being $789 for nurseries, $608 for florists' establishments, $83 for market gardens, $47 for dairy farms, $45 for fruit farms, $35 for live-stock farms, and $31 for hay and grain farms. Managers expended, on an average, $166; owners, $43; share tenants, $35; and cash tenants, $34 per farm. White farmers expended $45 per farm, and colored farmers $13.

Fertilizers purchased in 1899 cost $819,680, an average of $14 per farm, and an increase since 1890 of 79.6 per cent. The average expenditure was greatest for nurseries and least for hay and grain farms, the amounts being $152 and $6, respectively. For vegetable farms the average was $52; for florists' establishments, $44; for fruit farms, $10; for dairy farms, $11; and for live-stock farms, $9.

Twelfth Census of the United States.

CENSUS BULLETIN.

No. 140. WASHINGTON, D. C. February 20, 1902.

MANUFACTURES.

SOUTH CAROLINA.

Hon. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I transmit herewith, for publication in bulletin form, the statistics of manufacturing and mechanical industries for the state of South Carolina for the census year 1900, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that "The schedules of inquiries relating to the products of manufacturing and mechanical establishments shall embrace the name and location of each establishment; character of organization, whether individual, cooperative, or other form; date of commencement of operations; character of business or kind of goods manufactured; amount of capital invested; number of proprietors, firm members, copartners, or officers, and the amount of their salaries; number of employees, and the amount of their wages; quantity and cost of materials used in manufactures; amount of miscellaneous expenses; quantity and value of products; time in operation during the census year; character and quantity of power used; and character and number of machines employed."

In each of the above particulars the requirements of the law have been observed, but certain of the data thus elicited are reserved for publication in the final volumes.

There were 12 cities and towns in the state withdrawn from the enumerators and their manufacturing statistics collected by special agents, in accordance with the further provision of section 7 of the census act. Wherever the phrase "urban manufactures" is used in this bulletin, it applies only to those cities and towns which were withdrawn from the enumerators and committed to special agents, and only to manufacturing establishments within the corporate limits of such places.

Two cities in South Carolina contain a population exceeding 20,000 each: Charleston and Columbia. The manufacturing statistics of these 2 cities are presented by specified industries, and the statistics of Charleston are presented in comparison with the returns of the Tenth and Eleventh censuses. The statistics of Columbia were not shown separately in 1880 or 1890, and comparisons with those years are, therefore, not possible in this case.

Mr. Ellison A. Smyth, of Pelzer, S. C., rendered valuable assistance in the preparation of the text for the accompanying report.

The statistics of South Carolina are presented in 9 tables: Table 1 showing comparative figures for the state at the several censuses; Table 2 showing all the industries of the state divided between hand trades and the manufactures proper, and also the statistics of governmental establishments, educational and eleemosynary institutions, and establishments with a product of less than $500, which three latter classes were not reported at previous censuses; Table 3 showing the statistics of the 8 leading industries of the state for 1890 and 1900; Table 4 showing the totals for the city of Charleston at the censuses of 1880, 1890, and 1900; Table 5 showing the urban manufactures of the state in comparison with the totals for the entire state and the state exclusive of the cities and towns withdrawn from the enumerators; Table 6 showing the statistics for the state by counties; Table 7 showing the statistics for the state by specified industries; Table 8 showing the statistics for the cities of Charleston and Columbia by specified industries; and Table 9 showing the totals for all industries in each of the cities and towns withdrawn from the enumerators (exclusive of those shown in Table 8).

Table 1 shows the growth of manufactures in South Carolina for the half century which terminates with the Twelfth Census. The manufacturing statistics of the censuses prior to 1850 were too imperfect and fragmentary in character to make it proper to reproduce them in such a table as a measure of industrial growth in the first half of the century. Owing to changes in the method of taking the census, comparisons between the earlier and later decades, represented in Table 1, should be drawn only in the most general way. Nevertheless, the rate of growth in South Carolina manufactures may be fairly inferred from the figures given.

In drafting the schedules of inquiry for the census of 1900 care was taken to preserve the basis of comparison with prior censuses. Comparison may be made safely with respect to all the items of inquiry except those relating to capital, salaried officials, clerks, etc., and their salaries,

the average number of employees, and the total amount of wages paid. Live capital, that is, cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries, was first called for at the census of 1890. No definite attempt was made, prior to the census of 1890, to secure a return of live capital invested.

Changes were made in the inquiries relating to employees and wages in order to eliminate defects found to exist on the form of inquiry adopted in 1890. At the census of 1890 the average number of persons employed during the entire year was called for, and also the average number employed at stated weekly rates of pay, and the average number was computed for the actual time the establishments were reported as being in operation. At the census of 1900 the greatest and least numbers of employees were reported, and also the average number employed during each month of the year. The average number of wage-earners (men, women, and children) employed during the entire year was ascertained by using 12, the number of calendar months, as a divisor into the total of the average numbers reported for each month. This difference in the method of ascertaining the average number of wage-earners during the entire year may have resulted in a variation in the number, and should be considered in making comparisons.

At the census of 1890 the number and salaries of proprietors and firm members actively engaged in the business or in supervision were reported, combined with clerks and other officials. In cases where proprietors and firm members were reported without salaries, the amount that would ordinarily be paid for similar services was estimated. At the census of 1900 only the number of proprietors and firm members actively engaged in the industry or in supervision was ascertained, and no salaries were reported for this class. It is therefore impossible to compare the number and salaries of salaried officials of any character for the two censuses.

Furthermore, the schedules for 1890 included in the wage-earning class, overseers, foremen, and superintendents (not general superintendents or managers), while the census of 1900 separates from the wage-earning class such salaried employees as general superintendents, clerks, and salesmen. It is possible and probable that this change in the form of the question has resulted in eliminating from the wage-earners, as reported by the present census, many high-salaried employees included in that group for the census of 1890.

In some instances, the number of proprietors and firm members, shown in the accompanying tables, falls short of the number of establishments reported. This is accounted for by the fact that no proprietors or firm members are reported for corporations or cooperative establishments. The number of salaried officials, clerks, etc., is the greatest number reported employed at any one time during the year. For the cotton-ginning industry this number may appear excessive as compared with the amount of salaries paid; but allowance should be made for the fact that a considerable number of clerks are employed for only a part of the year; consequently the amount they receive would be small if reckoned as an annual salary.

The reports show a capital of $67,356,465 invested in manufactures and mechanical industries in the 3,762 establishments reporting for the state of South Carolina. This sum represents the value of land, buildings, machinery, tools, and implements, and the live capital utilized, but does not include the capital stock of any of the manufacturing corporations of the state. The value of the products is returned at $58,748,731, to produce which involved an outlay of $1,327,052 for salaries of officials, clerks, etc.; $9,455,900 for wages; $3,111,587 for miscellaneous expenses, including rent, taxes, etc.; and $34,027,795 for materials used, mill supplies, freight, and fuel. It is not to be assumed, however, that the difference between the aggregate of these sums and the value of the products is, in any sense, indicative of the profits in the manufacture of the products during the census year. The census schedule takes no cognizance of the cost of selling manufactured articles, or of interest on capital invested, or of the mercantile losses incurred in the business, or of depreciation in plant. The value of the product given is the value as obtained or fixed at the shop or factory. This statement is necessary in order to avoid erroneous conclusions from the figures presented.

The value of products for the state of South Carolina, $58,748,731, is the gross value, and not the net or true value. The difference between these two should be carefully noted. The gross value is found by adding the value of products in the separate establishments. But the finished product of one establishment is often the raw material for another. In such cases the value of the former reappears in the latter, and thus the original cost of certain materials may be included several times in the gross value. The net or true value is found by subtracting from the gross value the value of all materials purchased in a partly manufactured form. In this way the duplications in the gross value are eliminated.

At the census of 1890 the schedule was so framed that it was impossible to find the net or true value. In the present census the schedule asked for the value of the materials in two classes, those purchased in the crude state and those purchased in the partly manufactured form. From the answers to these questions the net or true value of products may be computed. Thus, for South Carolina, the gross value of products for 1900 was $58,748,731. The value of materials purchased in a partly manufactured form was $10,573,366. The difference, $48,175,365, is the net or true value of products, and represents the increase in the value of raw materials resulting from the various processes of manufacture.

Very respectfully,

S. N. D. North

Chief Statistician for Manufactures.

SOUTH CAROLINA.

Table 1 shows the manufacturing and mechanical industries of the state of South Carolina as returned at the censuses of 1850 to 1900, inclusive, with the percentages of increase for each decade. This table also presents the average number of wage-earners employed by the manufacturing establishments, in comparison with the total population of the state, and the value of the land and buildings owned and reported by manufacturers as capital, in comparison with the assessed value of all real estate and improvements.

TABLE 1.—COMPARATIVE SUMMARY, 1850 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.						PER CENT OF INCREASE.				
	1900	1890	1880	1870	1860	1850	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870	1850 to 1860
Number of establishments	3,762	2,382	2,078	1,584	1,230	1,430	57.9	14.6	31.2	28.8	[1]14.0
Capital	$67,356,465	$29,276,261	$11,205,894	$5,400,418	$6,931,756	$6,053,265	130.1	161.3	107.5	[1]22.1	14.5
Salaried officials, clerks, etc., number	1,525	21,914	(3)	(3)	(3)	(3)	[1]20.3				
Salaries	$1,327,052	[2]$1,116,244	(3)	(3)	(3)	(3)	18.9				
Wage-earners, average number	48,135	22,748	15,828	8,141	6,994	7,066	111.6	43.7	94.4	16.4	[1]1.0
Total wages	$9,455,900	$5,474,739	$2,836,289	$1,543,715	$1,380,027	$1,127,712	72.7	93.0	83.7	11.9	22.4
Men, 16 years and over	29,823	16,664	13,687	7,099	6,096	5,992	79.0	21.8	92.8	16.5	1.7
Wages	$6,921,355	$4,516,437	(3)	(3)	(3)	(3)	53.2				
Women, 16 years and over	9,752	3,775	1,023	578	898	1,074	158.3	269.0	77.0	[1]35.6	[1]16.4
Wages	$1,685,139	$736,696	(3)	(3)	(3)	(3)	128.7				
Children, under 16 years	8,560	2,309	1,118	464	(3)	(3)	270.7	106.5	140.9		
Wages	$849,406	$221,606	(3)	(3)	(3)	(3)	283.3				
Miscellaneous expenses	$3,111,587	$1,792,386	(4)	(4)	(4)	(4)	73.6				
Cost of materials used	$34,027,795	$18,873,666	$9,885,538	$5,855,736	$5,198,881	$2,787,534	80.3	90.9	68.8	12.6	86.5
Value of products, including custom work and repairing	$58,748,781	$31,926,681	$16,738,008	$9,858,981	$8,615,195	$7,045,477	84.0	90.7	69.8	14.4	22.3
Total population	1,340,316	1,151,149	995,577	705,606	703,708	668,507	16.4	15.6	41.1	0.3	5.3
Wage-earners engaged in manufactures	48,135	22,748	15,828	8,141	6,994	7,066	111.6	43.7	94.4	16.4	[1]1.0
Per cent of total population	3.6	2.0	1.6	1.2	1.0	1.1					
Assessed value of real estate	[5]$102,137,777	$90,042,723	$77,461,670	$119,494,675	$129,772,681	$105,737,492	13.4	16.2	[1]35.2	[1]7.9	22.7
Value of land and buildings invested in manufactures[6]	$15,316,413	$8,573,156	(3)	(3)	(3)	(3)	78.7				
Per cent of assessed value	15.0	9.5									

[1] Decrease.
[2] Includes proprietors and firm members, with their salaries; number only reported in 1900. (See Table 7.)
[3] Not reported separately.
[4] Not reported.
[5] As given in the Report of the Comptroller-General of the State of South Carolina, for the year 1900, page 145.
[6] Does not include value of rented property.

Although South Carolina is an agricultural state, Table 1 shows that there has been a considerable growth in its manufacturing and mechanical industries during the half century. The population during these years increased from 668,507 to 1,340,316, or 100.5 per cent, while the average number of wage-earners employed in manufacturing establishments increased from 7,066 to 48,135, or 581.2 per cent, embracing, in 1900, 3.6 per cent of the entire population, compared with 1.1 per cent in 1850. Probably the best indication of the importance of the wage-earning class is afforded by the greatest number employed at any one time during the year. In 1900 this was 62,908, or 4.7 per cent of the total population of the state. Measured by the value of products, the greatest percentage of increase, 90.7, was during the decade ending with 1890, although the greatest absolute increase was between the years 1890 and 1900.

South Carolina produces the raw material needed for several industries, and possesses excellent facilities for marketing products. Sailing and steam vessels, with a total tonnage of 86,757, engaged in foreign trade, cleared from the harbors of Charleston and Beaufort during the census year.[1] The Savannah River is navigable for 158 miles; the Santee, for its entire length; the Pedee, for 120 miles; the Congaree, nearly to the city of Columbia; and the Wateree, to Camden. The value placed upon water communication is indicated by the expenditure by the state, between the years 1816 and 1826, of $1,712,626 upon internal improvements, a large part of which amount was appropriated for building canals around the rapids of 5 of its rivers.[2] Since 1878, $6,063,692 has been expended by the United States Government upon 7 rivers and 3 harbors, and further improvements are contemplated.[3] The abundant waterpower, chiefly in the Piedmont region, in 1880 estimated to exceed 300,000 horsepower,[4] was neglected for years, but has been greatly developed during the past decade. In three instances electricity generated by waterpower is successfully transmitted to points where it has been found advantageous to locate mills. The first extensive use of electrically transmitted power in cotton manufacturing in the United States was made, it is claimed, at Columbia, where 1,840 horsepower is now developed, and the second, with 3,000 horsepower, at

[1] Treasury Department: Commerce and Navigation of the United States, 1900, Vol. I, page 1183.

[2] South Carolina, Resources, Population, Institutions, and Industries, by Harry Hammond, page 196.

[3] War Department: Report of the Chief of Engineers, 1900, Part 3, pages 1841 to 1876.

[4] South Carolina, Resources, Population, Institutions, and Industries, page 206.

Pelzer.[1] Coal is not mined in South Carolina, but the development of the Alabama fields in recent years[2] has benefited manufacturers dependent upon steam for power.

Table 1 shows that the number of children employed in manufacturing increased 270.7 per cent during the last decade, while the number of men increased only 79 per cent. There is no statute fixing the minimum age at which children may work in the mills, and, in some instances, such employees are under 12 years of age.[3] Many of the mills, however, have reading rooms and libraries for the use of their employees,[4] and nearly all contribute regularly to the support of the local schools. Answers from 65 cotton mills in 1901 show that they had invested $86,164 in school buildings and equipment, for the support of which they paid $44,802 in taxes annually, and $27,512 in special contributions, and the average school term in these localities was 8.86 months, or twice that in the other portions of the state.[5] The importance of technical education is much appreciated, and an agricultural and industrial college for boys and an industrial school for girls have been established during the last decade.

Table 2 divides the industries of the state between the hand trades and the manufactures proper. This table also gives the statistics for governmental establishments, educational and eleemosynary institutions, and establishments with a product of less than $500; these were not reported at previous censuses, and therefore are omitted from the other tables and their use confined to Table 2.

[1] Transactions of the New England Cotton Manufacturers' Association, 1895, page 236.

[2] United States Geological Survey: Mineral Resources, 1899; Metallic Products, Coal and Coke, page 358.

[3] Report of the Industrial Commission, 1900, Vol. VII, pages 484, 491, and 492.

[4] Ibid., page 482.

[5] Report of a Committee of Textile Manufacturers of South Carolina to the Legislature, September 10, 1901.

TABLE 2.—SUMMARY FOR ALL ESTABLISHMENTS.

CLASSES.	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS.		Miscellaneous expenses.	COST OF MATERIALS USED.				Value of products, including custom work and repairing.
				Average number.	Total wages.		Total.	Purchased in raw state.	Purchased in partially manufactured form.	Fuel, freight, etc.	
Total	7,930	$70,056,299	8,625	55,117	$9,633,651	$3,151,237	$34,284,482	$21,891,507	$10,763,983	$1,628,992	$59,682,110
Hand trades[1]	785	840,607	877	1,597	465,604	104,886	1,081,801	172	1,049,738	31,891	2,323,574
Governmental establishments	2	901,603	--------	107	48,467	----------	27,867	600	24,198	3,069	89,311
Educational and eleemosynary institutions	3	13,800	1	7	3,140	381	15,598	1,490	12,189	1,919	23,627
Establishments with a product of less than $500	4,163	1,784,431	4,536	6,868	126,144	39,269	213,222	57,538	154,230	1,454	820,441
All other establishments	2,977	66,515,858	3,211	46,538	8,990,296	3,006,701	32,945,994	21,831,707	9,523,628	1,590,659	56,425,157

[1] Includes bicycle and tricycle repairing, 43; blacksmithing and wheelwrighting, 316; boots and shoes, custom work and repairing, 81; carpentering, 40; clothing, men's, custom work and repairing, 43; clothing, women's, dressmaking, 36; dyeing and cleaning, 6; furniture, cabinetmaking, repairing, and upholstering, 25; lock and gun smithing, 13; masonry, brick and stone, 2; millinery, custom work, 79; painting, house, sign, etc., 17; plumbing, and gas and steam fitting, 16; sewing machine repairing, 2; watch, clock, and jewelry repairing, 66.

Of the 7,930 establishments of all classes shown in this table, 4,948, or 62.4 per cent, were small shops included in the groups of "hand trades" and "establishments with a product of less than $500." The value of the products of these establishments, consisting principally of the sums received for custom work and repairing, amounted to $3,144,015, or only 5.3 per cent of the total value of the products of the state.

In addition to the 7,930 active establishments in the state during the census year, with a capital of $70,056,299, shown in Table 2, there were 58 idle establishments, with a capital of $115,115, divided as follows:

INDUSTRIES.	Number of idle establishments.	Capital.	INDUSTRIES.	Number of idle establishments.	Capital.
Brick and tile	3	$9,220	Lumber and timber products	7	$19,485
Chemicals	1	41,500	Lumber, planing mill products, including sash, doors, and blinds	2	5,750
Cotton, ginning	34	18,478	All other industries	5	5,592
Flouring and grist mill products	5	10,090			
Hosiery and knit goods	1	5,000			

The 8 leading industries of the state in 1900, as shown by Table 3, embraced 1,640 establishments, or 43.6 per cent of the total number in the state; used a capital of $58,538,373, or 86.9 per cent of the total; gave employment to 39,066 wage-earners, or 81.2 per cent of the total number; and paid $6,965,935, or 73.7 per cent of the total wages. The value of their products was $48,041,940, or 81.8 per cent of the total. In the discussion of Table 3 these industries are ranked with reference to the value of their products.

TABLE 3.—COMPARATIVE SUMMARY OF EIGHT LEADING INDUSTRIES.

INDUSTRIES.	Year.	Number of establishments.	Capital.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
Total for selected industries for state	1900	1,640	$58,538,373	39,066	$6,965,935	$2,472,263	$29,272,774	$48,041,940
	1890	1,169	21,771,113	15,565	3,008,722	1,278,679	14,301,942	21,927,098
Increase, 1890 to 1900		471	36,767,260	23,501	3,957,213	1,193,581	14,970,832	26,114,842
Per cent of increase		40.3	168.9	151.0	131.5	93.3	104.7	119.1
Per cent of total of all industries in state	1900	43.6	86.9	81.2	73.7	79.5	86.0	81.8
	1890	49.1	74.4	68.4	55.0	71.3	75.8	68.7
Cotton goods	1900	80	39,258,946	30,201	5,066,840	1,507,824	17,263,882	29,723,919
	1890	34	11,141,833	8,071	1,510,494	528,208	6,819,320	9,800,798
Fertilizers	1900	22	10,505,043	1,772	479,449	675,589	3,107,710	4,882,506
	1890	20	5,920,218	1,102	386,385	490,385	2,754,407	4,417,658
Flouring and grist mill products	1900	556	652,553	281	70,458	15,742	1,958,658	2,347,790
	1890	512	984,791	630	86,416	31,854	1,726,896	2,083,126
Lumber and timber products	1900	729	5,187,727	4,585	897,899	107,445	2,629,805	5,207,184
	1890	352	1,848,155	2,590	420,588	93,717	996,289	2,146,750
Lumber, planing mill products, including sash, doors, and blinds	1900	53	412,128	495	146,539	20,042	621,831	1,016,828
	1890	27	350,471	370	132,017	16,606	396,242	711,838
Oil, cottonseed and cake	1900	50	1,959,872	734	143,932	127,462	2,362,837	3,103,425
	1890	17	565,372	416	56,354	59,136	740,605	927,772
Rice, cleaning and polishing	1900	18	293,385	112	25,243	9,862	856,790	973,132
	1890	6	354,400	143	37,700	26,767	190,800	315,056
Turpentine and rosin	1900	132	268,719	886	135,575	8,297	471,261	787,656
	1890	201	605,873	2,243	378,768	32,056	677,383	1,524,100

Table 3 shows that the manufacture of cotton goods is *the most important industry in the state.* The 80 establishments reported in 1900 gave employment to 30,201 wage-earners, or 62.7 per cent of the wage-earners employed in the state, and the products were valued at $29,723,919, or 50.6 per cent of the total value of the products of the state. In 1890 there were 34 establishments, 8,071 wage-earners, and products valued at $9,800,798. The increase in the value of products during the decade was $19,923,121, or 203.3 per cent.

