

CENSUS BULLETIN.

No. 267.

WASHINGTON, D. C.

October 19, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF ST. JOSEPH, MISSOURI

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 17, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of St. Joseph for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; druggists' preparations, not including prescriptions; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	9
Capital invested	\$88,627
Number of hands employed.....	300
Wages paid	\$143,718
Cost of materials used	\$167,348
Miscellaneous expenses.....	\$3,857
Value of product at works	\$345,024

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows :

PERCENTAGES OF INCREASE.

Capital invested.....	220.37
Number of hands employed.....	89.28
Wages paid.....	116.04
Cost of materials used.....	129.27
Value of product at works.....	108.34
Population of city.....	61.34
Assessed valuation of city.....	188.45

Decrease in number of establishments, 23.95 per cent.

Decrease of municipal debt less sinking fund, 11.79 per cent.

A striking feature of these returns is the satisfactory increase during the decade in the number of hands employed and the amount of wages paid. Although the greatest increase has occurred in the number of adult females employed in the manufacture of men's clothing and receiving relatively low wages, yet, considering the total number of hands employed in all industries, the average wages per hand have increased from \$397 in 1880 to \$453 in 1890, or 14.11 per cent.

Part of this increase is undoubtedly due to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

Robert P. Porter

Superintendent of Census

STATISTICS OF MANUFACTURES: 1890.

CITY OF ST. JOSEPH, MISSOURI.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and ordered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. * * * They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.	
							All industries.....

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	{ 1880 1890	{ \$5,143,585 11,060,891	{ 32,431 52,324	{ \$8,508,529 24,802,060	{ \$1,843,662 1,626,226

^a The value of hired property is not included for 1890, because it was not reported in 1880.

^b No inquiry in 1880 relating to "Miscellaneous expenses".

^c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employés performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Carriages and wagons.	Clothing— men's, whole- sale.	Cooperage.	Flouring and grist mill prod- ucts.
	(8 establish- ments.)	(5 establish- ments.)	(5 establish- ments.)	(5 establish- ments.)
CAPITAL EMPLOYED—Aggregate	\$132,381	\$525,170	\$82,985	\$598,463
HIRED PROPERTY—Total	51,150	87,310	1,000	20,650
PLANT—Total	36,225	94,493	51,870	250,500
Land.....	17,225	20,000	25,300	44,000
Buildings.....	12,500	30,000	20,400	65,000
Machinery, tools, and implements.....	6,500	44,493	6,170	141,500
LIVE ASSETS—Total	45,006	343,367	30,115	327,313
Raw materials.....	9,795	146,367	7,715	77,394
Stock in process and finished product.....	16,950	93,000	3,800	62,404
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	18,261	103,000	18,600	187,515
WAGES PAID—Aggregate	\$47,921	\$291,050	\$54,834	\$70,284
Average number of hands employed during the year.....	83	1,017	82	123
Males above 16 years.....	71	105	60	100
Females above 15 years.....	3	43		1
Children.....	2			
Pieceworkers.....	7	869	22	22
MATERIALS USED—Aggregate cost	\$48,594	\$736,955	\$68,105	\$1,343,494
Principal materials.....	46,666	714,537	67,655	1,244,851
Fuel.....	1,278	2,413	450	32,852
Mill supplies.....		600		50
All other materials.....	650	19,600		65,741
MISCELLANEOUS EXPENSES—Aggregate	\$8,154	\$21,622	\$4,121	\$45,068
Amount paid for contract work.....	4,824	6,053	75	1,830
Rent.....	350	255		
Power and heat.....	794	2,358	426	4,668
Taxes.....	651	2,461	556	6,670
Insurance.....	170	4,380	500	1,900
Repairs, ordinary, of buildings and machinery.....	130		450	1,200
Interest on cash used in the business.....	1,235	6,015	2,114	28,800
All sundries not elsewhere reported.....				
GOODS MANUFACTURED—Aggregate value	\$127,721	\$1,125,870	\$167,774	\$1,611,690
Principal product.....	85,421	1,125,870	163,274	1,339,190
All other products, including receipts from custom work and repairing.....	42,300		4,500	272,500