Cotton manufacturing in South Carolina dates back nearly to the colonial period, but it is only during the last two decades that the remarkable advantages of the state for this industry have been demonstrated. A factory for weaving cotton homespun was established at Murray's Ferry, in Williamsburg county, by Scotch-Irish settlers, some years previous to 1790.[1] In 1860 there were 17 mills in the state, with products valued at $712,950; in 1870 there were 12 mills, with products valued at $1,529,937; and in 1880 the number of mills had increased to 14 and the value of products to $2,895,769. In the value of its cotton-mill products South Carolina, in 1870, 1880, and 1890, ranked second among the Southern states, Georgia ranking first, and among all the states in 1900 became second only to Massachusetts. During the decade from 1890 to 1900, the absolute increase in the value of its cotton-mill products was greater than that of any other state. As a rule, only the coarser grades of cotton goods are manufactured, and large quantities have been exported to China in recent years. A beginning has been made in the construction of mills which will gin the cotton, crush the seed, extract the oil, and manufacture the fiber into cloth. A plant of this kind, having a spinning capacity of 3,000 bales of cotton a year, has been erected at Edgefield. Three causes have contributed to the remarkable growth in the manufacture of cotton goods in South Carolina: abundant waterpower, low cost of living, and accessibility to the raw material. The superiority, in each of these particulars, of the Piedmont region, in the central and western parts of the state, has led to the construction in that section of the largest number of mills—Columbia, Union, Pelzer, Anderson, and Clifton being important centers. There were 876,545 commercial bales of cotton grown in South Carolina during the year 1899,[2] while the consumption of the local mills during the census year 1899–1900 was 485,024 bales. In spite of this large surplus in excess of local consumption, 119,100 bales of cotton were brought into the state during the census year, for the use of its mills, from North Carolina, Georgia, Alabama, and Mississippi.[3]

The manufacture of lumber and timber products ranks second among the industries of the state, with 729 establishments, 4,585 wage-earners, and products valued at $5,207,184. In 1890 there were 352 establishments, 2,590 wage-earners, and products valued at $2,146,750. The increase in the value of products during the decade was $3,060,434, or 142.6 per cent. Lumbering has always been an important industry in South Carolina. The state includes a part of the great longleaf pine forest of the South. Cypress, which ranks second in importance, is found chiefly in marshes and waste places, where it attains

[1] South Carolina, Resources, Population, Institutions, and Industries, page 574.

[2] See special report on Cotton Ginning, 1899.

[3] Department of Agriculture: The Cotton Crop of 1899–1900, page 19.

great size. Staves were for years the leading export.[1] During the census year the lumber industry was carried on largely in Berkeley, Lexington, Darlington, and Williamsburg counties, in the eastern and central parts of the state.

There were 22 establishments engaged in the manufacture of fertilizers in 1900, the industry third in rank, with 1,772 wage-earners, and products valued at $4,882,506. In 1890 there were 20 establishments, 1,102 wage-earners, and products valued at $4,417,658. The increase in the value of products during the decade was $464,848, or 10.5 per cent. The phosphate rock of South Carolina has long been famous; it was discovered in 1837 by Prof. Francis S. Holmes, who, however, was not able to demonstrate its value until 1867.[2] The first phosphate mining and manufacturing company was formed in that year, and for over twenty years the state was the chief source of the world's supply. In 1888 phosphate rock was discovered in Florida,[3] and the production there in 1899 was more than double that of South Carolina.[4] But South Carolina's large production of cottonseed meal, which is often combined with ground phosphate rock, and the large local demand for fertilizers in the growing of cotton, have enabled its fertilizer industry to hold its own.

There were 50 establishments engaged in the manufacture of cottonseed oil and cake in 1900, with 734 wage-earners, and products valued at $3,103,425. In 1890 there were 17 establishments, 416 wage-earners, and products valued at $927,772. The increase in the value of products during the decade was $2,175,653, or 234.5 per cent. This industry appeared in 1890 for the first time in the manufacturing statistics of South Carolina. In 1880 cottonseed was used almost exclusively as a fertilizer, but by 1883, 3 mills for the extraction of oil from the seed had been built, and the price of the seed rose from 10 or 12 cents per bushel to 18 cents.[5] The industry has developed extensively, although, of the 418,553 tons of seed grown in the state during the census year, 156,642 tons, or only 37.4 per cent, were crushed for oil extraction. Much of the seed which does not reach the oil mill is still used as a fertilizer.

There were 556 establishments engaged in the manufacture of flouring and grist mill products in 1900, with 281 wage-earners, and products valued at $2,347,790. In 1890 there were 512 establishments, 630 wage-earners, and products valued at $2,083,126. The increase in the value of products during the decade was $264,664, or 12.7 per cent. There were 3 merchant mills in South Carolina before the year 1800, located on Pinetree Creek. One of these had a daily capacity of 50 barrels of flour.[6] In 1870 and 1880 flour and grist milling was the leading industry in the state, using, in the latter year, nearly one-half of the waterpower developed for manufacturing purposes, and reporting products valued at $3,779,470. The industry has declined, and the production is no longer sufficient for local needs, Charleston being principally dependent upon the West for its supply of flour.[7]

There were 53 establishments engaged in the manufacture of planing mill products in 1900, with 495 wage-earners, and products valued at $1,016,328. In 1890 there were 27 establishments, 370 wage-earners, and products valued at $711,838. The increase in the value of products during the decade was $304,490, or 42.8 per cent.

There were 18 establishments engaged in the cleaning and polishing of rice in 1900, with 112 wage-earners, and products valued at $973,132. In 1890 there were 6 establishments, 143 wage-earners, and products valued at $315,056. The increase in the value of products during the decade was $658,076, or 208.9 per cent. More rice is grown on the extensive tidal marshes of South Carolina than in any other state, Louisiana excepted.[8] Rice culture began in South Carolina in 1694, the seed having been brought from Madagascar.[9] Rice, when gathered, is covered with a thick hull. This is broken off by pounding, and the fine powder which remains attached to the grains is removed by means of rotary brushes.[10] The power machines invented for this purpose in South Carolina have served as models, it is said, for the machines now used in this industry the world over.[11]

There were 132 establishments engaged in the manufacture of turpentine and rosin in 1900, with 886 wage-earners, and products valued at $787,656. In 1890 there were 201 establishments, 2,243 wage-earners, and products valued at $1,524,100. The decrease in the value of products during the decade was $736,444, or 48.3 per cent. This decrease is due to the partial exhaustion of the forests. The value of products reported in 1900 is only slightly greater than that shown for 1870.

Table 4 shows the totals for the manufacturing and mechanical industries of the city of Charleston, as returned at the censuses of 1880, 1890, and 1900, with the percentages of increase.

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[1] Charleston, Her Commercial and Manufacturing Advantages, by J. E. Land, page 34.
[2] Ibid., page 62.
[3] United States Geological Survey: Mineral Resources of the United States, 1899; Nonmetallic Products, except Coal and Coke, page 484.
[4] Ibid., page 482.
[5] South Carolina, Resources, Population, Institutions, and Industries, page 597.
[6] Ibid., page 574.
[7] Charleston, Her Commercial and Manufacturing Advantages, page 33.
[8] Department of Agriculture, Division of Botany, Bulletin No. 22, 1899, page 9.
[9] Ibid., page 8.
[10] Ibid., page 34.
[11] South Carolina, Resources, Population, Institutions, and Industries, page 574.

TABLE 4.—COMPARATIVE SUMMARY, CHARLESTON, 1880, 1890, AND 1900, WITH PER CENT OF INCREASE.

	DATE OF CENSUS.			PER CENT OF INCREASE.	
	1900	1890	1880	1890 to 1900	1880 to 1890
Number of establishments	364	566	194	[1]35.7	191.8
Capital	$12,478,187	$7,345,459	$1,718,300	69.8	327.5
Wage-earners, average number	5,027	4,684	2,146	7.3	118.3
Total wages	$1,489,966	$1,779,789	$639,030	[1]16.3	178.5
Miscellaneous expenses	$796,573	$464,172	([2])	71.6	------
Cost of materials used	$5,633,578	$4,753,396	$1,468,375	18.5	223.7
Value of products, including custom work and repairing	$9,562,387	$9,005,421	$2,732,590	6.2	229.6

[1] Decrease. [2] Not reported.

It appears from Table 4 that the number of establishments in the city of Charleston decreased during the decade ending with 1900 from 566 to 364, or 35.7 per cent, while the average number of wage-earners increased from 4,684 to 5,027, or 7.3 per cent, and the value of products increased from $9,005,421 to $9,562,387, or 6.2 per cent. The number of establishments, number of wage-earners, and value of products, in this city in 1900, constituted 9.7, 10.4, and 16.3 per cent, respectively, of the totals for the state.

Table 5 presents the totals for the manufacturing industries of the 12 cities and towns withdrawn from the enumerators, places them in comparison with the totals for the entire state and the state exclusive of these cities and towns, and shows their rank in population and in value of products.

TABLE 5.—URBAN MANUFACTURES.

	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	PRODUCTS.			POPULATION.		
				Average number.	Total wages.			Value.	Rank.	Per cent of total.	Total.	Rank.	Per cent of total.
Total for state	3,762	$67,356,465	4,088	48,135	$9,455,900	$3,111,587	$34,027,795	$58,748,781	------	100.0	1,340,316	------	100.0
Total for urban manufactures	836	27,770,884	856	16,231	3,761,380	1,592,991	13,521,451	23,014,527	------	39.2	186,514	------	10.2
Anderson	52	1,280,111	65	910	166,313	58,753	637,879	1,127,483	6	1.9	5,498	6	0.4
Beaufort	18	34,331	18	29	6,833	2,146	21,894	46,981	12	0.1	4,110	10	0.3
Camden	26	304,289	26	349	61,769	25,845	125,826	241,632	11	0.4	2,441	12	0.2
Charleston	364	12,478,187	363	5,027	1,489,966	796,573	5,633,578	9,562,387	1	16.3	55,807	1	4.2
Chester	26	480,624	31	584	114,108	41,367	376,980	645,444	8	1.1	4,075	11	0.3
Columbia	92	5,277,306	89	3,250	759,200	330,626	2,474,628	4,243,030	2	7.2	21,108	2	1.6
Greenville	64	2,858,388	65	2,153	370,392	94,417	1,414,574	2,224,990	3	3.8	11,860	3	0.9
Newberry	34	1,336,625	32	811	175,178	91,724	640,204	1,200,892	5	2.1	4,607	8	0.3
Orangeburg	34	239,635	37	284	65,486	15,303	313,582	493,360	10	0.8	4,455	9	0.3
Rock Hill	29	826,941	25	1,050	197,080	28,827	566,708	1,007,216	7	1.7	5,485	7	0.4
Spartanburg	45	2,351,175	48	1,375	276,042	83,721	923,217	1,630,275	4	2.8	11,395	4	0.9
Sumter	52	308,272	57	409	79,013	23,689	392,386	590,337	9	1.0	5,673	5	0.4
Total for state exclusive of urban manufactures	2,926	39,585,581	3,232	31,904	5,694,520	1,518,596	20,506,344	35,734,204	------	60.8	1,203,802	------	89.8
Per cent of urban manufactures to total for state	22.2	41.2	20.9	33.7	39.8	51.2	39.7	39.2	------	------	10.2	------	------

Of the 3,762 establishments in the state, 836, or 22.2 per cent, were located in these 12 cities and towns. The capital reported for these establishments was $27,770,884, or 41.2 per cent of that for the entire state. They furnished employment to 16,231 wage-earners, or 33.7 per cent of the total number, and the value of their products, $23,014,527, formed 39.2 per cent of the total for the state.

Table 6 shows the totals for the state by counties.

Table 7 shows the totals for the state by specified industries.

Table 8 shows the totals for the cities of Charleston and Columbia by specified industries.

Table 9 shows the totals for all industries in the cities and towns withdrawn from the enumerators, exclusive of those shown in Table 8.

TABLE 6.—MANUFACTURES

	COUNTIES AND MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
1	The State	3,762	$67,356,465	$3,448,643	$11,867,770	$26,096,931	$25,943,121	4,088	1,525	$1,327,052	48,135	$9,455,900
2	Abbeville	82	963,924	33,613	221,218	458,117	250,976	88	27	18,725	637	147,417
3	Aiken	85	3,559,745	156,138	1,024,872	1,360,352	1,018,883	95	34	48,713	2,498	487,303
4	Anderson	167	3,622,904	88,863	507,551	1,719,712	1,306,778	177	77	64,740	3,396	603,360
5	Bamberg	36	295,931	18,150	41,858	188,268	47,655	34	6	4,600	304	52,148
6	Barnwell	106	331,824	103,652	39,742	138,684	49,746	113	12	4,018	389	60,135
7	Beaufort	41	1,138,332	16,230	111,316	77,874	932,912	44	29	34,250	443	91,812
8	Berkeley	53	575,780	88,127	27,260	147,450	312,943	55	33	16,657	383	87,916
9	Charleston	417	13,217,940	643,578	2,129,296	1,980,286	8,464,780	428	279	292,696	5,289	1,525,461
10	Cherokee	48	2,374,358	81,639	379,926	1,118,858	793,935	45	43	44,728	1,579	284,090
11	Chester	75	647,554	32,022	123,101	297,745	194,686	88	29	15,100	802	150,481
12	Chesterfield	72	115,752	30,037	12,078	57,490	16,147	88	3	860	126	19,943
13	Clarendon	56	503,068	44,375	140,983	171,590	146,120	57	31	23,373	289	67,263
14	Colleton	69	732,890	52,864	110,418	234,315	335,293	88	20	12,120	475	74,034
15	Darlington	67	1,471,839	177,981	197,231	573,527	523,100	70	33	29,485	797	139,213
16	Dorchester	38	115,490	21,065	8,545	47,580	38,300	47	11	5,075	309	63,113
17	Edgefield	50	223,734	10,233	52,811	110,233	50,457	51	7	5,432	253	54,244
18	Fairfield	39	461,121	92,122	61,811	234,745	72,443	45	11	9,292	343	64,958
19	Florence	81	274,203	35,730	45,030	125,130	68,313	93	27	14,895	492	126,890
20	Georgetown	34	587,079	174,395	47,880	177,278	187,526	39	20	19,960	351	65,840
21	Greenville	182	4,698,325	164,560	838,560	2,032,890	1,662,315	187	99	98,887	4,277	684,304
22	Greenwood	76	957,473	26,790	194,205	501,574	234,904	87	29	20,213	722	137,456
23	Hampton	55	173,800	44,104	16,138	86,288	27,270	69	15	6,875	415	81,322
24	Horry	72	245,178	83,218	21,593	76,304	64,063	71	26	10,664	215	48,599
25	Kershaw	83	439,047	79,692	73,210	198,236	87,909	102	12	6,122	598	117,074
26	Lancaster	41	358,821	10,950	73,315	204,336	70,220	50	6	5,740	472	77,946
27	Laurens	90	540,566	32,746	110,673	288,538	108,609	121	38	26,530	1,066	188,511
28	Lexington	154	1,271,491	175,288	163,014	577,842	355,347	175	25	14,075	908	173,648
29	Marion	85	238,949	19,948	37,335	141,963	39,703	86	22	10,790	408	75,962
30	Marlboro	112	1,129,980	45,158	170,118	624,813	289,891	111	31	16,539	1,217	169,403
31	Newberry	86	1,416,868	32,888	276,358	422,545	685,082	96	31	20,540	891	187,529
32	Oconee	133	902,145	27,970	230,916	406,553	236,706	138	28	17,237	931	144,168
33	Orangeburg	171	495,347	73,386	63,888	222,995	135,078	184	21	12,180	583	110,571
34	Pickens	87	390,476	22,245	90,724	196,280	81,227	102	14	7,735	411	73,156
35	Richland	130	5,422,615	174,140	1,028,865	2,554,237	1,665,373	132	96	114,392	3,479	813,039
36	Saluda	26	61,690	5,930	8,685	31,720	15,355	30	4	1,800	60	9,585
37	Spartanburg	178	11,059,468	285,233	2,078,846	5,184,333	3,511,056	184	138	149,598	7,176	1,277,065
38	Sumter	143	502,114	29,215	62,067	307,582	103,250	159	32	18,265	647	134,299
39	Union	51	3,287,134	44,610	601,835	1,591,479	1,049,210	50	36	42,643	1,786	310,128
40	Williamsburg	83	421,825	137,539	36,947	162,338	85,001	97	27	14,541	483	83,315
41	York	108	2,129,685	32,219	408,056	1,064,851	624,559	112	63	46,967	2,285	393,199

TABLE 7.—MANUFACTURES BY

1	All industries	3,762	$67,356,465	$3,448,643	$11,867,770	$26,096,931	$25,943,121	4,088	1,525	$1,327,052	48,135	$9,455,900
2	Agricultural implements	5	14,575	450	1,750	2,975	9,400	7	------	------	10	2,606
3	Awnings, tents, and sails	3	1,750	------	------	410	1,340	3	------	------	2	1,280
4	Baskets, and rattan and willow ware	4	105,700	15,000	24,759	6,390	59,551	2	10	9,486	203	22,126
5	Bicycle and tricycle repairing	43	50,588	4,650	7,700	15,850	22,388	54	4	1,250	58	15,921
6	Blacksmithing and wheelwrighting	316	179,305	31,247	29,158	42,060	76,840	360	------	------	293	69,287
7	Boots and shoes, custom work and repairing.	81	30,517	3,730	3,690	7,427	15,670	83	------	------	42	10,263
8	Bottling	3	25,300	1,500	1,300	8,000	14,500	3	1	500	24	9,800
9	Bread and other bakery products	35	285,218	47,250	89,050	24,155	124,763	39	27	12,446	246	75,983
10	Brick and tile	76	340,960	42,680	50,130	106,961	141,189	107	41	19,606	1,145	241,106
11	Carpentering	40	124,765	7,950	13,735	31,280	71,800	40	10	5,270	549	185,757
12	Carriages and wagons	59	317,550	72,597	52,316	30,572	162,065	61	15	12,780	356	95,950
13	Cars and general shop construction and repairs by steam railroad companies.	6	354,842	24,050	86,833	78,903	165,056	------	27	21,379	776	363,041
14	Clothing, men's, custom work and repairing.	43	69,510	10,300	14,800	6,006	38,404	48	3	3,600	113	43,266
15	Clothing, men's, factory product	5	128,000	1,000	500	8,000	118,500	7	12	5,117	176	37,401
16	Clothing, women's, dressmaking	36	20,375	3,800	4,700	4,145	7,730	39	------	------	113	17,149
17	Coffins, burial cases, and undertakers' goods.	3	72,028	4,000	7,983	10,695	49,350	4	4	3,600	58	14,460
18	Confectionery	7	14,170	1,000	2,500	3,320	7,350	8	------	------	12	2,208
19	Cooperage	15	140,549	10,520	21,505	50,910	57,614	13	6	9,120	134	30,350
20	Cotton, compressing	3	274,000	47,000	104,000	77,000	46,000	------	1	1,000	55	15,512
21	Cotton, ginning[1]	670	968,658	31,019	179,723	745,091	12,825	775	86	6,695	879	122,778
22	Cotton goods	80	39,258,946	805,742	7,705,755	18,748,418	11,999,031	5	415	537,193	30,201	5,066,840
23	Dyeing and cleaning	6	9,585	------	------	4,100	5,485	6	------	------	8	2,740
24	Fertilizers	22	10,505,043	109,441	1,642,600	487,117	8,265,885	5	85	164,716	1,772	479,449
25	Flouring and grist mill products	556	652,553	50,195	153,614	383,934	64,810	531	22	8,843	281	70,458
26	Foundry and machine shop products	26	316,166	41,800	42,500	114,441	117,925	27	18	17,316	324	141,283

[1] Does not include many ginneries operated in connection with saw, grist, and cottonseed-oil mills, or for the use exclusively of plantations on which they are located. For the full number of ginneries in operation reference should be made to the special report on cotton ginning.

BY COUNTIES: 1900.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
29,823	$6,921,355	9,752	$1,685,139	8,560	$849,406	$3,111,587	$141,258	$391,065	$2,465,245	$114,019	$34,027,795	$32,924,236	$1,103,559	$58,748,731	1
384	114,906	118	23,220	135	9,291	36,954	1,993	3,686	31,045	230	504,502	486,137	18,365	834,508	2
1,438	295,421	732	132,966	328	58,916	122,336	4,861	20,783	96,683	9	1,563,492	1,509,068	54,424	2,996,274	3
1,709	360,384	827	153,265	860	89,711	200,287	5,553	21,765	171,119	1,850	2,306,962	2,230,325	76,637	4,005,526	4
194	37,301	55	9,244	55	5,603	8,509	483	2,472	5,442	112	134,161	124,056	10,105	284,611	5
328	51,535	34	5,740	27	2,860	13,865	1,503	1,832	10,130	400	244,919	238,245	6,674	432,192	6
405	89,147	30	1,865	8	800	83,149	1,591	9,529	72,029	----------	389,403	371,271	18,132	703,957	7
380	87,736	----------	----------	3	180	22,743	1,130	1,536	20,077	----------	280,752	279,690	1,062	559,182	8
4,215	1,374,117	804	135,087	220	16,257	801,963	45,886	86,612	658,094	11,371	5,693,011	5,555,137	137,874	9,714,495	9
790	193,026	339	54,341	450	36,723	113,762	3,293	21,020	89,449	----------	819,759	763,740	56,019	1,588,258	10
487	107,023	187	31,065	128	12,393	44,665	1,229	5,562	37,874	----------	585,672	557,885	27,787	955,075	11
124	19,783	----------	----------	2	160	2,238	753	572	913	----------	120,718	119,721	997	188,089	12
238	55,971	23	7,932	28	3,360	7,972	164	2,598	5,210	----------	179,057	176,314	2,743	365,948	13
392	66,292	34	4,711	49	3,031	34,938	499	4,302	30,137	----------	326,213	320,575	5,638	523,565	14
654	115,437	111	13,794	132	9,982	39,735	1,316	6,349	23,070	9,000	675,069	639,283	35,786	1,181,608	15
304	62,598	1	150	4	365	4,117	930	752	2,375	60	105,427	98,542	6,885	280,549	16
177	40,361	53	10,026	23	3,857	6,724	675	1,453	4,421	175	177,672	167,507	10,165	291,684	17
237	46,220	39	8,738	67	10,000	8,330	332	1,763	6,235	----------	143,888	135,048	8,840	291,128	18
458	124,350	33	2,500	1	40	11,748	1,423	2,379	7,946	----------	323,244	316,451	6,793	578,322	19
282	59,930	44	3,940	25	1,970	10,126	349	1,682	8,095	----------	367,283	363,667	3,616	571,539	20
2,266	441,313	1,041	159,051	970	83,940	199,111	6,942	23,270	165,049	3,850	2,836,730	2,770,370	66,360	4,559,329	21
419	87,588	155	35,798	148	14,070	30,350	1,776	6,356	21,608	610	510,836	487,730	23,106	941,396	22
407	80,704	----------	----------	8	618	3,714	449	1,146	2,119	----------	179,251	178,076	1,175	373,801	23
201	46,654	----------	----------	14	1,945	3,700	504	1,117	1,829	250	204,001	201,740	2,261	356,060	24
515	103,104	49	8,123	34	5,847	28,934	1,341	2,640	24,688	265	357,540	346,322	11,218	634,688	25
211	44,041	108	17,100	153	16,805	21,391	410	2,109	18,412	460	267,816	258,377	9,439	471,250	26
616	100,659	198	55,648	252	32,204	44,214	4,973	4,905	34,336	----------	546,694	518,518	28,176	1,027,478	27
716	153,416	79	10,757	113	9,475	19,587	1,347	2,210	15,160	870	505,507	480,674	24,833	923,571	28
316	62,875	20	4,217	72	8,870	9,938	794	1,899	7,145	100	244,481	234,689	9,792	419,466	29
591	103,284	393	50,409	233	15,710	36,498	2,717	3,658	30,123	----------	688,149	659,150	28,999	1,065,285	30
535	114,743	206	53,484	150	19,302	92,813	3,478	9,151	80,184	----------	731,812	704,618	27,194	1,339,455	31
576	100,270	206	34,607	149	9,291	28,116	820	3,886	23,410	----------	389,519	383,328	6,191	775,158	32
497	96,221	47	9,550	39	4,800	20,565	2,553	4,455	13,557	----------	455,677	443,749	11,928	836,167	33
265	52,877	78	12,390	68	7,889	23,520	1,000	1,729	20,766	25	239,755	231,709	8,046	435,644	34
2,367	651,448	569	112,032	543	49,559	348,872	21,486	25,050	250,086	52,250	2,545,571	2,441,868	103,703	4,454,991	35
55	8,870	3	620	2	95	2,075	53	307	1,715	----------	55,593	53,918	1,675	88,605	36
3,408	755,855	1,894	328,201	1,874	198,009	392,183	4,011	62,529	293,771	31,872	5,276,811	5,152,488	124,323	8,308,778	37
567	121,850	58	10,429	22	2,020	29,786	6,885	2,973	19,678	250	558,598	541,921	16,677	922,236	38
686	174,263	537	82,015	613	53,850	120,894	2,298	19,385	99,211	----------	1,034,748	995,006	39,742	1,976,397	39
470	82,065	----------	----------	13	1,250	19,902	935	5,370	13,597	----------	276,469	273,295	3,174	476,209	40
1,093	237,717	647	102,124	545	53,358	61,263	2,523	10,273	48,457	10	1,181,033	1,114,028	67,005	2,066,257	41

SPECIFIED INDUSTRIES: 1900.

29,823	$6,921,355	9,752	$1,685,139	8,560	$849,406	$3,111,587	$141,258	$391,065	$2,465,245	$114,019	$34,027,795	$32,924,236	$1,103,559	$58,748,731	1
10	2,606	----------	----------	----------	----------	931	300	31	600	----------	5,394	5,223	171	14,090	2
2	1,280	----------	----------	----------	----------	258	228	----------	30	----------	4,705	4,705	----------	8,400	3
188	21,100	----------	----------	15	1,026	13,504	1,635	1,040	10,829	----------	43,629	42,814	815	106,792	4
50	14,579	----------	----------	8	1,342	7,589	5,568	480	1,541	----------	51,815	50,956	859	117,289	5
280	68,457	----------	----------	13	830	13,376	8,778	1,893	2,600	105	108,225	99,239	8,986	359,431	6
36	10,037	----------	----------	6	226	6,426	4,658	688	1,055	25	26,437	25,899	538	84,059	7
24	9,800	----------	----------	----------	----------	1,313	800	363	150	----------	91,460	91,435	25	142,500	8
219	72,550	18	2,545	9	888	17,110	5,558	3,754	7,798	----------	323,390	318,264	5,126	524,908	9
1,085	235,294	5	563	55	5,249	25,162	7,474	3,095	13,893	700	131,615	17,784	113,831	573,438	10
545	185,507	1	100	3	150	30,639	2,284	1,284	1,871	25,200	513,408	512,535	873	863,387	11
331	91,650	7	2,000	18	2,300	15,995	2,118	2,540	11,328	9	211,039	207,247	3,792	428,082	12
774	362,681	2	360	----------	----------	12,555	----------	4,508	8,047	----------	294,334	286,099	8,235	691,361	13
101	40,966	7	1,851	5	449	6,958	3,982	636	1,990	350	68,384	67,266	1,118	173,059	14
15	6,250	158	30,668	3	483	14,656	1,720	865	1,500	10,571	186,889	186,529	360	306,250	15
2	468	97	15,995	14	686	4,372	3,002	310	1,060	----------	26,761	26,446	315	69,045	16
58	14,460	----------	----------	----------	----------	3,203	500	353	2,350	----------	33,115	31,790	1,325	63,725	17
2	824	7	1,184	3	200	2,035	1,756	208	71	----------	17,086	16,662	424	34,200	18
132	30,250	----------	----------	2	100	4,750	202	1,148	3,150	250	90,600	90,551	49	168,449	19
55	15,512	----------	----------	----------	----------	8,745	200	5,900	2,645	----------	3,675	775	2,900	46,000	20
870	121,693	7	935	2	150	16,393	1,573	5,966	8,854	----------	92,195	53,408	38,787	573,823	21
13,418	2,785,285	8,673	1,477,621	8,110	803,934	1,507,824	----------	206,355	1,267,597	33,872	17,263,882	16,652,680	611,202	29,723,919	22
7	2,240	1	500	----------	----------	1,177	828	122	227	----------	1,556	1,288	268	9,100	23
1,772	479,449	----------	----------	----------	----------	675,589	1,050	53,200	621,339	----------	3,107,710	3,018,924	88,786	4,882,506	24
281	70,458	----------	----------	----------	----------	15,742	2,094	5,427	8,161	60	1,958,658	1,943,070	15,588	2,347,790	25
320	140,813	----------	----------	4	470	16,758	2,326	2,935	11,497	----------	166,849	157,027	9,822	403,493	26

TABLE 7.—MANUFACTURES BY

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
27	Fruits and vegetables, canning and preserving.	12	$23,862	$1,525	$2,075	$6,718	$13,544	13	6	$1,030	64	$7,410
28	Furniture, cabinetmaking, repairing, and upholstering.	25	20,929	3,300	7,300	2,800	7,529	29	1	600	26	6,797
29	Gas, illuminating and heating	4	961,033	42,000	81,067	664,237	173,729		23	11,649	104	30,127
30	Hosiery and knit goods	6	345,212	4,112	43,200	200,000	97,900	3	15	13,520	359	73,872
31	Ice, artificial	13	407,400	25,225	102,550	241,000	38,625	7	13	10,182	73	23,781
32	Leather, tanned, curried, and finished	5	5,595	545	1,875	875	2,300	5			10	2,000
33	Liquors, distilled	22	20,893	503	2,355	13,250	4,785	22	1	500	31	4,792
34	Lock and gun smithing	13	29,625	10,320	10,385	2,620	5,800	14	1	950	11	4,509
35	Looking-glass and picture frames	3	13,850	5,000	3,000	3,350	2,500	4			4	1,314
36	Lumber and timber products	729	5,187,727	1,410,050	434,076	1,754,808	1,588,793	918	217	134,449	4,585	897,399
37	Lumber, planing mill products, including sash, doors, and blinds.	53	412,128	45,995	49,010	126,705	189,418	67	25	17,264	495	146,539
38	Marble and stone work	8	306,415	90,098	13,010	157,349	45,958	6	7	10,080	175	48,230
39	Mattresses and spring beds	9	63,507	1,350	9,150	12,407	40,600	5	15	8,516	64	14,586
40	Millinery, custom work	79	165,303	20,670	27,300	6,193	111,140	90	10	3,645	149	36,591
41	Mineral and soda waters	11	24,304	550	1,125	13,000	9,629	11	5	1,881	27	4,883
42	Monuments and tombstones	22	69,950	5,825	6,475	5,155	52,495	27	6	3,180	72	32,211
43	Oil, cottonseed and cake	50	1,959,872	66,767	369,601	877,784	645,720	18	162	108,798	734	143,932
44	Painting, house, sign, etc	17	14,390	1,000	3,250	2,720	7,420	17			93	22,705
45	Patent medicines and compounds	4	14,850	50	500	5,415	8,885	2	2	2,000	9	2,150
46	Photography	30	39,885	250	1,600	18,605	19,430	31			33	12,850
47	Plumbing, and gas and steam fitting	16	48,655	8,700	8,100	9,325	22,530	20			87	29,395
48	Pottery, terra cotta, and fire-clay products.	10	25,751	7,350	8,185	5,740	4,476	12	2	840	46	10,000
49	Printing and publishing, book and job	22	245,308	5,800	4,200	137,570	97,738	26	28	19,690	212	79,265
50	Printing and publishing, newspapers and periodicals.	98	434,255	22,550	37,550	226,582	147,573	99	56	42,631	413	156,924
51	Rice, cleaning and polishing	18	293,385	46,012	97,958	51,090	98,325	22	18	15,762	112	25,243
52	Roofing and roofing materials	5	6,112	1,200	1,500	1,947	1,465	5	1	600	29	10,791
53	Saddlery and harness	24	54,097	4,950	8,875	9,720	30,552	24	2	970	42	17,923
54	Sugar and molasses, refining	22	2,363	153	379	1,827	4	24			11	1,820
55	Tinsmithing, coppersmithing, and sheet-iron working.	40	113,473	11,100	17,550	24,360	60,463	48	12	5,825	146	56,992
56	Tobacco, cigars and cigarettes	6	12,510	1,500	1,700	1,710	7,600	6	1	900	29	9,400
57	Turpentine and rosin	182	268,719	94,997	13,945	55,996	103,781	171	36	8,291	886	135,575
58	Watch, clock, and jewelry repairing	66	74,510	9,850	13,400	22,895	28,365	73			47	17,600
59	Wood, turned and carved	4	8,175	475	1,300	4,300	2,100	4	2	800	21	3,028
60	All other industries[1]	41	1,421,769	131,450	248,123	430,718	616,478	38	71	62,582	1,106	247,752

[1] Embraces bags, other than paper, 1; boxes, wooden packing, 1; brooms and brushes, 2; carpets and rugs, other than rag, 1; clothing, women's, factory product, 1; electrical apparatus and supplies, 1; electrical construction and repairs, 2; electroplating, 1; engraving and diesinking, 1; fancy articles, not elsewhere specified, 1; fish, canning and preserving, 1; furnishing goods, men's, 2; hairwork, 1; hand stamps, 1; ironwork, architectural and ornamental, 2; jute and jute goods, 1; lead,

TABLE 8.—MANUFACTURES IN CITIES

CHARLESTON.

1	All industries	364	$12,478,187	$515,003	$2,047,951	$1,822,082	$8,088,201	363	268	$291,148	5,027	$1,489,966
2	Awnings, tents, and sails	3	1,750			410	1,340	3			2	1,280
3	Baskets, and rattan and willow ware	3	101,100	15,000	24,759	2,390	58,951	1	10	9,486	193	21,526
4	Bicycle and tricycle repairing	10	9,100	100	400	3,100	5,500	12	3	750	21	6,387
5	Blacksmithing and wheelwrighting	25	40,020	9,300	5,050	5,680	19,990	26			79	23,917
6	Boots and shoes, custom work and repairing.	47	20,497	3,000	3,000	3,357	11,140	47			17	4,546
7	Bread and other bakery products	25	246,140	33,150	73,450	21,875	117,665	29	26	12,296	212	64,713
8	Carpentering	11	27,690	5,500	7,500	4,630	10,060	12	4	1,470	136	75,050
9	Clothing, men's, custom work and repairing.	18	36,400	2,500	6,500	2,415	24,985	21	3	3,600	67	29,720
10	Clothing, men's, factory product	5	128,000	1,000	500	8,000	118,500	7	12	5,117	176	37,401
11	Clothing, women's, dressmaking	28	18,250	3,800	4,700	2,545	7,205	29			84	11,497
12	Confectionery	4	6,570	1,000	2,500	1,920	1,150	4			7	1,400
13	Cooperage	5	134,179	10,000	20,000	50,165	54,014	4	5	8,520	109	25,150
14	Dyeing and cleaning	3	9,100			3,900	5,200	3			7	2,500
15	Fertilizers	11	7,868,639	76,500	1,239,350	298,700	6,254,089		56	118,164	1,353	370,678
16	Foundry and machine shop products	4	179,258	12,500	19,200	64,541	83,017	1	10	13,062	167	88,400
17	Furniture, cabinetmaking, repairing, and upholstering.	12	5,365	800	800	1,190	2,575	13			14	3,336
18	Lock and gun smithing	6	16,400	4,000	6,500	1,450	4,450	6	1	950	8	2,865
19	Lumber and timber products	4	233,740	40,000	19,000	21,500	153,240	1	13	12,350	142	44,050
20	Lumber, planing mill products, including sash, doors, and blinds	6	88,425	9,000	15,000	27,200	37,225	6	7	4,864	103	41,564
21	Mattresses and spring beds	3	10,505		3,000	5,305	2,200	2	3	1,416	8	2,036
22	Millinery, custom work	14	29,165	1,000	500	915	26,750	17			53	11,344
23	Monuments and tombstones	5	35,050	3,500	3,500	3,250	24,800	5	1	1,000	32	18,800
24	Painting, house, sign, etc	9	11,920	800	2,800	2,160	6,160	9			59	15,984
25	Photography	4	21,000			8,000	13,000	4			13	7,050

SPECIFIED INDUSTRIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
15	$2,625	27	$2,835	22	$1,950	$503	----------	$185	$518	----------	$15,169	$14,879	$290	$28,565	27
23	6,637	2	110	1	50	2,052	$1,430	182	440	----------	11,097	10,821	276	34,189	28
104	30,127	----------	----------	----------	----------	45,792	6,802	10,626	28,364	----------	38,440	37,725	715	172,005	29
73	25,200	158	32,792	128	15,880	38,887	25	1,162	11,100	$26,600	237,622	233,300	4,322	392,237	30
73	23,781	----------	----------	----------	----------	18,225	460	3,107	14,658	----------	37,327	12,322	25,005	116,357	31
10	2,000	----------	----------	----------	----------	525	----------	100	425	----------	12,743	12,716	27	18,387	32
81	4,792	----------	----------	----------	----------	54,121	16	97	54,008	----------	31,285	28,226	3,059	105,788	33
10	4,484	----------	----------	1	25	1,671	484	850	327	10	6,845	6,677	168	22,908	34
4	1,314	----------	----------	----------	----------	615	250	265	100	----------	4,973	4,973	----------	9,467	35
4,545	893,686	4	300	36	8,913	107,445	5,732	22,354	79,259	100	2,629,805	2,628,525	1,280	5,207,184	36
481	145,295	----------	----------	14	1,244	20,042	3,657	3,131	11,514	1,740	621,831	616,625	5,206	1,016,328	37
175	48,230	----------	----------	----------	----------	17,034	320	1,484	15,230	----------	9,860	5,795	4,065	124,152	38
49	12,778	5	933	10	875	3,480	715	320	2,445	----------	62,099	61,359	740	122,847	39
1	350	144	36,081	4	210	13,785	9,364	1,488	2,933	----------	157,681	157,057	624	304,749	40
26	4,783	----------	----------	1	100	5,754	4,530	241	983	----------	20,196	20,075	121	45,479	41
71	31,911	1	300	----------	----------	3,948	1,569	644	1,735	----------	50,229	49,923	306	120,090	42
733	143,682	1	250	----------	----------	127,462	600	14,568	102,529	9,765	2,362,837	2,284,208	78,629	3,103,425	43
93	22,705	----------	----------	----------	----------	2,103	1,111	128	614	250	22,418	22,403	15	58,740	44
9	2,150	----------	----------	----------	----------	1,572	480	82	950	60	9,880	9,350	530	21,793	45
24	10,238	9	2,612	----------	----------	7,097	3,703	581	2,763	100	18,873	18,505	368	67,382	46
84	29,191	----------	----------	3	204	3,746	2,055	561	1,130	----------	62,170	61,557	613	118,736	47
45	9,800	----------	----------	1	200	1,162	167	110	710	175	5,371	1,978	3,393	23,255	48
168	71,002	44	8,263	----------	----------	15,302	5,644	1,836	7,822	----------	89,790	86,249	3,541	278,547	49
368	149,400	27	6,128	18	1,396	40,367	9,290	3,631	24,901	2,545	97,776	91,370	6,406	510,529	50
112	25,243	----------	----------	----------	----------	9,862	235	4,785	4,842	----------	856,790	850,423	6,367	973,182	51
28	10,716	----------	----------	1	75	759	548	154	57	----------	11,949	11,885	64	32,150	52
42	17,923	----------	----------	----------	----------	3,961	2,605	364	992	----------	58,815	58,476	339	124,175	53
11	1,820	----------	----------	----------	----------	18	1	12	5	----------	9,492	8,951	541	18,677	54
138	56,120	----------	----------	8	872	9,458	5,015	1,454	2,689	300	128,583	127,551	1,032	265,945	55
25	8,400	3	800	1	200	4,614	565	242	3,807	----------	9,647	9,572	75	31,550	56
867	133,650	18	1,805	1	120	8,297	2,210	1,389	4,073	625	471,261	464,469	6,792	737,656	57
43	17,219	1	150	3	231	10,713	6,257	1,109	2,852	495	19,214	18,497	717	95,407	58
21	8,028	----------	----------	----------	----------	436	12	92	220	112	4,852	4,137	715	18,775	59
744	186,866	325	57,508	37	3,378	107,719	6,772	11,180	89,767	----------	1,018,064	985,041	33,023	1,667,429	60

bar, pipe, and sheet, 1; lime and cement, 1; liquors, malt, 1; masonry, brick and stone, 2; oysters, canning and preserving, 1; paper and wood pulp, 1; paper goods, not elsewhere specified, 1; perfumery and cosmetics, 1; sausage, 2; sewing machine repairing, 2; ship and boat building, wooden, 2; slaughtering, wholesale, not including meat packing, 1; soap and candles, 1; tobacco, stemming and rehandling, 1; umbrellas and canes, 1; upholstering materials, 1; woolen goods, 1.

BY SPECIFIED INDUSTRIES: 1900.

CHARLESTON.