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Foundry and machine shop products.	Liquors—malt.	Lumber— planing mill products, etc. (a)	Printing and publishing. v(a)
	(3 establish- ments.)	(4 establish- ments.)	(6 establish- ments.)	(16 establish- ments.)
CAPITAL EMPLOYED—Aggregate	\$139,760	\$383,557	\$157,820	\$372,696
HIRED PROPERTY—Total	21,460	20,750	18,520	150,325
PLANT—Total	71,550	260,800	53,800	141,756
Land		50,000	11,500	
Buildings		109,000	7,800	
Machinery, tools, and implements	71,550	101,800	34,500	141,756
LIVE ASSETS—Total	46,750	102,007	85,500	80,615
Raw materials	8,750	18,570	25,300	16,610
Stock in process and finished product	3,200	34,480	14,700	4,790
Cash, bills and accounts receivable, and all sundries not elsewhere reported	34,800	48,957	45,500	59,215
WAGES PAID—Aggregate	\$42,038	\$72,838	\$98,190	\$151,683
Average number of hands employed during the year	66	96	152	245
Males above 16 years	66	96	151	174
Females above 15 years			1	14
Children				15
Pieceworkers				42
MATERIALS USED—Aggregate cost	\$94,725	\$115,951	\$492,210	\$116,240
Principal materials	93,000	98,125	449,610	107,639
Fuel	1,500	14,326	1,750	1,237
Mill supplies	225		300	
All other materials		3,500	40,550	7,364
MISCELLANEOUS EXPENSES—Aggregate	\$13,618	\$61,977	\$7,310	\$35,158
Amount paid for contract work				
Rent	1,980	1,800	1,700	11,225
Power and heat			1,000	1,680
Taxes	358	636,685	790	1,111
Insurance	405	2,575	720	2,049
Repairs, ordinary, of buildings and machinery	575	3,281	775	1,187
Interest on cash used in the business		136	200	2,210
All sundries not elsewhere reported	10,300	17,500	2,125	16,666
GOODS MANUFACTURED—Aggregate value	\$167,000	\$297,810	\$727,800	\$381,830
Principal product	164,000	297,810	725,800	362,330
All other products, including receipts from custom work and repairing	3,000		2,000	19,500

a Includes several branches of this industry, which will be specifically stated in final reports.
b Includes internal revenue taxes.

CENSUS BULLETIN.

No. 268.

WASHINGTON, D. C.

October 19, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF SAVANNAH, GEORGIA.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,

WASHINGTON, D. C., October 17, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Savannah for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following industry was omitted in the census reports of 1880: druggists' preparations, not including prescriptions.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industry referred to:

TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported	4
Capital invested	\$7,900
Number of hands employed	16
Wages paid	\$2,785
Cost of materials used	\$6,750
Miscellaneous expenses	\$830
Value of product at works	\$16,200

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

Number of establishments reported.....	52.50
Capital invested	169.23
Number of hands employed	43.98
Wages paid.....	88.99
Cost of materials used	5.42
Value of product at works	31.07
Population of city	40.64
Assessed valuation of city.....	122.44
Municipal debt less sinking fund	4.69

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$396 in 1880 to \$520 in 1890, or 31.31 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; that the percentage of increase in the number of women employed has been less in many industries than in the number of adult males; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason required more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

The fact that the rate of increase in total cost of materials used is apparently disproportionate to the rate of increase in total value of products is explained by the decreased values of material and product reported for the industry of cleaning and polishing rice, and the change in their ratio. As reported in 1880 the cost of materials constituted 89.73 per cent of the value of product, but in 1890 such cost is reduced to 74.82 per cent.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.


 Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF SAVANNAH, GEORGIA.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. * * * They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.	
							All industries.....

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	1880 1890	\$3,396,297 4,467,688	30,709 43,189	\$15,060,445 33,500,000	\$3,425,000 3,585,800

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Fertilizers.	Foundry and machine shop products.	Printing and publishing— book and job.	Printing and publishing— newspapers and periodicals.	Rice cleaning and polishing.
	(3 establish- ments.)	(4 establish- ments.)	(6 establish- ments.)	(5 establish- ments.)	(3 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$984,000	\$197,500	\$132,250	\$95,850	\$455,000
Hired property—Total.....	60,000		52,500	16,000	
PLANT—Total.....	338,000	144,000	62,000	16,100	450,000
Land.....	60,000	28,500			140,000
Buildings.....	205,000	39,500			245,000
Machinery, tools, and implements.....	73,000	76,000	62,000	16,100	65,000
LIVE ASSETS—Total.....	586,000	53,500	17,750	3,750	5,000
Raw materials.....	37,000	12,500	10,000	2,200	
Stock in process and finished product.....	65,000	8,500	1,750	600	
Cash, bills and accounts receivable, and all sundries not else- where reported.....	484,000	32,500	6,000	950	5,000
WAGES PAID—Aggregate.....	\$71,675	\$98,629	\$29,055	\$18,577	\$34,776
Average number of hands employed during the year.....	136	147	49	29	85
Males above 16 years.....	136	147	41	22	80
Females above 15 years.....			3	4	5
Children.....			4	1	
Pieceworkers.....			1	2	
MATERIALS USED—Aggregate cost.....	\$465,700	\$65,840	\$22,065	\$31,424	\$684,396
Principal materials.....	455,800	60,040	21,095	31,263	676,308
Fuel.....	8,900	5,200	970	156	6,588
Mill supplies.....	300	100			500
All other materials.....	700	500		5	1,000
MISCELLANEOUS EXPENSES—Aggregate.....	\$59,373	\$3,570	\$7,951	\$2,854	\$11,792
Amount paid for contract work.....					
Rent.....	5,500		4,203	1,262	
Power and heat.....			312		
Taxes.....	4,459	2,079	741	325	6,250
Insurance.....	5,014	1,241	765	88	3,442
Repairs, ordinary, of buildings and machinery.....	5,400	250	450	64	1,500
Interest on cash used in the business.....	19,000		800		600
All sundries not elsewhere reported.....	20,000		680	1,115	
GOODS MANUFACTURED—Aggregate value.....	\$725,000	\$252,535	\$77,596	\$59,266	\$914,611
Principal product.....	725,000	170,935	77,596	59,266	914,611
All other products, including receipts from custom work and repairing.....		81,600			

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

CENSUS BULLETIN.

No. 269.

WASHINGTON, D. C.

October 20, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF BALTIMORE, MARYLAND.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 18, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Baltimore for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; china decorating; druggists' preparations, not including prescriptions; drug grinding; gas manufactured, illuminating and heating; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	278
Capital invested	\$3,566,622
Number of hands employed.....	4,000
Wages paid	\$1,841,771
Cost of materials used.....	\$4,402,699
Miscellaneous expenses.....	\$162,678
Value of product at works.....	\$7,728,166

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows :

PERCENTAGES OF INCREASE.	
Number of establishments reported.....	35.22
Capital invested.....	104.63
Number of hands employed.....	40.39
Wages paid.....	121.83
Cost of materials used.....	44.27
Value of product at works.....	69.19
Population of city.....	30.73
Assessed valuation of city.....	14.02
Municipal debt less sinking fund.....	14.03

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$268 in 1880, to \$424 in 1890, or 58.21 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; that the percentage of increase in the number of women employed has been less in many industries than in the number of adult males; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

Robert P. Porter

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF BALTIMORE, MARYLAND.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. * * * They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries -----		\$78,417,304 140,401,026	332,313 434,439	\$244,043,181 278,249,691	\$227,895,441 31,810,335