4,017	$1,340,062	790	$133,647	220	$16,257	$796,573	$45,787	$85,226	$654,329	$11,231	$5,633,578	$5,499,100	$134,478	$9,562,387	1
2	1,280	----------	----------	----------	----------	258	228	----------	30	----------	4,705	4,705	----------	8,400	2
178	20,500	----------	----------	15	1,026	13,134	1,335	990	10,809	----------	42,504	41,724	780	104,432	3
15	5,325	----------	----------	6	1,062	2,928	2,036	187	705	----------	14,381	14,080	301	37,600	4
72	23,346	----------	----------	7	571	3,703	2,208	624	871	----------	22,824	21,634	1,190	76,873	5
11	4,320	----------	----------	6	226	4,334	3,306	548	980	----------	13,652	13,273	379	48,912	6
191	62,216	13	1,645	8	852	14,434	3,868	3,406	7,160	----------	289,890	285,506	4,384	462,993	7
132	74,800	1	100	3	150	1,850	460	825	565	----------	92,308	92,213	95	190,600	8
63	29,320	----------	----------	4	400	4,181	2,104	454	1,273	350	44,828	44,425	403	115,421	9
15	6,250	158	30,668	3	483	14,656	1,720	865	1,500	10,571	186,889	186,529	360	306,250	10
2	468	68	10,343	14	686	3,740	2,500	300	940	----------	13,175	12,925	250	44,945	11
1	360	3	840	3	200	586	380	173	33	----------	4,872	4,745	127	10,900	12
109	25,150	----------	----------	----------	----------	4,361	176	1,103	3,082	----------	72,695	72,660	35	185,024	13
6	2,000	1	500	----------	----------	1,010	670	120	220	----------	1,130	912	218	7,800	14
1,353	370,678	----------	----------	----------	----------	504,062	1,050	31,038	471,974	----------	2,338,615	2,269,613	69,002	3,697,090	15
167	88,400	----------	----------	----------	----------	10,853	822	1,334	8,697	----------	90,420	86,689	3,731	223,062	16
13	3,286	----------	----------	1	50	1,328	933	95	300	----------	3,810	3,720	90	15,299	17
7	2,340	----------	----------	1	25	1,525	400	335	790	----------	4,925	4,850	75	16,000	18
142	44,050	----------	----------	----------	----------	4,865	640	1,325	2,900	----------	188,860	187,660	1,200	294,350	19
93	40,664	----------	----------	10	1,000	8,485	650	1,310	6,525	----------	108,822	108,620	202	199,900	20
7	1,828	1	208	----------	----------	1,030	605	135	290	----------	14,380	14,110	270	22,175	21
1	350	48	10,784	4	210	5,385	3,740	330	1,315	----------	29,780	29,635	145	60,585	22
32	18,800	----------	----------	----------	----------	2,100	575	325	1,200	----------	15,335	15,135	200	48,000	23
59	15,984	----------	----------	----------	----------	1,566	650	118	548	250	13,549	13,539	10	38,850	24
10	5,900	3	1,150	----------	----------	3,055	1,050	230	1,775	----------	6,755	6,640	115	23,800	25

TABLE 8.—MANUFACTURES IN CITIES

CHARLESTON—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES, AND CITIES AND TOWNS.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
26	Plumbing, and gas and steam fitting	7	$20,350	$4,700	$4,100	$1,850	$9,700	8			39	$15,592
27	Printing and publishing, book and job	7	182,417			103,080	79,337	6	22	$15,990	121	49,542
28	Printing and publishing, newspapers and periodicals	6	89,700	12,000	19,000	36,700	22,000	10	11	11,218	80	49,759
29	Saddlery and harness	4	11,950	1,000	1,500	2,050	7,400	4			7	3,286
30	Tinsmithing, coppersmithing, and sheet-iron working	15	56,425	6,500	12,000	9,300	28,625	17	6	3,200	81	35,542
31	Tobacco, cigars and cigarettes	4	9,410	1,500	1,700	1,510	4,700	4			17	5,600
32	Watch, clock, and jewelry repairing	14	18,950	1,100	1,700	5,000	11,150	19			15	5,815
33	All other industries[1]	42	2,805,722	255,758	549,942	1,117,944	882,083	33	75	67,195	1,605	413,626

[1] Embraces bags, other than paper, 1; bottling, 1; carriages and wagons, 2; cars and general shop construction and repairs by steam railroad companies, 1; clothing, women's, factory product, 1; cotton, compressing, 2; cotton goods, 1; electrical construction and repairs, 2; electroplating, 1; engraving and diesinking, 1; fancy articles, not elsewhere specified, 1; flouring and grist mill products, 2; furnishing goods, men's, 1; gas, illuminating and heating, 1; hairwork, 1; hand stamps, 1; ice, artificial, 2; ironwork, architectural and ornamental, 1; jute and jute goods, 1; liquors, malt, 1; looking-glass and picture frames, 2; masonry, brick

COLUMBIA.

1	All industries	92	$5,277,306	$153,891	$1,017,150	$2,465,062	$1,641,203	89	87	$108,021	3,250	$759,200
2	Bicycle and tricycle repairing	5	4,125			2,575	1,550	7			14	3,655
3	Blacksmithing and wheelwrighting	10	5,685	625	575	2,285	2,200	12			16	3,819
4	Bread and other bakery products	3	15,950	5,250	4,600	750	5,350	3			20	8,108
5	Carpentering	6	35,350			7,650	27,700	5	3	2,700	213	45,643
6	Carriages and wagons	3	9,000	1,000	800	1,100	6,600	3			25	7,680
7	Clothing, men's, custom work and repairing	7	26,268	7,500	8,000	2,162	8,606	8			26	8,725
8	Confectionery	3	7,600			1,400	6,200	4			5	808
9	Cotton goods	4	3,815,156	68,116	721,742	2,034,240	991,058		24	38,633	2,021	369,226
10	Foundry and machine shop products	3	53,450	20,000	11,000	10,500	11,950	3	1	780	54	20,210
11	Lumber, planing mill products, including sash, doors, and blinds	3	28,050	400	100	9,350	18,200	7			20	4,368
12	Photography	3	4,675			2,450	2,225	3			7	2,312
13	Plumbing, and gas and steam fitting	3	4,050			1,650	2,400	5			16	5,360
14	Printing and publishing book and job	6	17,190			7,240	9,950	4	5	3,100	61	20,550
15	Printing and publishing, newspapers and periodicals	4	52,332			28,132	24,200	3	14	15,800	49	26,736
16	Watch, clock, and jewelry repairing	7	14,325	5,000	4,000	3,675	1,650	8			10	5,300
17	All other industries[1]	22	1,184,100	46,000	266,838	349,903	521,364	14	40	47,008	698	226,700

[1] Embraces brooms and brushes, 1; cars and general shop construction and repairs by steam railroad companies, 1; cotton, compressing, 1; fertilizers, 2; furniture, cabinetmaking, repairing, and upholstering, 2; gas, illuminating and heating, 1; hosiery and knit goods, 1; ice, artificial, 1; lock and gun smithing, 1;

TABLE 9.—MANUFACTURES IN CITIES AND

1	Total for cities and towns	380	$10,020,391	$363,270	$1,776,495	$4,341,197	$3,539,429	404	231	$212,826	7,954	$1,512,214
2	Anderson	52	1,280,111	29,568	222,026	580,087	448,435	65	26	22,325	910	166,313
3	Beaufort	18	34,331	5,500	5,500	16,130	7,201	18	1	900	29	6,833
4	Camden	26	304,289	38,100	62,250	136,455	67,484	26	8	4,902	349	61,769
5	Chester	26	480,624	25,042	91,591	180,685	183,306	31	18	12,492	584	114,108
6	Greenville	64	2,858,388	85,732	503,089	1,125,311	1,144,256	65	55	63,418	2,153	370,392
7	Newberry	34	1,336,625	29,100	262,283	368,060	677,182	32	27	19,840	811	175,178
8	Orangeburg	34	239,635	30,400	28,735	100,100	80,400	37	7	6,600	284	65,486
9	Rock Hill	29	826,941	10,613	157,787	358,098	300,443	25	36	28,524	1,050	197,080
10	Spartanburg	45	2,351,175	100,170	408,109	1,282,774	560,122	48	34	41,060	1,375	276,042
11	Sumter	52	308,272	9,050	35,125	193,497	70,600	57	19	12,765	409	79,013

BY SPECIFIED INDUSTRIES: 1900—Continued.

CHARLESTON—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
36	$15,388			3	$204	$1,709	$964	$295	$450		$17,204	$16,974	$230	$14,854	26
84	42,874	37	$6,668			11,145	3,330	1,327	6,488		72,390	69,921	2,469	203,032	27
77	49,237	2	480	1	52	8,180	487	1,227	6,406	$60	17,210	14,775	2,435	128,081	28
7	3,286					1,020	525	115	380		26,790	26,630	160	47,100	29
73	34,670			8	872	4,802	1,690	977	2,135		52,477	51,942	535	128,500	30
16	5,400			1	200	2,493	435	215	1,843		6,035	6,000	35	18,450	31
14	5,740			1	75	3,446	1,646	355	1,445		8,205	8,015	190	35,320	32
1,029	335,452	455	70,261	121	7,913	149,849	4,604	34,545	110,700		1,814,163	1,769,301	44,862	2,768,289	33

and stone, 1; mineral and soda waters, 2; oil, cottonseed and cake, 1; patent medicines and compounds, 1; perfumery and cosmetics, 1; rice, cleaning and polishing, 2; roofing and roofing materials, 2; ship and boat building, wooden, 1; slaughtering and meat packing, wholesale, 1; soap and candles, 1; umbrellas and canes, 1; upholstering materials, 1.

COLUMBIA.

2,140	$597,709	569	$112,032	541	$49,459	$330,626	$20,376	$23,854	$234,146	$52,250	$2,474,628	$2,385,712	$88,916	$4,243,030	1
12	3,375			2	280	1,541	916	73	522		10,002	9,795	207	19,953	2
16	3,819					453	379	54	20		7,877	7,045	332	19,000	3
15	7,208	5	900			1,757	1,380	150	227		20,639	20,284	355	39,955	4
213	45,643					25,485	150	15	320	25,000	221,342	221,142	200	367,425	5
25	7,680					820	600	120	100		9,750	9,500	250	26,150	6
24	8,520	1	156	1	49	1,673	996	65	612		11,026	10,692	334	29,543	7
1	464	4	344			1,449	1,376	35	38		12,214	11,917	297	23,300	8
1,023	223,704	482	97,742	516	47,780	170,901		10,634	160,267		1,075,389	1,020,006	55,383	1,956,089	9
51	19,950			3	260	2,082	28	874	1,180		17,463	16,747	716	53,300	10
20	4,368					518	240	63	215		42,580	42,400	180	74,600	11
7	2,312					1,137	860	30	247		1,857	1,829	28	8,787	12
16	5,360					926	587	20	319		11,421	11,391	30	21,533	13
57	19,430	4	1,120			1,808	908	179	721		9,173	8,731	442	41,580	14
45	25,736	4	1,000			14,181	1,722	553	11,156	750	23,398	22,363	1,035	90,968	15
10	5,300					1,209	866	60	283		2,315	2,125	190	13,786	16
605	214,840	69	10,770	19	1,090	104,686	9,338	10,929	57,919	26,500	998,682	969,745	28,937	1,451,111	17

mineral and soda waters, 1; monuments and tombstones, 1; oil, cottonseed and cake, 2; painting, house, sign, etc., 2; saddlery and harness, 2; tinsmithing, coppersmithing, and sheet-iron working, 2; tobacco, cigars and cigarettes, 1.

TOWNS UNDER 20,000 IN POPULATION: 1900.

4,484	$1,015,073	1,782	$317,326	1,688	$179,815	$465,792	$29,763	$59,930	$372,619	$3,480	$5,413,245	$5,187,432	$225,813	$9,209,110	1
471	108,052	184	32,389	255	25,872	58,753	4,422	7,477	45,354	1,500	637,879	599,625	38,254	1,127,483	2
27	6,633			2	200	2,146	1,417	489	240		21,894	20,517	1,377	46,981	3
256	47,824	45	8,123	48	5,822	25,845	720	1,882	23,103	140	125,826	115,920	9,906	241,632	4
369	83,850	117	20,565	98	9,693	41,367	1,152	3,597	36,618		376,980	355,460	21,520	645,444	5
1,178	248,832	483	74,225	492	47,335	94,417	6,084	12,131	75,602	600	1,414,574	1,368,213	46,361	2,224,990	6
455	102,392	206	53,484	150	19,302	91,724	3,430	8,697	79,597		640,204	615,482	24,722	1,200,892	7
199	51,336	46	9,350	39	4,800	15,303	2,304	2,982	10,017		313,582	306,975	6,607	493,860	8
521	132,307	284	41,256	245	23,517	28,827	1,690	5,857	21,280		566,703	541,249	25,454	1,007,216	9
679	167,283	359	67,505	337	41,254	83,721	3,459	14,363	64,359	1,040	923,217	881,649	41,568	1,630,275	10
329	66,564	58	10,429	22	2,020	23,689	5,085	1,955	16,449	200	392,386	382,342	10,044	590,337	11

Twelfth Census of the United States.

CENSUS BULLETIN.

No. 141. WASHINGTON, D. C. February 20, 1902.

MANUFACTURES.

WASHINGTON.

Hon. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I transmit herewith, for publication in bulletin form, the statistics of manufacturing and mechanical industries for the state of Washington for the census year 1900, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that "The schedules of inquiries relating to the products of manufacturing and mechanical establishments shall embrace the name and location of each establishment; character of organization, whether individual, cooperative, or other form; date of commencement of operations; character of business or kind of goods manufactured; amount of capital invested; number of proprietors, firm members, copartners, or officers, and the amount of their salaries; number of employees, and the amount of their wages; quantity and cost of materials used in manufactures; amount of miscellaneous expenses; quantity and value of products; time in operation during the census year; character and quantity of power used; and character and number of machines employed."

In each of the above particulars the requirements of the law have been observed, but certain of the data thus elicited are reserved for publication in the final volumes.

There were 9 cities in the state withdrawn from the enumerators and their manufacturing statistics collected by special agents, in accordance with the further provision of section 7 of the census act. Wherever the phrase "urban manufactures" is used in this bulletin, it applies only to those cities which were withdrawn from the enumerators and committed to special agents, and only to manufacturing establishments within the corporate limits of such places.

Three cities in Washington contain a population exceeding 20,000 each: Seattle, Spokane, and Tacoma. The manufacturing statistics of these 3 cities are presented by specified industries, and the statistics of Seattle and Tacoma are presented in comparison with the returns of the Eleventh Census. The statistics of Spokane were not shown separately in 1890, and comparisons with that year are, therefore, not possible in this case.

Mr. W. P. C. Adams, of Olympia, rendered valuable assistance in the preparation of the text for the accompanying report.

The statistics of Washington are presented in 9 tables: Table 1 showing comparative figures for the state at the several censuses; Table 2 showing all the industries of the state divided between hand trades and the manufactures proper, and also the statistics of governmental establishments, penal institutions, and establishments with a product of less than $500, which three latter classes were not reported at previous censuses; Table 3 showing the statistics of the 10 leading industries of the state for 1890 and 1900; Table 4 showing the totals for the cities of Seattle and Tacoma at the censuses of 1890 and 1900; Table 5 showing the urban manufactures of the state in comparison with the totals for the entire state and the state exclusive of the cities withdrawn from the enumerators; Table 6 showing the statistics for the state by counties; Table 7 showing the statistics for the state by specified industries; Table 8 showing the statistics for the cities of Seattle, Spokane, and Tacoma by specified industries; and Table 9 showing the totals for all industries in each of the cities withdrawn from the enumerators (exclusive of those shown in Table 8).

Table 1 shows the growth of manufactures in Washington for the forty years which terminate with the Twelfth Census. Owing to changes in the method of taking the census, comparisons between the earlier and later decades, represented in Table 1, should be drawn only in the most general way. Nevertheless, the rate of growth in Washington manufactures may be fairly inferred from the figures given.

In drafting the schedules of inquiry for the census of

1900 care was taken to preserve the basis of comparison with prior censuses. Comparison may be made safely with respect to all the items of inquiry except those relating to capital, salaried officials, clerks, etc., and their salaries, the average number of employees, and the total amount of wages paid. Live capital, that is, cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries, was first called for at the census of 1890. No definite attempt was made, prior to the census of 1890, to secure a return of live capital invested.

Changes were made in the inquiries relating to employees and wages in order to eliminate defects found to exist on the form of inquiry adopted in 1890. At the census of 1890 the average number of persons employed during the entire year was called for, and also the average number employed at stated weekly rates of pay, and the average number was computed for the actual time the establishments were reported as being in operation. At the census of 1900 the greatest and least numbers of employees were reported, and also the average number employed during each month of the year. The average number of wage-earners (men, women, and children) employed during the entire year was ascertained by using 12, the number of calendar months, as a divisor into the total of the average numbers reported for each month. This difference in the method of ascertaining the average number of wage-earners during the entire year may have resulted in a variation in the number, and should be considered in making comparisons.

At the census of 1890 the number and salaries of proprietors and firm members actively engaged in the business or in supervision were reported, combined with clerks and other officials. In cases where proprietors and firm members were reported without salaries, the amount that would ordinarily be paid for similar services was estimated. At the census of 1900 only the number of proprietors and firm members actively engaged in the industry or in supervision was ascertained, and no salaries were reported for this class. It is therefore impossible to compare the number and salaries of salaried officials of any character for the two censuses.

Furthermore, the schedules for 1890 included in the wage-earning class, overseers, foremen, and superintendents (not general superintendents or managers), while the census of 1900 separates from the wage-earning class such salaried employees as general superintendents, clerks, and salesmen. It is possible and probable that this change in the form of the question has resulted in eliminating from the wage-earners, as reported by the present census, many high-salaried employees included in that group for the census of 1890.

In some instances, the number of proprietors and firm members shown in the accompanying tables, falls short of the number of establishments reported. This is accounted for by the fact that no proprietors or firm members are reported for corporations or cooperative establishments.

The reports show a capital of $52,649,760 invested in manufactures and mechanical industries in the 3,631 establishments reporting for the state of Washington. This sum represents the value of land, buildings, machinery, tools, and implements, and the live capital utilized, but does not include the capital stock of any of the manufacturing corporations of the state. The value of the products is returned at $86,795,051, to produce which involved an outlay of $2,164,024 for salaries of officials, clerks, etc.; $19,106,873 for wages; $3,860,455 for miscellaneous expenses, including rent, taxes, etc.; and $49,099,182 for materials used, mill supplies, freight, and fuel. It is not to be assumed, however, that the difference between the aggregate of these sums and the value of the products is, in any sense, indicative of the profits in the manufacture of the products during the census year. The census schedule takes no cognizance of the cost of selling manufactured articles, or of interest on capital invested, or of the mercantile losses incurred in the business, or of depreciation in plant. The value of the product given is the value as obtained or fixed at the shop or factory. This statement is necessary in order to avoid erroneous conclusions from the figures presented.

The value of products for the state of Washington, $86,795,051, is the gross value, and not the net or true value. The difference between these two should be carefully noted. The gross value is found by adding the value of products in the separate establishments. But the finished product of one establishment is often the raw material for another. In such cases the value of the former reappears in the latter, and thus the original cost of certain materials may be included several times in the gross value. The net or true value is found by subtracting from the gross value the value of all materials purchased in a partly manufactured form. In this way the duplications in the gross value are eliminated.

At the census of 1890 the schedule was so framed that it was impossible to find the net or true value. In the present census the schedule asked for the value of the materials in two classes, those purchased in the crude state and those purchased in the partly manufactured form. From the answers to these questions the net or true value of products may be computed. Thus, for Washington, the gross value of products for 1900 was $86,795,051. The value of materials purchased in a partly manufactured form was $30,364,717. The difference, $56,430,334, is the net or true value of products, and represents the increase in the value of raw materials resulting from the various processes of manufacture.

Very respectfully,

S. N. D. North

Chief Statistician for Manufactures.

WASHINGTON.

Washington was organized as a territory March 2, 1853, being set off from Oregon. The Eighth Census (1860) was the first, therefore, in which the statistics of Washington were published separately. In 1863 the territory was reduced to its present area, so that the statistics for 1870 are the earliest that are strictly comparable with the later censuses. Washington was admitted as a state November 11, 1889.

Table 1 shows the manufacturing and mechanical industries of the state as returned at the censuses of 1860 to 1900, inclusive, with the percentages of increase for each decade. This table also presents the average number of wage-earners employed by manufacturing establishments, in comparison with the total population of the state, and the value of the land and buildings owned and reported by manufacturers as capital, in comparison with the assessed value of all real estate and improvements.

TABLE 1.—COMPARATIVE SUMMARY, 1860 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.					PER CENT OF INCREASE.			
	1900	1890	1880	1870	1860	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870
Number of establishments	3,631	1,543	261	269	52	135.3	491.2	[1]3.0	417.3
Capital	$52,649,760	$34,369,735	$3,202,497	$1,893,674	$1,296,200	53.2	973.2	69.1	46.1
Salaried officials, clerks, etc., number	2,242	[2]1,689	([3])	([3])	([3])	32.7			
Salaries	$2,164,024	[2]$1,646,720	([3])	([3])	([3])	31.4			
Wage-earners, average number	33,806	18,677	1,147	1,026	870	81.0	1,528.3	11.8	17.9
Total wages	$19,106,878	$11,011,894	$532,226	$574,936	$453,601	73.5	1,969.0	[1]7.4	26.7
Men, 16 years and over	32,325	18,064	1,110	1,025	866	78.9	1,527.4	8.3	18.4
Wages	$18,669,237	$10,802,496	([3])	([3])	([3])	72.8			
Women, 16 years and over	1,216	483	25	1	4	151.8	1,832.0	2,400.0	[1]75.0
Wages	$388,970	$186,562	([3])	([3])	([3])	105.8			
Children, under 16 years	265	130	12	([3])	([3])	103.8	983.3		
Wages	$53,666	$22,836	([3])	([3])	([3])	135.0			
Miscellaneous expenses	$3,860,455	$2,180,557	([4])	([4])	([4])	77.0			
Cost of materials used	$49,099,182	$19,917,057	$1,967,469	$1,435,128	$502,021	146.5	912.3	37.1	185.9
Value of products, including custom work and repairing	$86,795,051	$41,768,022	$3,250,134	$2,851,052	$1,406,921	107.8	1,185.1	14.0	102.6
Total population	[5]511,584	349,390	75,116	23,955	11,594	46.4	365.1	213.6	106.6
Wage-earners engaged in manufactures	33,806	18,677	1,147	1,026	870	81.0	1,528.3	11.8	17.9
Per cent of total population	6.6	5.3	1.5	4.3	7.5				
Assessed value of real estate	[6]$177,822,995	$177,204,671	$11,335,923	$5,146,776	$1,876,063	0.3	1,463.2	120.3	174.3
Value of land and buildings invested in manufactures[7]	$15,846,854	$12,776,478	([3])	([3])	([3])	24.0			
Per cent of assessed value	8.9	7.2							

[1] Decrease.
[2] Includes proprietors and firm members, with their salaries; number only reported in 1900. (See Table 7.)
[3] Not reported separately.
[4] Not reported.
[5] Exclusive of 6,519 Indians and other persons on Indian reservations, which classes were not included at previous censuses.
[6] As given for the year 1900 in Dana's supplement, "State and City," to the Commercial and Financial Chronicle, under date of April 13, 1901.
[7] Does not include value of rented property.

Table 1 shows the notable growth in the manufacturing and mechanical industries of Washington during the last forty years. The population during these years increased from 11,594 to 511,584, while the average number of wage-earners employed in manufacturing establishments increased from 870 to 33,806, embracing, in 1900, 6.6 per cent of the entire population, compared with 7.5 per cent in 1860. Probably the best indication of the importance of the wage-earning class is afforded by the greatest number employed at any one time during the year. In 1900 this was 52,347, or 10.2 per cent of the total population of the state. Measured by the value of products, the greatest percentage of increase was during the decade ending with the year 1890, although the greatest absolute increase, $45,027,029, was between the years 1890 and 1900. The notable growth of the state in manufactures occurred, therefore, during these two decades. Previously the population increased more rapidly than the number of wage-earners engaged in manufactures.

The state of Washington possesses diversified and extensive natural resources, large navigable rivers and lakes, spacious harbors, including the remarkable Puget Sound basin, and a geographical position which furnishes great commercial advantages. Falls and rapids abound, with great waterpower, the falls at Spokane alone being estimated at 35,000 horsepower.[1] Early industrial development was hindered by lack of transportation facilities, but rapid growth began in 1885, when through railroad communication was established with the older settled parts of the United States. Three transcontinental lines now have their termini at Seattle. In 1897 the discovery of gold in Alaska and in Yukon, and, later, the expanding trade with the Orient, gave new impetus to the industries of the state.

The mineral-bearing deposits of the state are not greatly developed, yet the coal mines in 1899 produced 2,029,881 short tons.[2] The output of gold in 1899 was 33,156 fine ounces, and of silver, 256,000 fine ounces.[3] The largest part of the ore used in lead smelting is brought to Puget Sound

[1] Appleton's Universal Cyclopædia, Vol. XII, page 297.
[2] United States Geological Survey: Mineral Resources, 1899, Metallic Products, Coal, and Coke, page 508.
[3] Ibid., page 127.

from the Cœur d'Alene district in Idaho, that it may meet the fuel and encounter ores carrying the precious metals.[1] Much is imported from British Columbia and Mexico. Of the ore used in copper smelting the greater part is of domestic production.

[1] United States Geological Survey: Mineral Resources, 1899, Metallic Products, Coal, and Coke, page 227.

Table 2 divides the industries of the state between the hand trades and the manufactures proper. This table also gives the statistics for governmental establishments, penal institutions, and establishments with a product of less than $500; these were not reported at previous censuses, and therefore are omitted from the other tables and their use confined to Table 2.

TABLE 2.—SUMMARY FOR ALL ESTABLISHMENTS.

CLASSES.	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	COST OF MATERIALS USED. Total.	COST OF MATERIALS USED. Purchased in raw state.	COST OF MATERIALS USED. Purchased in partially manufactured form.	COST OF MATERIALS USED. Fuel, freight, etc.	Value of products, including custom work and repairing.
Total	3,952	$53,866,322	4,448	34,028	$19,178,659	$3,872,908	$49,253,881	$16,842,307	$30,461,281	$1,950,293	$87,105,242
Hand trades[1]	1,418	2,774,105	1,631	4,973	3,443,882	843,172	5,748,572	369,296	5,202,482	171,794	12,646,361
Governmental establishments	2	851,051		86	66,821		70,509		67,859	2,650	137,330
Penal institutions	4	213,751				2,974	57,899	41,816	4,679	11,404	88,914
Establishments with a product of less than $500	315	151,760	342	136	4,965	9,479	26,291	2,265	24,026		83,947
All other establishments	2,213	49,875,655	2,475	28,833	15,662,991	3,017,283	43,355,610	16,428,930	25,162,235	1,764,445	74,148,690

[1] Includes bicycle and tricycle repairing, 50; blacksmithing and wheelwrighting, 267; boots and shoes, custom work and repairing, 143; carpentering, 209; clothing, men's, custom work and repairing, 159; clothing, women's, dressmaking, 71; dyeing and cleaning, 18; furniture, cabinetmaking, repairing, and upholstering, 37; lock and gun smithing, 21; masonry, brick and stone, 38; millinery, custom work, 89; painting, house, sign, etc., 94; plastering and stuccowork, 18; plumbing, and gas and steam fitting, 79; sewing machine repairing, 1; taxidermy, 2; typewriter repairing, 1; watch, clock, and jewelry repairing, 121.

Of the 3,952 establishments of all classes shown in this table, 1,733, or 43.9 per cent, were small shops included in the groups of "hand trades" and "establishments with a product of less than $500." The value of the products of these establishments, consisting principally of the sums received for custom work and repairing, amounted to $12,730,308, or only 14.6 per cent of the total value of the products of the state.

In addition to the 3,952 active establishments in the state during the census year, with a capital of $53,866,322, shown in Table 2, there were 42 idle establishments, with a capital of $8,479,707, divided as follows:

INDUSTRIES.	Number of idle establishments.	Capital.	INDUSTRIES.	Number of idle establishments.	Capital.
Agricultural implements	1	$50,000	Glass	1	$60,000
Brick and tile	6	29,953	Iron and steel (blast furnace)	1	468,656
Fish, canning and preserving	2	60,800	Lumber and timber products	12	7,714,493
Flouring and grist mill products	2	17,500	Woolen goods	1	50,250
Fruits and vegetables, canning and preserving	12	18,945	All other industries	4	9,110

TABLE 3.—COMPARATIVE SUMMARY OF TEN LEADING INDUSTRIES.

INDUSTRIES.	Year.	Number of establishments.	Capital.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
Total for selected industries for state	1900	1,391	$37,811,584	23,080	$12,445,522	$2,043,117	$30,070,488	$52,769,825
	1890	755	27,663,374	12,836	7,083,157	1,698,177	13,255,159	27,354,282
Increase, 1890 to 1900		636	10,148,210	10,244	5,362,365	344,940	16,815,329	25,415,543
Per cent of increase		84.2	36.7	79.8	75.7	20.3	126.9	92.9
Per cent of total of all industries in state	1900	38.3	71.8	68.3	65.1	52.9	61.2	60.8
	1890	48.9	80.5	68.7	64.3	77.9	66.6	65.5
Cars and general shop construction and repairs by steam railroad companies.	1900	16	944,800	956	653,205	14,264	760,858	1,479,680
	1890	4	272,195	342	278,628	(1)	175,492	461,561
Cheese, butter, and condensed milk, factory product	1900	60	304,178	146	80,935	16,516	932,190	1,190,239
	1890	3	9,850	3	1,050	262	24,475	33,100
Fish, canning and preserving	1900	36	2,222,726	2,190	711,214	285,353	3,086,865	4,831,038
	1890	7	320,790	316	63,820	33,801	346,532	525,000
Flouring and grist mill products	1900	85	2,693,282	488	281,310	167,070	5,803,909	6,875,672
	1890	38	1,140,630	170	97,968	85,764	2,013,304	2,460,809
Foundry and machine shop products	1900	80	1,629,377	1,075	694,675	83,577	970,092	2,257,643
	1890	27	938,780	515	445,632	58,766	559,652	1,347,700
Liquors, malt	1900	25	1,506,762	211	171,456	385,884	294,565	1,230,525
	1890	18	1,328,329	209	176,970	193,186	424,637	1,178,306
Lumber and timber products	1900	778	26,041,089	15,696	8,511,224	748,946	16,455,553	30,286,280
	1890	462	21,400,307	9,491	4,643,564	1,046,753	8,331,336	17,450,301

[1] Not reported.

TABLE 3.—COMPARATIVE SUMMARY OF TEN LEADING INDUSTRIES: 1900—Continued.

INDUSTRIES.	Year.	Number of establishments.	Capital.	WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
				Average number.	Total wages.			
Lumber, planing mill products, including sash, doors, and blinds	1900	29	$762,120	647	$329,396	$66,152	$685,268	$1,257,369
	1890	39	899,765	839	645,942	48,087	1,001,396	2,030,279
Printing and publishing:								
Total	1900	246	1,159,166	930	501,806	242,940	346,143	1,855,730
	1890	145	1,197,108	780	645,078	226,521	309,450	1,678,541
Printing and publishing, book and job	1900	58	363,052	304	186,306	40,034	139,603	534,686
	1890	20	161,926	118	99,711	21,145	75,323	278,477
Printing and publishing, newspapers and periodicals	1900	188	796,114	626	315,500	202,906	206,540	1,321,044
	1890	125	1,035,182	662	545,367	205,376	234,127	1,400,064
Ship and boat building, wooden	1900	36	548,084	741	510,301	32,415	735,050	1,505,649
	1890	17	155,620	171	84,505	5,037	68,885	188,635

The 10 leading industries of the state in 1900, as shown in Table 3, embraced 1,391 establishments, or 38.3 per cent of the total number in the state; used a capital of $37,811,584, or 71.8 per cent of the total; gave employment to 23,080 wage-earners, or 68.3 per cent of the total number; and paid $12,445,522, or 65.1 per cent of the total wages. The value of their products was $52,769,825, or 60.8 per cent of the total. In the discussion of Table 3, which follows, the industries are ranked with reference to the value of their products.

Table 3 shows that the manufacture of lumber and timber products is the most important industry in the state. The 778 establishments reported in 1900 gave employment to 15,696 wage-earners, or 46.4 per cent of the wage-earners in the state, and their products were valued at $30,286,280, or 34.9 per cent of the total value of the products of the state. In 1890 there were 462 establishments, 9,491 wage-earners, and products valued at $17,450,301. The increase in the value of products during the decade was $12,835,979, or 73.6 per cent. A period of special activity marked the close of the decade, 226 establishments having begun operations during the census year. The total stand of merchantable timber in the Puget Sound district, or that part of the state west of the Cascade Mountains, is very large. More than 95 per cent of the entire product of the lumber industry in 1900 was reported from the 19 counties of this section, the center being in King county, where there were 72 establishments, having an aggregate product valued at $5,222,548, or more than one-sixth of the total value of the lumber and timber products of the state. The characteristic products of these mills are red fir lumber and cedar shingles. The first waterpower sawmill was built at Tumwater, about two miles from Olympia, in 1847, and the first logging company was organized at Olympia in 1848.[1] The first steam sawmill in the state was built in 1853, on a site now in the business center of Seattle. The first shingle mill was built in 1854, on McAllister Creek, near the mouth of the Nesqually River.

The manufacture of flouring and grist mill products ranked second among the industries of the state in 1900, with 85 establishments, 488 wage-earners, and products valued at $6,875,672. In 1890 there were 38 establishments, 170 wage-earners, and products valued at $2,460,809. The increase in the value of products during the decade was $4,414,863, or 179.4 per cent. The products in 1900 included 1,868,780 barrels of wheat flour, some of which was exported to China and Japan. Before 1839 Marcus Whitman built a gristmill for his colony at Wallawalla,[2] but the first on Puget Sound did not come into existence until 1846, at the falls of the Deschutes River, about two miles from Olympia.[3]

There were 36 establishments engaged, in 1900, in fish canning and preserving, the industry third in rank, with 2,190 wage-earners, and products valued at $4,831,038. In 1890 there were 7 establishments, 316 wage-earners, and products valued at $525,000. The increase in the value of products during the decade was $4,306,038, or 820.2 per cent. The business of packing and preserving fish, both for domestic use and for sale, began with the settlement of the territory. Salmon and oysters were first shipped to San Francisco in 1850–1851.[4] The waters teemed with fish, and not until the establishment of canneries was there any perceptible decrease in their numbers. The new systems and methods introduced soon depleted the rivers, and in order to restock them the state, in 1895–1896, built its first fish hatchery, on the Kalama River, a tributary of the Columbia.[5] In 1900 the state owned 14 hatcheries, and turned out 57,156,500 young salmon—16,635,500 into the Columbia and 40,521,000 into other rivers.[6]

There were 80 establishments engaged in the manufacture of foundry and machine shop products in 1900, with 1,075 wage-earners, and products valued at $2,257,643. In 1890 there were 27 establishments, 515 wage-earners, and products valued at $1,347,700. The increase in the value of products during the decade was $909,943, or 67.5 per cent. Foundries and machine shops were necessary

[1] Pioneer Days on Puget Sound, by A. A. Denny.

[2] History of Marcus Whitman and the Early Days of Oregon, by Wm. A. Mowry, page 108.

[3] The Works of H. H. Bancroft, Vol. XXXI, page 8.

[4] Marine History of the Pacific Northwest, by Lewis and Dryden, page 32.

[5] Report of Washington Fish Commissioner, 1897–1898.

[6] Ibid., 1899–1900.

adjuncts of sawmills, and some of the early mill companies also made castings for other mills and for steamboats.

There were 246 establishments engaged in printing and publishing in 1900, with 930 wage-earners, and products valued at $1,855,730. In 1890 there were 145 establishments, 780 wage-earners, and products valued at $1,678,541. The increase in the value of products during the decade was $177,189, or 10.6 per cent. The first newspaper published in Washington was The Columbian, established at Seattle, September 11, 1852.

There were 36 establishments engaged in wooden ship and boat building in 1900, with 741 wage-earners, and products valued at $1,505,649. In 1890 there were 17 establishments, 171 wage-earners, and products valued at $188,685. The increase in the value of products during the decade was $1,316,964, or 698 per cent. Ship and boat building, one of the pioneer industries of Washington, was begun at several places in 1853.[1] The first steamboat built in the territory was the Julia Barclay, at Port Blakeley, in 1858.[2] Many kinds of craft, ranging from the launch to the battleship, are now constructed at the Washington shipyards. The Washington fir is said to furnish timber peculiarly adapted to shipbuilding because of its great strength, durability, and excellent texture.

There were 16 establishments engaged in car construction and general shop work of steam railroad companies in 1900, with 956 wage-earners, and products valued at $1,479,680. In 1890 there were 4 establishments, 342 wage-earners, and products valued at $461,561. The increase in the value of products during the decade was $1,018,119, or 220.6 per cent.

There were 29 establishments engaged in the manufacture of planing mill products in 1900, with 647 wage-earners, and products valued at $1,257,369. In 1890 there were 39 establishments, 839 wage-earners, and products valued at $2,030,279. The decrease in the value of products during the decade was $772,910, or 38.1 per cent.

There were 25 establishments engaged in the manufacture of malt liquors in 1900, with 211 wage-earners, and products valued at $1,230,525. In 1890 there were 13 establishments, 209 wage-earners, and products valued at $1,178,306. The increase in the value of products during the decade was $52,219, or 4.4 per cent. The first brewery in the state was built at Steilacoom, Pierce county, in 1854. The beer was brewed in an open 5-barrel kettle suspended from a crane over an open fire. The state produces both barley and hops of a superior quality in quantities sufficient for domestic uses. In 1899 the barley crop was 1,410,360 bushels.[3]

There were 60 establishments engaged in the factory manufacture of cheese, butter, and condensed milk in 1900, with 146 wage-earners, and products valued at $1,190,239. In 1890 there were 3 establishments, 3 wage-earners, and products valued at $33,100. The increase in the value of products during the decade was $1,157,139. The state has good dairying facilities, and there is an increasing demand for butter and cheese, much of which is still supplied by other states. In 1900 the creameries and cheese factories produced 3,198,381 pounds of butter and 1,482,127 pounds of cheese. The first creamery operated continuously in Washington was built at Ridgefield, Clarke county, in 1886.

Slaughtering and meat packing can not be shown in the comparative summary of leading industries, because the figures in 1890 were not published separately. The combined products of the 18 slaughtering and meat packing establishments reported in 1900 amounted to $4,892,857. There are several other important industries the statistics of which can not be shown, because the number of establishments in each is less than 3, and publication of the figures would disclose the operations of individual establishments. These industries include copper smelting and refining, the manufacture of iron and steel, lead smelting and refining, and the manufacture of paper and wood pulp. The paper mills not only supply the local market and the markets of the other Pacific coast states, but export products to Hawaii, Australia, China, and Japan.[4]

URBAN MANUFACTURES.

Table 4 shows the totals for the manufacturing and mechanical industries of the cities of Seattle and Tacoma, as returned at the censuses of 1890 and 1900, with the percentages of increase.

[1] Marine History of the Pacific Northwest, page 53.
[2] Ibid., page 74.
[3] Yearbook of the Department of Agriculture, 1899, page 768.
[4] State of Washington, Its Resources, Natural, Industrial, and Commercial, 1901, page 160.

TABLE 4.—COMPARATIVE SUMMARY, SEATTLE AND TACOMA, 1890 AND 1900, WITH PER CENT OF INCREASE.

	Year.	Number of establishments.	Capital.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
The State	1900	3,631	$52,649,760	33,806	$19,106,873	$3,860,455	$49,099,182	$86,795,051
	1890	1,543	34,369,735	18,677	11,011,894	2,180,557	19,917,057	41,768,022
Per cent of increase		135.3	53.2	81.0	73.5	77.0	146.5	107.8
Seattle	1900	953	10,131,651	8,480	5,575,253	1,479,604	14,211,191	26,373,402
	1890	331	4,758,283	3,768	3,083,731	495,061	4,778,384	10,203,007
Per cent of increase		187.9	112.9	125.1	80.8	198.9	197.4	158.5
Tacoma	1900	381	8,146,691	4,347	2,356,028	461,017	7,389,166	12,029,497
	1890	225	7,227,201	3,658	2,723,235	464,674	5,171,658	10,432,955
Per cent of increase		69.3	12.7	18.8	[1]13.5	[1]0.8	42.9	15.3
Total for 2 cities	1900	1,334	18,278,342	12,827	7,931,281	1,940,621	21,600,357	38,402,899
	1890	556	11,985,484	7,426	5,806,966	959,735	9,950,042	20,635,962
Per cent of increase		139.9	52.5	72.7	36.6	102.2	117.1	86.1
Per cent of 2 cities to total for state	1900	36.7	34.7	37.9	41.5	50.3	44.0	44.2
	1890	36.0	34.9	39.8	52.7	44.1	50.0	49.4

[1] Decrease.

It appears from Table 4 that there has been a large increase during the past decade in the manufactures of these 2 cities. The number of establishments increased from 556 to 1,334, or 139.9 per cent; the average number of wage-earners from 7,426 to 12,827, or 72.7 per cent; and the value of products from $20,635,962 to $38,402,899, or 86.1 per cent.

Seattle, the leading manufacturing city of the state, shows the more rapid growth. The number of establishments increased from 331 to 953, or 187.9 per cent; the average number of wage-earners from 3,768 to 8,480, or 125.1 per cent; and the value of products from $10,203,007 to $26,373,402, or 158.5 per cent. The number of establishments, number of wage-earners, and value of products in this city in 1900 constituted 26.2, 25.1, and 30.4 per cent, respectively, of the totals for the state.

Table 5 presents the totals for the manufacturing industries of the 9 cities withdrawn from the enumerators and places them in comparison with the totals for the entire state and the state exclusive of these cities.

TABLE 5.—URBAN MANUFACTURES.

	Number of establishments.	Capital.	Proprietors and firm members.	WAGE-EARNERS. Average number.	WAGE-EARNERS. Total wages.	Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.
Total for state	3,631	$52,649,760	4,106	33,806	$19,106,873	$3,860,455	$49,099,182	$86,795,051
Total for urban manufactures	1,871	25,453,397	2,026	17,356	10,288,488	2,820,343	29,085,867	51,219,242
Dayton	47	274,665	50	69	40,645	13,947	430,941	573,516
Everett	84	1,681,549	83	900	509,009	168,022	1,820,523	2,803,382
Fairhaven	30	1,163,291	30	1,026	287,493	161,803	1,044,609	1,699,015
New Whatcom	71	448,219	75	359	195,394	31,345	298,237	643,931
Seattle	953	10,131,651	1,071	8,480	5,575,253	1,479,604	14,211,191	26,373,402
Snohomish	22	137,625	23	130	73,182	15,976	316,052	484,446
Spokane	213	2,678,823	225	1,779	1,080,618	414,526	2,854,463	5,427,540
Tacoma	381	8,146,691	385	4,347	2,356,028	461,017	7,389,166	12,029,497
Wallawalla	70	790,883	84	266	170,866	74,103	725,685	1,184,513
Total for state exclusive of urban manufactures	1,760	27,196,363	2,080	16,450	8,818,385	1,040,112	20,013,315	35,575,809
Per cent of urban manufactures to total for state	51.5	48.3	49.3	51.3	53.8	73.1	59.2	59.0

Of the 3,631 establishments in the state, 1,871, or 51.5 per cent, were located in these 9 cities. They furnished employment to 17,356 wage-earners, or 51.3 per cent of the total number, and the value of their products, $51,219,242, formed 59 per cent of the total for the state.

Table 6 shows the totals for the state by counties.

Table 7 shows the totals for the state by specified industries.

Table 8 shows the totals for the cities of Seattle, Spokane, and Tacoma by specified industries.

Table 9 shows the totals for the cities withdrawn from the enumerators, exclusive of those shown in Table 8.

TABLE 6.—MANUFACTURES

[No manufactures reported

	COUNTIES AND MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
1	The State	3,631	$52,649,760	$10,504,214	$5,342,640	$15,563,736	$21,239,170	4,106	2,242	$2,164,024	33,806	$19,106,873
2	Adams[1]	7	35,755	1,375	4,250	12,880	17,250	8	------	------	15	7,700
3	Asotin	10	81,530	25,290	6,315	14,375	35,550	14	------	------	24	9,700
4	Chehalis	163	4,107,531	989,906	223,895	1,237,116	1,656,614	206	84	96,337	2,716	1,416,243
5	Clallam	34	267,814	56,150	20,200	93,985	97,479	38	11	11,265	291	126,812
6	Clarke	89	904,526	75,172	185,050	406,584	237,720	117	16	16,270	385	184,135
7	Columbia	55	400,055	26,700	73,265	81,690	218,400	60	13	11,880	135	83,233
8	Cowlitz	62	1,040,863	442,420	24,370	334,949	239,124	80	20	17,884	533	277,203
9	Douglas	7	19,475	1,120	2,525	5,300	10,530	9	------	------	4	2,544
10	Ferry	16	72,065	7,200	8,400	25,145	31,320	22	1	600	37	30,730
11	Garfield	5	36,660	7,275	1,900	9,635	17,850	6	------	------	11	6,155
12	Island	22	140,375	29,465	2,475	42,890	65,545	33	10	6,170	201	102,168
13	Jefferson	49	938,140	299,430	109,438	286,940	292,332	52	25	13,630	428	211,632
14	King	1,061	12,482,206	2,019,027	790,163	3,659,539	6,013,477	1,176	850	764,362	10,175	6,444,655
15	Kitsap	18	2,407,896	732,748	182,460	803,992	738,696	18	41	38,029	1,045	479,564
16	Kittitas	90	289,528	110,075	23,819	85,291	70,343	102	5	2,500	147	75,768
17	Klickitat	22	129,415	22,770	19,790	44,915	41,940	33	4	4,100	45	19,205
18	Lewis	119	1,269,354	330,973	185,170	355,674	397,537	132	44	37,902	756	376,639
19	Lincoln	54	451,181	23,735	48,720	137,337	241,389	67	15	14,028	83	46,686
20	Mason	24	1,519,102	625,099	35,455	415,935	442,613	18	34	44,380	1,315	939,014
21	Okanogan	11	59,286	8,265	6,400	23,365	21,256	14	5	2,880	33	20,143
22	Pacific	49	609,797	75,603	97,940	174,094	262,160	57	20	18,010	413	203,312
23	Pierce	455	8,515,365	1,576,666	1,063,798	2,224,369	3,650,537	473	304	337,160	4,791	2,569,842
24	San Juan	11	521,442	240,549	52,037	97,618	131,238	6	23	19,259	159	65,916
25	Skagit	90	2,058,380	667,739	189,690	675,571	525,380	97	63	66,050	1,212	652,869
26	Skamania	12	100,497	31,970	2,625	42,733	23,169	15	2	1,066	51	26,554
27	Snohomish	197	3,779,487	537,791	550,761	1,289,660	1,401,275	236	131	134,905	2,300	1,335,814
28	Spokane	283	8,435,531	222,225	598,640	1,239,956	1,374,710	315	276	250,835	2,039	1,197,845
29	Stevens	40	356,125	31,880	99,885	75,800	148,560	42	16	29,180	265	222,948
30	Thurston	86	1,342,289	571,745	78,270	299,815	892,459	104	41	41,555	565	300,701
31	Wahkiakum	23	545,627	111,800	39,775	150,935	243,117	31	39	28,790	267	144,893
32	Wallawalla	88	967,774	115,730	195,775	195,557	460,712	103	26	26,883	293	186,764
33	Whatcom	190	3,049,356	394,458	363,389	844,410	1,447,099	207	107	112,504	2,751	1,181,420
34	Whitman	136	577,632	68,614	80,405	182,627	245,986	156	9	8,460	223	105,678
35	Yakima	53	137,701	23,249	25,595	43,054	45,803	59	7	7,150	98	52,388

[1] One establishment in Franklin county included in Adams county to avoid disclosing operations of individual establishments.

TABLE 7.—MANUFACTURES BY

1	All industries	3,631	$52,649,760	$10,504,214	$5,342,640	$15,563,736	$21,239,170	4,106	2,242	$2,164,024	33,806	$19,106,873
2	Awnings, tents, and sails	10	52,889	40	75	6,250	46,524	10	13	8,290	52	34,045
3	Bicycle and tricycle repairing	50	66,141	2,100	4,900	21,660	37,481	60	6	3,760	55	33,320
4	Blacksmithing and wheelwrighting	267	298,830	35,160	50,880	79,520	133,270	315	2	1,440	219	144,223
5	Bookbinding and blank book making	3	26,107	------	------	11,700	14,407	3	5	3,500	21	9,451
6	Boots and shoes, custom work and repairing.	143	54,545	3,075	4,715	22,015	24,740	145	------	------	31	17,007
7	Boots and shoes, factory product	3	71,071	------	------	14,715	56,356	2	15	12,060	75	31,461
8	Bottling	3	219,036	13,000	31,000	21,150	144,886	8	11	15,240	68	28,900
9	Boxes, fancy and paper	3	17,650	------	------	9,000	8,650	4	2	1,000	10	2,560
10	Boxes, wooden packing	6	50,015	1,200	3,800	23,451	21,564	4	2	800	71	28,773
11	Bread and other bakery products	65	157,475	21,420	32,550	43,005	60,500	73	31	19,072	202	119,767
12	Brick and tile	32	370,325	100,662	98,150	74,984	96,529	29	27	27,520	329	185,834
13	Bridges	8	425,222	34,000	10,050	179,644	201,528	12	25	19,900	856	490,912
14	Brooms and brushes	7	33,700	1,850	6,050	3,050	22,750	10	2	1,800	37	17,810
15	Carpentering	209	580,540	60,950	43,750	81,472	394,368	241	22	27,000	1,955	1,374,180
16	Carriages and wagons	28	101,260	3,600	19,525	16,687	61,448	37	8	8,800	134	90,061
17	Cars and general shop construction and repairs by steam railroad companies.	16	944,800	194,820	313,270	243,176	193,534	------	55	51,358	956	653,205
18	Cars and general shop construction and repairs by street railroad companies.	3	511,000	13,000	54,500	122,500	321,000	------	10	12,380	145	105,492
19	Cheese, butter, and condensed milk, factory product.	60	304,178	30,303	41,755	104,259	127,861	56	35	27,159	146	80,935
20	Clothing, men's, custom work and repairing.	159	248,225	12,900	13,825	22,252	199,248	185	20	20,080	511	324,734
21	Clothing, women's, dressmaking	71	65,997	300	500	7,803	57,394	84	6	4,788	243	78,514
22	Clothing, women's, factory product	9	25,700	------	------	1,400	24,300	25	5	2,100	33	13,400
23	Coffee and spice, roasting and grinding	14	138,359	700	1,000	25,965	110,694	16	21	23,710	41	22,626
24	Confectionery	27	188,183	9,000	15,931	35,482	127,770	26	42	47,337	228	90,865
25	Cooperage	6	16,030	3,375	3,600	3,650	5,405	13	2	1,200	39	11,757
26	Dyeing and cleaning	18	13,670	4,500	1,700	4,705	2,765	21	1	420	37	17,670

BY COUNTIES: 1900.

from Chelan county.]

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
32,325	$18,669,237	1,216	$383,970	265	$53,666	$3,860,455	$518,679	$309,001	$2,411,529	$621,246	$49,099,182	$48,397,082	$702,100	$86,795,051	1
15	7,700					2,721	84	497	2,140		78,560	77,665	895	101,827	2
23	9,400			1	300	1,488	391	702	395		45,400	44,815	585	77,760	3
2,677	1,406,467	32	7,986	7	1,790	75,211	6,824	17,299	47,713	3,875	2,904,128	2,897,842	6,286	4,749,278	4
267	123,178	14	2,420	10	1,214	11,895	1,498	2,120	7,777		220,002	218,962	1,040	462,595	5
365	179,405	10	2,770	10	1,960	51,700	4,985	2,683	42,632	1,400	486,437	461,451	24,986	927,606	6
131	82,353	4	880			18,638	3,944	3,559	10,635	500	562,801	558,146	4,655	769,395	7
530	276,203	3	1,000			12,141	383	7,482	4,276		870,815	870,127	688	845,943	8
4	2,544					326	24	172	130		17,218	16,685	533	27,720	9
33	29,630	2	900	2	200	11,627	1,115	338	10,174		48,674	47,639	1,035	141,172	10
11	6,155					2,564	180	426	1,958		44,790	44,680	110	65,907	11
200	102,064			1	104	2,395	60	663	1,672		92,755	92,533	222	256,626	12
423	210,447	5	1,185			33,453	3,928	5,833	23,408	284	773,380	769,662	3,718	1,161,246	13
9,527	6,231,810	568	196,109	80	16,736	1,583,765	250,892	59,520	774,386	498,967	15,884,213	15,691,269	192,944	29,843,908	14
1,044	479,468			1	96	64,712	1,080	14,587	49,020	25	1,377,700	1,374,052	3,648	2,107,576	15
138	78,740	6	1,500	3	528	20,170	5,322	2,612	11,766	470	328,793	323,999	4,794	531,626	16
43	18,755	1	300	1	150	3,869	260	1,117	2,382	110	96,372	96,028	344	162,773	17
744	374,374	7	1,610	5	655	47,215	4,855	6,475	35,885		929,752	922,414	7,338	1,678,870	18
78	44,856	4	1,710	1	120	24,857	2,481	2,887	18,489	1,000	651,231	627,226	24,005	839,661	19
1,311	937,712	8	1,152	1	150	48,814	1,295	18,982	28,485	52	764,310	763,248	1,062	2,064,839	20
32	19,893	1	250			1,189	25	449	665		47,837	47,642	195	85,955	21
407	202,198			6	1,114	25,078	2,266	3,867	15,889	3,056	578,791	576,716	2,075	952,195	22
4,534	2,496,055	216	63,861	41	9,926	472,252	72,824	47,572	334,551	17,305	7,856,785	7,728,606	128,179	12,782,202	23
159	65,916					21,725	2,452	1,388	17,885		95,678	81,057	14,621	241,593	24
1,187	646,949	18	5,300	7	620	110,385	3,125	14,205	81,055	12,000	1,285,170	1,272,306	12,864	2,598,650	25
51	26,554					1,786	180	736	870		23,572	23,562	10	67,886	26
2,242	1,320,691	33	9,105	25	6,018	272,984	14,431	17,796	240,347	410	3,268,906	3,166,845	102,061	5,650,314	27
1,887	1,150,735	150	46,774	2	336	430,412	81,915	21,493	245,837	81,167	3,625,533	3,548,389	77,144	6,424,337	28
262	222,298	2	600	1	50	13,101	976	4,348	7,777		1,010,746	991,325	19,421	1,353,385	29
539	292,099	16	6,738	10	1,864	75,996	5,676	5,648	64,672		678,693	673,553	5,140	1,375,213	30
264	144,517	2	256	1	120	10,609	115	2,857	7,637		285,163	283,093	2,070	521,325	31
280	180,885	9	4,539	4	1,340	91,751	14,638	8,280	68,383	450	900,756	886,599	14,157	1,418,107	32
2,620	1,153,555	90	20,130	41	7,735	256,510	17,766	23,101	215,568	75	3,007,940	2,983,709	24,231	5,264,661	33
208	100,964	12	4,294	3	420	37,661	8,130	7,688	21,743	100	510,960	494,043	16,917	850,732	34
89	49,667	8	2,601	1	120	22,005	5,059	1,619	15,327		245,321	241,194	4,127	392,168	35

SPECIFIED INDUSTRIES: 1900.

32,325	$18,669,237	1,216	$383,970	265	$53,666	$3,860,455	$518,679	$309,001	$2,411,529	$621,246	$49,099,182	$48,397,082	$702,100	$86,795,051	1
32	25,911	18	7,634	2	500	7,489	3,993	365	3,131		121,595	120,700	895	208,901	2
53	32,875	1	182	1	263	16,104	10,081	609	5,414		53,810	52,109	1,701	153,315	3
219	144,223					22,608	13,919	2,801	5,788	100	221,573	197,915	23,658	652,374	4
8	5,930	10	2,934	3	587	1,197	750	118	329		10,089	9,699	390	38,154	5
31	17,007					13,165	10,553	379	2,143	90	53,754	52,796	958	159,440	6
50	23,990	22	7,011	3	460	14,937	2,958	206	11,773		102,599	101,804	795	166,423	7
56	25,825	10	2,600	2	475	26,081	1,476	980	23,625		419,724	417,839	1,885	563,179	8
2	900	8	1,660			874	535	10	329		4,652	4,592	60	9,360	9
59	24,917	6	1,764	6	2,092	3,709	965	353	1,619	772	62,214	60,568	1,646	120,905	10
174	112,341	20	5,210	8	2,216	31,414	20,396	1,494	9,524		320,494	309,843	10,651	654,316	11
324	184,674	1	600	4	560	29,339	2,998	2,375	14,966	9,000	81,206	10,617	70,589	426,553	12
856	490,912					73,167	1,144	902	69,821	1,300	391,392	385,942	5,450	1,102,545	13
34	17,050	1	480	2	280	2,407	768	245	1,394		45,988	45,594	394	90,550	14
1,955	1,374,180					338,684	13,677	2,517	35,503	286,987	2,187,815	2,183,548	4,267	4,635,270	15
132	89,153			2	908	9,724	5,438	816	2,820	650	112,039	107,132	4,907	289,068	16
955	652,780	1	425			14,264	230	11,614	2,420		760,858	737,054	23,804	1,479,680	17
145	105,492					40,720	800	5,336	24,584	10,000	152,353	149,153	3,200	310,945	18
127	76,115	16	4,495	3	325	16,516	4,615	1,904	9,997		932,190	919,281	12,909	1,190,239	19
416	289,350	95	35,384			69,105	51,054	2,356	14,235	1,460	367,896	364,305	3,591	991,848	20
13	8,200	230	70,314			15,421	12,055	144	3,222		102,297	101,485	812	268,688	21
31	12,680	2	720			4,188	2,956	102	1,130		39,800	39,735	65	93,694	22
31	18,886	8	3,092	2	648	12,050	5,990	591	5,304	165	300,812	297,563	3,249	388,496	23
116	60,583	111	30,162	1	120	21,513	9,830	1,136	10,547		307,975	300,903	7,072	592,574	24
39	11,757					961	114	150	697		11,768	11,768		33,396	25
25	13,822	11	3,728	1	120	4,083	2,940	88	1,055		6,171	4,532	1,639	80,678	26

TABLE 7.—MANUFACTURES BY

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
27	Electrical construction and repairs	7	$71,050			$12,650	$58,400	10	8	$10,000	29	$27,560
28	Engraving, steel, including plate printing.	5	7,650			4,750	2,900	7			3	1,876
29	Fish, canning and preserving	36	2,222,726	$118,288	$284,804	457,473	1,362,161	36	116	93,117	2,190	711,214
30	Flavoring extracts	3	15,090			2,505	12,585	3	4	1,700	6	1,000
31	Flouring and grist mill products	85	2,693,282	180,715	379,052	645,677	1,487,838	75	107	123,198	488	281,310
32	Foundry and machine shop products	80	1,629,377	127,432	154,218	643,847	703,880	86	89	82,945	1,075	694,675
33	Fruits and vegetables, canning and preserving.	18	78,627	1,394	11,000	10,177	56,056	13	4	4,250	44	12,484
34	Fur goods	6	41,425			2,325	39,100	6	3	1,400	35	14,614
35	Furniture, cabinetmaking, repairing, and upholstering.	37	301,547	14,300	36,200	36,290	214,757	39	11	11,860	207	97,932
36	Furniture, factory product	12	227,250	24,200	61,500	39,270	102,280	15	20	14,018	218	94,324
37	Gas, illuminating and heating	6	1,620,992	215,504	51,963	1,288,687	64,838		37	25,526	81	42,048
38	Gloves and mittens	3	8,250			1,700	6,550	2	3	720	15	6,300
39	Hand stamps	5	11,665			8,115	3,550	5			8	3,696
40	Ice, artificial	4	252,360	46,000	32,000	133,500	40,860	1	13	13,750	35	25,700
41	Jewelry	5	26,405			10,905	15,500	4	2	1,200	33	25,670
42	Leather, tanned, curried, and finished	3	17,600	1,000	2,500	1,600	12,500	6			3	2,125
43	Lime and cement	5	460,586	236,314	52,040	74,644	97,588		22	20,375	156	70,428
44	Liquors, malt	25	1,506,762	147,750	458,689	343,461	556,862	19	53	81,830	211	171,456
45	Lithographing and engraving	3	115,100			95,000	20,100	1	6	5,500	53	29,785
46	Lock and gun smithing	21	20,125	2,150	5,050	6,870	6,055	27			13	8,842
47	Looking-glass and picture frames	9	19,525			1,825	17,700	12			22	11,306
48	Lumber and timber products	778	26,041,089	8,195,054	1,765,419	7,464,933	8,615,683	978	674	668,255	15,696	8,511,224
49	Lumber, planing mill products, including sash, doors, and blinds.	29	762,120	40,754	63,341	184,075	473,950	22	57	59,860	647	329,390
50	Marble and stone work	10	108,774	70,200	4,270	10,452	23,852	13	8	6,540	56	33,648
51	Masonry, brick and stone	38	403,846	3,510	3,940	61,094	335,302	46	3	4,500	625	542,452
52	Mattresses and spring beds	5	38,750		500	7,300	30,950	7	4	5,000	84	38,707
53	Millinery, custom work	89	150,927	2,325	10,945	6,270	131,387	96	27	10,682	169	59,189
54	Mineral and soda waters	21	89,314	6,748	11,399	42,287	28,885	29	8	6,564	44	18,868
55	Models and patterns	3	1,865			1,155	710	3				
56	Monuments and tombstones	10	55,805	1,350	2,610	3,200	48,645	15	5	3,000	36	24,235
57	Optical goods	5	12,250			1,650	10,600	7			4	3,075
58	Oysters, canning and preserving	3	9,800			5,300	4,500	5	2	1,400	24	12,070
59	Painting, house, sign, etc	94	121,780	2,650	4,560	16,455	98,115	117	21	12,740	357	276,896
60	Paints	3	65,932	5,500	31,000	6,822	22,610	2	4	4,620	10	6,770
61	Patent medicines and compounds	7	16,029			2,625	13,404	6	4	3,737	34	22,070
62	Paving and paving materials	6	126,825		500	36,625	89,700	6	2	3,000	215	107,724
63	Photography	72	81,530	1,605	5,275	41,100	33,550	83	5	4,264	98	53,607
64	Pickles, preserves, and sauces	3	38,345			775	37,570	4	2	1,500	23	9,863
65	Plastering and stuccowork	18	20,125			5,060	15,065	20			139	135,244
66	Plumbing, and gas and steam fitting	79	239,037	9,825	6,625	33,929	188,658	97	17	12,020	313	259,166
67	Pottery, terra cotta, and fire-clay products.	8	436,560	52,329	195,398	77,726	111,107	8	15	17,900	126	59,928
68	Printing and publishing, book and job	58	363,052	6,540	5,210	250,814	100,488	63	39	37,059	304	186,306
69	Printing and publishing, newspapers and periodicals.	188	796,114	16,315	23,565	517,523	238,711	192	217	175,974	626	315,500
70	Roofing and roofing materials	3	33,920	900	435	4,036	28,549	3	5	4,832	21	9,276
71	Saddlery and harness	89	297,462	18,125	35,510	25,548	218,279	90	13	11,740	102	65,810
72	Saws	3	37,105	1,798	3,000	8,120	24,187	1	2	1,750	19	13,378
73	Ship and boat building, wooden	36	548,084	106,660	80,200	110,375	250,849	39	22	27,572	741	510,301
74	Shirts	4	4,050			1,100	2,950	6			14	4,568
75	Show cases	3	1,750			500	1,250	3			1	306
76	Slaughtering and meat packing, wholesale.	14	941,786	88,100	127,500	125,942	650,244	15	79	73,328	209	135,896
77	Slaughtering, wholesale, not including meat packing.	4	72,300	12,100	13,900	5,300	41,000	3	9	7,788	22	20,635
78	Soap and candles	4	18,900	250	750	6,800	11,100	1	7	6,840	19	8,145
79	Tinsmithing, coppersmithing, and sheet-iron working.	69	490,788	15,335	44,010	94,332	337,106	81	22	22,705	283	189,055
80	Tobacco, cigars and cigarettes	57	88,724	3,010	7,475	6,275	71,964	60	4	2,320	133	68,855
81	Umbrellas and canes	4	12,625			775	11,850	7			6	3,617
82	Vinegar and cider	4	22,400	1,450	5,000	8,150	7,800	7			5	2,475
83	Watch, clock, and jewelry repairing	121	185,130	24,250	26,650	47,805	86,425	134			96	73,073
84	Window shades	3	42,200			1,000	41,200	7	7	5,500	10	6,940
85	Wood, turned and carved	6	11,080	500	650	6,400	3,530	8	1	500	20	13,800
86	All other industries[1]	77	3,542,250	206,034	582,461	1,333,342	1,420,413	76	91	127,936	1,061	627,963

[1] Embraces agricultural implements, 2; ammunition, 1; artificial limbs, 1; babbitt metal and solder, 1; baking and yeast powders, 1; belting and hose, leather, 1; boxes, cigar, 2; carpets, rag, 2; carriage and wagon materials, 1; china decorating, 2; clothing, men's, factory product, 1; coffins, burial cases, and undertakers' goods, 2; coke, 2; copper, smelting and refining, 1; cutlery and edge tools, 2; drug grinding, 1; electroplating, 2; enameling and enameled goods, 1; engraving and diesinking, 1; engraving, wood, 1; fancy articles, not elsewhere specified, 1; fertilizers, 1; food preparations, 1; gas and lamp fixtures, 2; hairwork, 2; hand knit goods, 1; hats and caps, not including fur hats and wool hats, 1; instruments, professional and scientific, 1; iron and steel, 1; ironwork, architectural and

SPECIFIED INDUSTRIES: 1900—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
29	$27,560					$6,407	$4,755	$147	$1,405	$100	$136,142	$135,370	$772	$213,400	27
2	1,614			1	$262	1,142	625	26	491		2,423	2,313	110	10,649	28
2,086	693,480	73	$13,730	31	4,004	285,353	6,989	20,619	242,689	15,056	3,086,865	3,053,568	33,297	4,831,038	29
2	500	4	500			560	402	28	130		4,830	4,805	25	10,055	30
474	278,450	12	2,400	2	460	167,070	10,017	16,551	137,922	2,580	5,803,909	5,739,212	64,697	6,875,672	31
1,069	693,115	1	360	5	1,200	83,577	13,504	7,365	60,858	1,850	970,092	922,996	47,096	2,257,643	32
15	5,830	24	5,675	5	970	2,677	1,130	302	1,245		24,781	23,227	1,554	63,141	33
8	5,374	27	9,240			7,528	5,530	369	879	750	39,874	39,724	150	83,486	34
204	96,882	2	950	1	100	25,590	7,614	2,822	13,554	1,600	225,265	222,300	2,965	456,394	35
199	91,338	8	2,056	6	930	21,860	2,800	3,111	15,949		183,967	180,501	3,466	412,613	36
81	42,048					81,097		9,901	71,196		76,929	76,630	299	315,993	37
8	4,000	7	2,300			629	480	39	110		9,735	9,690	45	24,685	38
3	2,340	4	1,200	1	156	1,930	965	71	894		3,503	3,458	45	14,570	39
35	25,700					10,735	1,500	1,285	7,950		17,318	4,956	12,362	103,600	40
32	25,540			1	180	3,866	2,424	250	1,192		42,525	40,560	1,965	89,748	41
3	2,125					580	130	170	280		25,701	25,480	221	82,605	42
154	69,823	2	600			17,466		1,557	15,909		75,694	58,244	17,450	213,538	43
210	171,206			1	250	385,884	2,022	9,681	374,181		294,565	260,318	34,247	1,230,525	44
51	29,060	2	725			2,970	2,160	170	640		24,909	24,145	764	70,086	45
13	8,842					3,899	2,990	160	749		10,345	9,936	409	38,296	46
19	10,306	3	1,000			4,130	3,350	105	675		29,475	29,345	130	62,400	47
15,603	8,483,203	50	16,412	43	11,609	748,946	25,932	144,748	578,266		16,455,553	16,453,657	1,896	30,286,280	48
640	328,192	4	588	3	616	66,152	6,930	4,671	54,551		685,263	679,474	5,789	1,257,369	49
55	38,336			1	312	3,379	581	533	1,635	680	26,403	24,953	1,450	130,250	50
625	542,452					203,688	2,490	514	15,464	185,220	1,162,810	1,158,566	4,244	2,228,999	51
72	34,528	8	3,350	4	829	3,358	1,940	876	1,042		74,790	73,645	1,145	151,800	52
2	1,560	167	57,629			30,502	21,374	1,428	7,575	125	249,378	248,393	985	454,307	53
39	17,739	1	195	4	934	10,924	2,228	462	8,234		60,971	59,103	1,868	154,069	54
						138	133		5		450	440	10	2,470	55
36	24,235					5,238	1,514	343	1,781	1,600	46,755	46,475	280	122,700	56
3	2,475	1	600			3,409	1,490	24	1,895		7,877	7,677	200	17,605	57
22	11,550	2	520			1,249	610	41	598		38,061	37,901	160	65,980	58
357	276,896					30,709	16,220	1,038	10,496	2,955	271,702	271,084	618	770,408	59
9	6,620	1	150			1,082	463	140	479		31,436	30,991	445	57,500	60
29	20,690	5	1,380			5,074	1,526	89	3,459		12,973	12,874	99	60,565	61
212	106,788			3	936	13,568	920	148	3,450	9,050	87,278	82,753	4,525	306,980	62
54	35,288	44	18,319			26,772	18,724	703	7,345		106,147	105,388	759	296,791	63
12	6,983	11	2,880			2,478	900	232	1,346		87,991	87,631	360	129,698	64
139	135,244					8,857	986	96	1,775	6,000	100,812	100,766	46	302,010	65
312	259,034			1	182	34,287	14,762	1,345	12,330	5,850	644,099	640,723	3,376	1,158,855	66
124	59,612			2	316	7,599	225	2,156	5,218		29,392	14,295	15,097	157,304	67
250	168,895	41	14,933	13	2,478	40,034	20,785	2,314	14,537	2,398	139,603	133,584	6,019	534,686	68
535	291,216	50	18,924	41	5,360	202,906	32,246	4,518	111,018	55,124	206,540	190,682	15,858	1,321,044	69
21	9,276					1,574	60	95	1,419		27,108	26,898	210	78,900	70
100	65,102	1	600	1	108	31,528	15,533	3,440	11,555	1,000	285,988	284,197	1,791	513,825	71
19	13,378					3,752	900	144	2,708		21,945	20,600	1,345	54,733	72
732	508,051			9	2,250	32,415	4,379	2,317	20,265	5,454	735,050	728,674	6,376	1,505,649	73
1	230	13	4,338			2,970	900	10	260	1,800	7,697	7,612	85	20,700	74
1	306					430	303	6	121		2,456	2,450	6	5,620	75
207	134,996	2	900			66,156	9,033	3,804	53,319		3,736,658	3,726,222	10,436	4,293,953	76
22	20,635					13,852	1,390	480	11,982		515,777	513,312	2,465	598,904	77
13	6,150	1	870	5	1,125	8,869	1,446	223	7,200		66,646	62,736	3,910	105,140	78
249	181,573	19	4,650	15	2,832	37,365	13,667	3,311	19,687	700	505,339	501,420	3,919	943,220	79
117	64,757	9	2,646	7	1,452	38,936	9,213	508	29,215		126,910	126,434	476	293,339	80
5	3,420	1	197			1,659	1,404	84	171		8,170	8,170		26,617	81
5	2,475					1,076	216	110	750		9,461	8,883	578	24,150	82
91	71,685	4	1,288	1	100	25,785	18,053	1,484	5,538	710	83,147	81,875	1,272	287,446	83
9	6,660	1	280			2,476	1,380	326	770		55,050	55,050		86,289	84
20	13,800					2,167	795	60	1,312		10,606	9,951	655	36,026	85
1,003	610,512	40	13,190	18	4,261	234,426	17,456	14,360	192,490	10,120	4,114,979	3,918,288	196,691	5,841,642	86

ornamental, 2; lead, smelting and refining, 2; leather goods, 1; malt, 2; musical instruments and materials, not specified, 1; nets and seines, 1; paper and wood pulp, 2; photolithographing and photoengraving, 1; refrigerators, 1; rice, cleaning and polishing, 2; sausage, 1; sewing machine repairing, 1; shipbuilding, iron and steel, 1; stationery goods, not elsewhere specified, 1; steam fittings and heating apparatus, 1; steam packing, 1; stencils and brands, 1; stereotyping and electrotyping, 1; sugar and molasses, beet, 1; sugar and molasses, refining, 1; surgical appliances, 1; taxidermy, 2; tools, not elsewhere specified, 1; trunks and valises, 2; typewriter repairing, 1; upholstering materials, 2; wirework, including wire rope and cable, 1; wood, preserving, 2; wool pulling, 1.

TABLE 8.—MANUFACTURES IN CITIES

SEATTLE.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
1	All industries	953	$10,131,651	$1,440,701	$597,024	$3,030,039	$5,063,887	1,071	768	$684,662	8,480	$5,575,253
2	Awnings, tents, and sails	4	30,724			2,900	27,824	4	12	8,130	34	24,495
3	Bicycle and tricycle repairing	9	19,755		1,000	5,650	13,105	12	3	1,960	14	9,720
4	Blacksmithing and wheelwrighting	12	11,550		575	2,275	8,700	17	1	600	13	11,529
5	Boots and shoes, custom work and repairing.	51	12,715	200	905	5,560	6,050	52			12	6,755
6	Bottling	4	180,136	5,000	22,000	19,300	133,836	2	11	15,240	59	23,440
7	Boxes, fancy and paper	3	17,650			9,000	8,650	4	2	1,000	10	2,560
8	Bread and other bakery products	25	63,325	6,300	7,700	19,260	30,065	27	11	6,480	95	64,132
9	Brick and tile	3	134,158	51,900	40,000	20,519	21,739	1	10	10,700	89	54,239
10	Bridges	6	375,222	84,000	10,050	172,144	159,028	8	25	19,900	801	474,912
11	Carpentering	137	470,122	55,000	33,300	55,677	326,145	156	20	24,720	1,372	1,032,346
12	Carriages and wagons	10	42,050		14,000	7,650	20,400	14	7	7,600	72	47,450
13	Cheese, butter, and condensed milk, factory product.	3	38,500	1,500	3,500	11,900	21,600	4	1	1,200	21	12,660
14	Clothing, men's, custom work and repairing.	62	93,750	900	1,200	9,085	82,565	73	15	15,040	269	170,952
15	Clothing, women's, dressmaking	35	16,900			4,600	12,300	39	1	600	123	40,907
16	Clothing, women's, factory product	7	18,350			1,050	17,300	23	5	2,100	26	9,920
17	Coffee and spice, roasting and grinding	12	121,580			22,065	99,515	15	20	22,510	36	20,334
18	Confectionery	13	98,125			18,775	79,350	12	30	36,962	153	65,337
19	Dyeing and cleaning	7	7,595	3,900	900	2,160	635	9	1	420	17	9,518
20	Electrical construction and repairs	5	68,000			11,800	56,200	9	8	10,000	22	23,760
21	Fish, canning and preserving	7	336,620	30,000	12,500	61,000	233,120	10	33	25,380	259	106,334
22	Flouring and grist mill products	6	469,802	40,000	28,500	95,650	305,652	1	23	22,180	73	43,524
23	Foundry and machine shop products	34	624,345	43,880	38,850	236,200	305,415	33	46	38,715	425	319,534
24	Fur goods	4	37,650			2,150	35,500	4	2	900	23	9,970
25	Furniture, cabinetmaking, repairing, and upholstering.	13	56,300	12,000	25,000	1,895	17,405	17	5	4,060	10	7,210
26	Furniture, factory product	8	71,500	2,000	6,000	13,370	50,130	12	10	3,998	66	38,175
27	Jewelry	3	21,905			8,905	13,000	2	2	1,200	28	21,980
28	Lock and gun smithing	4	2,400			950	1,450	3			5	2,750
29	Looking-glass and picture frames	4	7,125			925	6,200	4			17	8,870
30	Lumber and timber products	14	1,904,875	664,650	136,000	561,100	543,125	7	65	59,120	1,011	589,067
31	Lumber, planing mill products, including sash, doors, and blinds.	5	52,200	1,400	500	23,500	26,800	2	10	9,000	103	68,100
32	Marble and stone work	3	16,120	9,000	1,020	1,450	4,650	4			5	5,150
33	Masonry, brick and stone	33	398,315	2,510	3,040	59,865	332,900	40	3	4,500	585	519,432
34	Mattresses and spring beds	3	24,500		500	4,500	19,500	4	3	3,800	57	28,329
35	Millinery, custom work	19	56,780			2,240	54,540	21	16	5,890	75	34,271
36	Mineral and soda waters	3	33,294	2,463	2,649	17,387	10,795	4	6	4,800	9	4,395
37	Monuments and tombstones	3	27,675		1,200	1,100	25,375	5			16	13,505
38	Optical goods	4	11,450			1,450	10,000	5			4	3,075
39	Oysters, canning and preserving	3	9,800			5,300	4,500	5	2	1,400	24	12,070
40	Painting, house, sign, etc	60	76,465		1,500	11,035	63,930	75	19	11,780	246	202,693
41	Paving and paving materials	4	49,825			30,625	19,200	4	2	3,000	120	71,288
42	Photography	18	25,450			10,700	14,750	17	4	3,744	56	34,131
43	Plastering and stuccowork	14	19,385			4,585	14,800	16			127	126,644
44	Plumbing, and gas and steam fitting	26	63,565		400	8,965	54,200	42	3	1,840	110	109,044
45	Printing and publishing, book and job	22	164,738			107,646	57,092	20	23	20,149	161	98,230
46	Printing and publishing, newspapers and periodicals.	40	285,590			173,651	111,939	34	125	103,193	279	133,255
47	Saddlery and harness	8	21,910			5,510	16,400	6	6	4,500	26	18,450
48	Ship and boat building, wooden	12	237,925	87,500	13,750	49,075	87,600	15	9	6,842	184	130,081
49	Slaughtering and meat packing, wholesale.	8	570,350	27,600	56,000	50,700	436,050	6	48	44,990	132	89,165
50	Tinsmithing, coppersmithing, and sheet-iron working.	22	82,135	100	450	25,485	56,100	27	8	9,240	102	81,645
51	Tobacco, cigars and cigarettes	15	25,140			2,390	22,750	18	2	1,040	33	19,431
52	Watch, clock, and jewelry repairing	38	45,030	100	650	14,055	30,225	41			42	38,918
53	Window shades	3	42,200			1,000	41,200	7	7	5,500	10	6,940
54	All other industries [1]	82	2,439,080	358,798	133,885	1,034,310	912,587	79	103	98,739	819	474,831

[1] Embraces ammunition, 1; artificial limbs, 1; baking and yeast powders, 1; belting and hose, leather, 1; bookbinding and blank book making, 1; boots and shoes, factory product, 2; boxes, cigar, 1; boxes, wooden packing, 2; brooms and brushes, 1; cars and general shop construction and repairs by steam railroad companies, 1; cars and general shop construction and repairs by street railroad companies, 1; china decorating, 2; cooperage, 2; cutlery and edge tools, 2; electroplating, 1; engraving and diesinking, 1; engraving, steel, including plate printing, 1; engraving, wood, 1; fancy articles, not elsewhere specified, 1; fruits and vegetables, canning and preserving, 2; gas and lamp fixtures, 1; gas, illuminating and heating, 1; gloves and mittens, 1; hairwork, 2; hand stamps, 2; hats and caps, not including fur hats and wool hats 1; ice, artificial, 2; instruments, professional and scientific, 1; ironwork, architectural and ornamental, 2; leather

SPOKANE.

1	All industries	213	$2,678,823	$170,474	$484,729	$795,036	$1,228,584	225	249	$227,905	1,779	$1,080,618
2	Bicycle and tricycle repairing	6	8,175			3,050	5,125	6			12	7,690
3	Blacksmithing and wheelwrighting	20	21,710		3,025	7,300	11,385	23	1	840	47	33,376
4	Boots and shoes, custom work and repairing.	4	1,100		100	525	475	4			1	525
5	Bread and other bakery products	5	17,150	300	1,500	6,550	8,800	6	19	12,192	36	18,752
6	Brick and tile	4	24,270	5,000	2,750	6,800	9,720	4	5	4,320	62	31,844

BY SPECIFIED INDUSTRIES: 1900.

SEATTLE.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
7,870	$5,372,091	543	$188,969	67	$14,193	$1,479,604	$245,785	$48,671	$686,781	$498,467	$14,211,191	$14,056,769	$154,422	$26,373,402	1
18	18,211	14	5,784	2	500	5,372	2,730	258	2,384	----------	94,498	93,928	565	152,526	2
14	9,720	----------	----------	----------	----------	4,776	3,504	202	1,070	----------	12,450	11,883	567	38,109	3
13	11,529	----------	----------	----------	----------	1,594	1,161	25	408	----------	23,636	21,398	2,238	57,665	4
12	6,755	----------	----------	----------	----------	6,102	5,116	42	944	----------	15,638	15,419	219	59,258	5
47	20,365	10	2,600	2	475	15,246	1,160	221	13,865	----------	277,543	275,783	1,760	398,840	6
2	900	8	1,660	----------	----------	874	535	10	329	----------	4,652	4,592	60	9,360	7
90	62,552	4	1,330	1	250	12,922	8,105	432	4,385	----------	142,909	139,446	3,463	294,608	8
88	54,039	----------	----------	1	200	10,981	300	703	2,478	7,500	19,419	3,598	15,821	124,610	9
801	474,912	----------	----------	----------	----------	72,603	700	842	69,761	1,300	364,926	359,876	5,050	1,050,369	10
1,372	1,032,346	----------	----------	----------	----------	269,747	9,183	1,834	25,729	233,001	1,753,681	1,750,025	3,656	3,669,606	11
72	47,450	----------	----------	----------	----------	5,077	2,956	414	1,057	650	57,534	54,754	2,780	151,712	12
21	12,660	----------	----------	----------	----------	2,285	1,400	210	675	----------	192,520	191,385	1,135	224,250	13
210	151,623	59	19,329	----------	----------	39,063	29,300	683	8,480	600	179,645	178,805	840	513,524	14
11	6,800	112	34,107	----------	----------	8,216	6,621	57	1,538	----------	20,097	19,910	187	107,349	15
26	9,920	----------	----------	----------	----------	2,880	2,296	74	510	----------	34,650	34,585	65	79,694	16
27	16,906	7	2,780	2	648	11,489	5,630	524	5,170	165	286,579	283,645	2,934	365,632	17
73	40,623	79	24,594	1	120	12,292	7,575	411	4,306	----------	195,676	191,916	3,760	412,240	18
12	7,770	4	1,428	1	120	1,232	948	46	238	----------	2,612	1,852	760	54,025	19
22	23,760	----------	----------	----------	----------	5,070	3,795	140	1,035	100	116,480	115,845	635	179,600	20
255	105,700	1	350	3	284	32,501	4,924	1,215	26,362	----------	743,602	736,917	6,685	1,037,174	21
73	43,524	----------	----------	----------	----------	27,899	1,700	1,809	23,490	900	1,183,875	1,172,505	11,370	1,296,929	22
425	319,584	----------	----------	----------	----------	47,081	10,105	2,556	34,170	250	457,425	434,477	22,948	1,142,941	23
6	4,474	17	5,496	----------	----------	7,088	5,200	335	803	750	36,285	36,200	85	69,735	24
10	7,210	----------	----------	----------	----------	3,711	941	1,022	1,648	100	31,755	31,520	235	67,546	25
60	36,875	2	650	4	650	13,184	2,800	379	10,005	----------	55,867	54,291	1,576	146,873	26
28	21,980	----------	----------	----------	----------	3,236	1,944	202	1,090	----------	33,780	32,015	1,765	69,458	27
5	2,750	----------	----------	----------	----------	1,007	936	14	57	----------	3,660	3,650	10	10,600	28
14	7,870	3	1,000	----------	----------	1,934	1,610	24	300	----------	17,670	17,550	120	38,800	29
1,008	588,027	----------	----------	3	1,040	78,220	530	9,747	67,943	----------	1,484,000	1,484,000	----------	2,695,778	30
103	68,100	----------	----------	----------	----------	3,194	1,500	131	1,563	----------	50,327	49,727	600	150,780	31
5	5,150	----------	----------	----------	----------	427	237	----------	190	----------	8,400	8,380	20	17,750	32
585	519,432	----------	----------	----------	----------	202,548	2,466	407	14,825	184,850	1,120,040	1,115,876	4,164	2,148,713	33
46	24,720	7	2,780	4	829	1,923	915	276	732	----------	58,485	57,685	800	107,500	34
2	1,560	73	32,711	----------	----------	13,099	9,173	481	3,445	----------	112,229	112,108	121	209,435	35
9	4,395	----------	----------	----------	----------	2,932	802	105	2,025	----------	18,335	17,750	585	49,300	36
16	13,505	----------	----------	----------	----------	2,623	652	95	376	1,500	19,915	19,875	40	49,100	37
3	2,475	1	600	----------	----------	2,932	1,280	24	1,628	----------	5,393	5,202	191	16,777	38
22	11,550	2	520	----------	----------	1,249	610	41	598	----------	38,061	37,901	160	65,980	39
246	202,698	----------	----------	----------	----------	21,429	11,549	757	6,798	2,325	198,281	197,854	427	559,966	40
120	71,288	----------	----------	----------	----------	11,713	730	133	1,800	9,050	61,618	60,053	1,565	233,825	41
35	23,935	21	10,196	----------	----------	12,951	9,244	172	3,535	----------	69,560	69,494	66	169,785	42
127	126,644	----------	----------	----------	----------	8,597	926	96	1,575	6,000	95,562	95,516	46	284,310	43
110	109,044	----------	----------	----------	----------	14,913	6,150	230	5,083	3,450	230,387	229,206	1,181	461,184	44
130	88,003	24	9,087	7	1,140	23,231	10,258	769	10,806	1,398	81,969	79,618	2,351	285,088	45
270	128,675	7	4,800	2	280	108,272	12,850	1,423	71,393	22,606	96,577	87,864	8,713	576,101	46
26	18,450	----------	----------	----------	----------	4,950	2,947	148	1,855	----------	47,861	47,641	220	96,495	47
175	127,831	----------	----------	9	2,250	13,170	1,700	639	10,361	470	159,081	157,041	2,040	429,641	48
130	88,265	2	900	----------	----------	45,751	3,183	2,275	40,293	----------	2,666,655	2,660,259	6,396	3,072,195	49
101	81,333	----------	----------	1	312	12,664	6,208	436	5,420	600	103,508	101,858	1,650	273,776	50
27	17,543	5	1,776	1	112	13,672	3,550	115	10,007	----------	35,771	35,623	148	88,498	51
41	38,318	1	600	----------	----------	9,533	7,508	211	1,804	10	38,968	38,782	186	130,235	52
9	6,660	1	280	----------	----------	2,476	1,380	326	770	----------	55,050	55,050	----------	86,289	53
717	445,737	79	24,111	23	4,983	241,673	26,212	14,950	179,619	20,892	996,099	964,636	31,463	2,291,268	54

goods, 1; leather, tanned, curried, and finished, 1; liquors, malt, 1; lithographing and engraving, 1; models and patterns, 2; musical instruments and materials, not specified, 1; nets and seines, 1; paints, 1; patent medicines and compounds, 1; photolithographing and photoengraving, 1; pickles, preserves, and sauces, 2; rice, cleaning and polishing, 2; roofing and roofing materials, 1; sausage, 1; saws, 2; sewing machine repairing, 1; shipbuilding, iron and steel, 1; shirts, 2; show cases, 1; soap and candles, 2; stationery goods, not elsewhere specified, 1; steam packing, 1; stereotyping and electrotyping, 1; sugar and molasses, refining, 1; surgical appliances, 1; taxidermy, 1; tools, not elsewhere specified, 1; trunks and valises, 1; type founding, 1; umbrellas and canes, 2; upholstering materials, 1; vinegar and cider, 1; wirework, including wire rope and cable, 1; wood, preserving, 1; wood, turned and carved, 1; wool pulling, 1.

SPOKANE.

1,631	$1,034,426	146	$45,856	2	$336	$414,526	$80,459	$18,794	$234,106	$81,167	$2,854,463	$2,787,231	$67,232	$5,427,540	1
12	7,690	----------	----------	----------	----------	4,889	3,240	89	1,560	----------	14,903	14,485	418	34,595	2
47	33,376	----------	----------	----------	----------	4,398	3,593	123	682	----------	26,525	23,623	2,902	96,937	3
1	525	----------	----------	----------	----------	605	572	6	27	----------	1,829	1,800	29	5,340	4
30	16,802	6	1,950	----------	----------	6,044	4,740	238	1,066	----------	56,277	54,806	1,471	125,900	5
61	31,244	1	600	----------	----------	2,224	785	406	1,033	----------	13,775	1,515	12,260	80,482	6

TABLE 8.—MANUFACTURES IN CITIES

SPOKANE—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES.	Number of establishments.	CAPITAL. Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC. Number.	Salaries.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES. Total. Average number.	Wages.
7	Carpentering	7	$22,040	$1,500	$2,500	$3,150	$14,890	7	1	$1,200	94	$45,039
8	Cars and general shop construction and repairs by steam railroad companies.	3	190,006	30,620	75,287	33,147	50,952		22	18,740	287	192,658
9	Clothing, men's, custom work and repairing.	17	54,340			3,185	51,155	21	3	3,600	81	51,919
10	Clothing, women's, dressmaking	7	4,800			833	3,967	9	1	780	43	14,336
11	Confectionery	3	70,648	5,500	15,381	13,572	36,195	4	7	7,375	52	18,039
12	Dyeing and cleaning	4	2,625			1,450	1,175	5			8	4,700
13	Flouring and grist mill products	3	286,454		46,000	58,500	181,954		9	13,320	58	33,764
14	Foundry and machine shop products	5	132,643	5,050	19,138	44,355	64,100	5	10	10,680	97	67,594
15	Furniture, cabinetmaking, repairing, and upholstering.	6	56,419			3,310	53,109	6	1	1,200	25	16,796
16	Liquors, malt	4	419,400	30,600	198,500	103,000	87,300	1	14	24,600	47	47,368
17	Lock and gun smithing	3	1,470			900	570	4			1	1,200
18	Lumber and timber products	3	149,150	27,750	5,900	84,000	81,500	1	5	6,120	92	37,940
19	Lumber, planing mill products, including sash, doors, and blinds.	7	275,751	6,854	21,248	55,772	191,877	1	33	31,735	243	128,253
20	Millinery, custom work	4	11,403			230	11,173	3	10	4,480	21	7,400
21	Painting, house, sign, etc	5	17,680			1,805	15,875	7			32	27,900
22	Photography	6	12,400			3,250	4,150	10	1	520	10	5,131
23	Plumbing, and gas and steam fitting	12	72,627	200	950	6,489	64,988	13	6	5,040	102	80,815
24	Printing and publishing, book and job	11	86,961			69,800	17,161	13	9	10,630	72	49,122
25	Printing and publishing, newspapers and periodicals.	4	13,325			7,500	5,825	1	23	17,375	2	1,400
26	Saddlery and harness	8	32,600			2,500	30,100	7	3	3,300	15	10,033
27	Tinsmithing, coppersmithing, and sheet-iron working.	7	20,011			6,500	13,511	11	2	920	38	30,155
28	Tobacco, cigars and cigarettes	3	4,800			300	4,500	3			15	6,810
29	Watch, clock, and jewelry repairing	11	18,685		250	6,375	12,060	13			18	13,238
30	All other industries[1]	31	650,180	57,100	92,200	305,888	194,992	37	64	48,938	168	96,821

[1] Embraces awnings, tents, and sails, 1; bottling, 1; brooms and brushes, 2; carpets, rag, 1; carriages and wagons, 2; cheese, butter, and condensed milk, factory product, 2; coffee and spice, roasting and grinding, 1; coffins, burial cases, and undertakers' goods, 1; engraving, steel, including plate printing, 2; gas, illuminating and heating, 1; marble and stone work, 2; mattresses and spring beds, 1; mineral and soda waters, 2; monuments and tombstones, 1; paints, 2; paving and paving

TACOMA.

1	All industries	381	$8,146,691	$1,531,033	$1,035,283	$2,035,307	$3,545,068	385	293	$326,340	4,347	$2,356,028
2	Bicycle and tricycle repairing	10	7,500	200	500	3,800	3,000	12			13	7,759
3	Blacksmithing and wheelwrighting	18	8,900	300	1,760	4,115	2,725	18			22	13,365
4	Boots and shoes, custom work and repairing.	21	3,805		35	2,090	1,680	21			8	4,043
5	Bread and other bakery products	9	18,860	800	5,200	5,610	7,250	10			30	16,238
6	Brooms and brushes	3	4,950			500	4,450	4			14	8,080
7	Carpentering	30	41,578		500	11,760	29,318	32	1	1,080	369	217,578
8	Carriages and wagons	6	35,175	500	1,500	4,462	28,713	6	1	1,200	35	26,068
9	Clothing, men's, custom work and repairing.	19	19,975	200	400	2,145	17,230	25	1	900	72	43,768
10	Clothing, women's, dressmaking	12	36,665			990	35,675	17	3	3,200	58	18,496
11	Confectionery	7	16,360	3,500	400	2,685	10,275	6	5	3,000	23	7,489
12	Dyeing and cleaning	5	1,295			545	750	5			12	3,652
13	Fish, canning and preserving	3	26,725			1,225	25,500	3	2	1,400	27	11,690
14	Flavoring extracts	3	15,090			2,505	12,585	3	4	1,700	6	1,000
15	Flouring and grist mill products	5	594,852	23,000	93,348	87,872	390,632		20	36,135	123	68,642
16	Foundry and machine shop products	11	456,969	49,022	23,257	171,546	213,144	12	21	20,330	333	177,238
17	Furniture, cabinetmaking, repairing, and upholstering.	10	68,888			3,735	65,153	9			59	22,956
18	Furniture, factory product	4	155,750	22,200	55,500	25,900	52,150	3	10	10,020	147	56,149
19	Lock and gun smithing	6	2,705			1,470	1,235	7			5	3,792
20	Looking-glass and picture frames	4	11,800			800	11,000	6			5	2,436
21	Lumber and timber products	12	3,191,797	1,144,736	292,211	525,370	1,229,480	9	45	58,260	1,069	577,700
22	Lumber, planing mill products, including sash, doors, and blinds.	4	230,941		17,740	49,253	163,948	2	10	16,000	199	86,474
23	Millinery, custom work	9	15,445		3,300	145	12,000	11			31	5,696
24	Mineral and soda waters	3	6,350			2,300	4,050	3			9	3,887
25	Painting, house, sign, etc	9	11,205	1,200	800	1,725	7,480	11			53	27,608
26	Patent medicines and compounds	5	6,819			2,025	4,794	3	3	3,137	30	20,810
27	Photography	9	10,550		150	5,450	4,950	9			12	5,883
28	Plastering and stuccowork	4	740			475	265	4			12	8,600
29	Plumbing, and gas and steam fitting	9	26,575	4,500		1,800	20,275	8			35	27,285
30	Printing and publishing, book and job	12	56,053			37,418	18,635	15	3	3,380	48	22,916
31	Printing and publishing, newspapers and periodicals.	17	121,268			79,924	41,344	15	56	44,990	76	61,753

BY SPECIFIED INDUSTRIES: 1900—Continued.

SPOKANE—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
94	$45,039					$54,765	$671	$123	$471	$58,500	$145,485	$145,385	$100	$270,599	7
287	192,658					3,222		3,062	160		229,218	220,766	8,452	443,838	8
72	47,021	9	$4,898			12,279	9,135	600	1,884	660	53,702	52,702	1,000	144,802	9
		43	14,336			2,172	2,004	14	154		13,839	13,505	334	38,282	10
30	14,639	22	3,400			5,913	600	591	4,722		80,338	77,678	2,660	117,760	11
4	3,200	4	1,500			1,202	1,080	4	118		1,808	1,310	498	12,200	12
46	31,364	12	2,400			19,623	4,110	1,122	14,391		731,156	724,506	6,650	886,817	13
97	67,594					7,132	640	755	4,137	1,600	96,297	90,398	5,899	202,946	14
25	16,796					5,391	3,564	302	1,525		25,480	24,880	600	62,480	15
47	47,368					138,369	1,900	2,815	133,654		83,734	72,962	10,772	444,680	16
1	1,200					739	660	3	76		648	520	128	4,200	17
92	37,940					9,583		1,383	8,200		39,320	39,320		173,690	18
243	128,253					29,914	2,455	2,371	25,088		327,796	326,433	1,363	566,124	19
		21	7,400			4,697	3,303	106	1,288		38,194	38,188	6	69,250	20
32	27,900					4,776	3,036	17	1,123	600	19,756	19,622	134	67,843	21
5	3,140	5	1,991			3,854	3,150	53	651		10,085	9,965	120	29,450	22
102	80,815					8,242	3,304	151	2,387	2,400	215,364	214,183	1,181	343,780	23
59	45,244	12	3,722	1	$156	8,956	6,946	549	1,461		28,989	27,415	1,574	123,541	24
2	1,400					28,000	1,176	175	5,422	21,227	8,317	8,317		82,171	25
15	10,083					6,986	4,204	331	2,451		40,600	40,445	155	71,249	26
38	30,155					3,606	2,492	60	1,054		39,259	38,950	309	92,345	27
12	6,040	3	770			2,793	540	25	2,228		12,271	12,271		26,914	28
18	13,238					3,981	2,805	147	529	500	12,601	12,410	191	41,593	29
159	93,752	8	2,889	1	180	30,171	9,754	3,173	16,564	680	436,897	428,871	8,026	762,792	30

materials, 1; pickles, preserves, and sauces, 1; pottery, terra cotta, and fire-clay products, 1; shirts, 1; show cases, 1; slaughtering and meat packing, wholesale, 1; soap and candles, 1; vinegar and cider, 2.

TACOMA.

4,104	$2,285,516	203	$60,695	40	$9,817	$461,017	$71,002	$45,075	$327,635	$17,305	$7,389,166	$7,278,464	$110,702	$12,029,497	1
12	7,496			1	263	1,952	1,278	53	621		10,469	10,276	193	28,113	2
22	13,365					2,135	1,387	76	672		16,642	15,359	1,283	47,427	3
8	4,043					1,672	1,348	39	195	90	9,087	9,045	42	24,184	4
25	15,102	2	510	3	626	4,026	2,088	154	1,784		51,855	49,793	2,062	90,826	5
13	7,600	1	480			526	360	17	149		18,848	18,834	14	43,200	6
369	217,573					11,485	2,622	254	8,609		183,220	183,160	60	481,818	7
33	25,160			2	908	2,802	1,384	188	1,230		31,930	30,669	1,261	76,956	8
55	37,161	17	6,607			7,253	6,026	207	1,020		46,393	45,953	440	129,781	9
2	1,400	51	17,096			3,683	2,381	9	1,293		62,287	62,237	50	100,428	10
13	5,321	10	2,168			2,581	1,110	96	1,375		28,737	28,200	537	55,384	11
9	2,852	3	800			1,342	762	11	569		956	700	256	12,520	12
21	10,200	6	1,490			1,600	600	50	950		48,596	48,426	170	74,375	13
2	500	4	500			560	402	28	130		4,830	4,805	25	10,055	14
123	68,642					35,963	600	3,115	31,528	720	1,144,997	1,138,887	6,110	1,398,408	15
333	175,798	1	860	4	1,080	15,829	1,498	1,383	12,948		257,953	248,058	9,895	540,675	16
57	22,006	2	950			11,658	2,710	919	6,529	1,500	101,280	101,255	25	178,508	17
139	54,463	6	1,406	2	280	8,676		2,732	5,944		128,100	126,210	1,890	265,740	18
5	3,792					1,091	876	24	191		2,349	2,171	178	12,346	19
5	2,436					1,981	1,560	71	350		10,845	10,835	10	21,000	20
1,069	577,700					71,744	1,375	17,586	52,783		1,485,611	1,485,611		2,363,065	21
194	85,570	2	288	3	616	26,347	2,825	871	22,651		206,637	206,637		357,941	22
		31	5,696			2,557	1,734	98	725		21,150	21,150		40,035	23
7	3,658			2	234	750	420	55	275		8,918	8,816	102	23,000	24
53	27,608					2,947	816	109	2,022		30,965	30,953	12	76,956	25
27	20,030	3	780			4,084	1,256	44	2,784		6,923	6,899	24	41,533	26
5	2,858	7	2,975			3,715	2,600	110	1,005		7,370	7,370		25,490	27
12	8,600					260	60		200		5,250	5,250		17,700	28
35	27,285					3,994	1,188	314	2,492		71,962	71,887	75	117,173	29
42	21,388	1	401	5	1,182	5,185	2,690	424	1,071	1,000	17,886	16,628	1,258	73,487	30
71	60,731	2	500	3	522	37,074	6,604	134	19,341	10,995	34,926	33,249	1,677	242,923	31

TABLE 8.—MANUFACTURES IN CITIES

TACOMA—Continued.

	MANUFACTURING AND MECHANICAL INDUSTRIES, AND CITIES.	Number of establishments.	CAPITAL.					Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.	
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.		Number.	Salaries.	Total.	
											Average number.	Wages.
32	Saddlery and harness	3	$8,400	$1,000	----------	$900	$6,500	1	1	$1,500	18	$9,090
33	Ship and boat building, wooden	3	117,584	7,500	$55,600	26,050	28,434	3	7	11,280	169	95,602
34	Tinsmithing, coppersmithing, and sheet-iron working.	10	73,600	2,700	20,000	13,925	36,975	11	5	4,560	44	29,760
35	Tobacco, cigars and cigarettes	13	19,730	1,650	4,100	530	13,450	14	1	780	39	19,934
36	Watch, clock, and jewelry repairing	11	41,300	15,000	15,000	3,850	7,450	10	----------	----------	14	8,482
37	All other industries[1]	62	2,679,992	253,025	443,982	950,412	1,032,573	57	94	103,488	1,133	631,164

[1] Embraces awnings, tents, and sails, 2; babbitt metal and solder, 1; bookbinding and blank book making, 2; boots and shoes, factory product, 1; bottling, 1; boxes, cigar, 1; boxes, wooden packing, 2; brick and tile, 2; bridges, 1; carpets, rag, 1; carriage and wagon materials, 1; cars and general shop construction and repairs by steam railroad companies, 1; cars and general shop construction and repairs by street railroad companies, 1; clothing, men's, factory product, 1; clothing, women's, factory product, 2; coffee and spice, roasting and grinding, 1; coffins, burial cases, and undertakers' goods, 1; cooperage, 1; electrical construction and repairs, 2; electroplating, 1; enameling and enameled goods, 1; engraving, steel, including plate printing, 2; fur goods, 2; gas and lamp fixtures, 1; gas, illuminating

TABLE 9.—MANUFACTURES IN CITIES

1	Total for cities	324	$4,496,232	$374,164	$713,741	$1,029,870	$2,378,457	345	153	$150,562	2,750	$1,276,589
2	Dayton	47	274,665	14,200	39,500	57,690	163,275	50	9	8,100	69	40,845
3	Everett	84	1,681,549	114,450	330,051	458,040	779,008	83	74	72,254	900	509,009
4	Fairhaven	30	1,163,291	22,100	118,665	148,696	873,830	30	18	19,547	1,026	287,493
5	New Whatcom	71	448,219	127,064	37,300	169,620	114,235	75	20	19,618	359	195,394
6	Snohomish	22	137,625	16,300	20,150	35,280	65,895	23	11	8,550	130	73,182
7	Wallawalla	70	790,883	80,050	168,075	160,544	382,214	84	21	22,493	266	170,866

BY SPECIFIED INDUSTRIES: 1900—Continued.

TACOMA—Continued.

AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES—continued.						MISCELLANEOUS EXPENSES.					COST OF MATERIALS USED.			Value of products, including custom work and repairing.	
Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Total.	Rent of works.	Taxes, not including internal revenue.	Rent of offices, interest, etc.	Contract work.	Total.	Principal materials, including mill supplies and freight.	Fuel and rent of power and heat.		
Average number.	Wages.	Average number.	Wages.	Average number.	Wages.										
13	$9,090	------	------	------	------	$2,255	$1,680	$85	$490	------	$40,853	$40,305	$48	$64,200	32
169	95,602	------	------	------	------	8,855	565	1,253	6,037	$1,000	115,965	113,939	2,026	209,750	33
44	29,760	------	------	------	------	4,361	1,680	436	2,245	------	49,419	49,144	275	128,886	34
39	19,934	------	------	------	------	12,223	2,566	151	9,506	------	41,438	41,403	35	83,435	35
12	8,094	1	$288	1	$100	1,848	1,245	71	332	200	9,059	8,965	94	81,850	36
1,066	612,758	53	17,400	14	4,006	156,003	12,706	13,908	127,589	1,800	3,075,960	2,995,385	80,575	4,540,329	37

and heating, 1; hand knit goods, 1; hand stamps, 1; ice, artificial, 1; jewelry, 2; lead, smelting and refining, 1; liquors, malt, 1; lithographing and engraving, 2; marble and stone work, 2; masonry, brick and stone, 2; paving and paving materials, 1; roofing and roofing materials, 1; saws, 1; shirts, 1; show cases, 1; slaughtering and meat packing, wholesale, 1; slaughtering, wholesale, not including meat packing, 1; soap and candles, 1; steam fittings and heating apparatus, 1; stencils and brands, 1; trunks and valises, 1; umbrellas and canes, 2; vinegar and cider, 1; wood, turned and carved, 2.

UNDER 20,000 IN POPULATION: 1900.

2,590	$1,238,976	102	$25,130	58	$12,483	$465,196	$43,907	$25,629	$395,200	$460	$4,631,047	$4,551,421	$79,626	$7,388,303	1
65	39,765	4	880	------	------	13,947	3,934	2,635	7,378	------	430,941	427,076	3,865	573,516	2
867	500,156	19	4,825	14	4,028	168,022	9,791	7,000	150,946	285	1,820,523	1,777,113	43,410	2,808,382	3
941	269,873	58	12,450	27	5,170	161,803	2,797	4,005	155,001	------	1,044,609	1,035,950	8,659	1,699,015	4
338	191,539	13	2,705	8	1,150	31,345	10,333	4,081	16,856	75	293,237	285,481	7,756	643,931	5
125	72,387	------	------	5	795	15,976	2,610	1,033	12,333	------	316,052	313,584	2,468	484,446	6
254	165,256	8	4,270	4	1,340	74,103	14,442	6,875	52,686	100	725,685	712,217	13,468	1,184,513	7