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

d Through no fault of the Census Office the debt less sinking fund was erroneously reported by the Tenth Census as \$854,466. At the request of Hon. Robert C. Davidson, mayor of the city in 1891, the amount is corrected as above.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890, as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Brass castings and brass finishing. (7 establishments.)	Clothing—men's, wholesale. (125 establishments.)	Fertilizers. (25 establishments.)	Foundry and machine shop products. (65 establishments.)	Fruits, oysters, and vegetables—canning and preserving. (40 establishments.)
CAPITAL EMPLOYED—Aggregate.....	\$1,689,428	\$11,897,563	\$4,163,347	\$5,041,767	\$3,226,416
HIRED PROPERTY—Total	217,067	2,114,920	184,400	518,870	215,710
PLANT—Total.....	276,800	780,210	1,101,375	1,981,630	1,139,729
Land.....	3,000	201,035	320,825	388,050	530,975
Buildings.....	140,000	430,825	405,900	498,884	347,100
Machinery, tools, and implements.....	133,800	148,350	374,650	1,098,696	261,654
LIVE ASSETS—Total	1,195,561	9,002,433	2,877,672	2,541,467	1,870,977
Raw materials.....	79,980	1,333,534	273,163	331,846	112,764
Stock in process and finished product.....	402,431	2,693,090	468,783	544,894	856,235
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	713,150	4,975,809	2,135,626	1,665,227	901,978
WAGES PAID—Aggregate	\$663,056	\$4,178,971	\$399,741	\$1,837,450	\$1,886,851
Average number of hands employed during the year.....	1,187	13,094	638	3,436	8,900
Males above 16 years.....	1,136	2,474	630	3,016	1,523
Females above 15 years.....	50	2,197	6	6	2,131
Children.....	1	34		28	154
Pieceworkers.....		8,389	2	386	5,182
MATERIALS USED—Aggregate cost	\$785,852	\$8,120,981	\$2,566,577	\$1,789,085	\$5,369,201
Principal materials.....	709,677	8,095,030	2,493,904	1,484,028	4,866,512
Fuel.....	76,105	4,461	47,153	77,745	29,967
Mill supplies.....	45	300	510	35,791	3,590
All other materials.....	25	21,190	25,010	191,521	469,192
MISCELLANEOUS EXPENSES—Aggregate.....	\$30,745	\$408,258	\$197,316	\$235,833	\$141,023
Amount paid for contract work.....		9,000			
Rent.....	19,636	148,045	14,752	51,987	17,251
Power and heat.....	93	2,092	300	4,630	
Taxes.....	4,799	38,218	26,815	24,552	15,473
Insurance.....	3,085	37,081	19,696	13,337	11,067
Repairs, ordinary, of buildings and machinery.....	365	7,225	33,449	26,436	9,594
Interest on cash used in the business.....	2,600	35,810	27,249	45,634	22,245
All sundries not elsewhere reported.....	167	130,787	75,055	69,257	65,303
GOODS MANUFACTURED—Aggregate value.....	\$1,903,850	\$15,032,924	\$3,957,345	\$4,718,189	\$8,516,799
Principal product.....	1,903,550	14,997,074	3,957,345	4,433,726	8,516,799
All other products, including receipts from custom work and repairing.....	300	35,850		284,463	

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Liquors—dis- tilled. (5 establish- ments.)	Liquors—malt. (a) (27 establish- ments.)	Patent medi- cines and compounds. (20 establish- ments.)	Slaughtering and meat packing— wholesale. (14 establish- ments.)	Tobacco. (a) (350 establish- ments.)
CAPITAL EMPLOYED—Aggregate	\$1,421,225	\$4,924,988	\$975,725	\$1,153,856	\$4,208,451
HIRED PROPERTY—Total	18,750	30,660	81,230	195,335	683,262
PLANT—Total	845,000	3,602,583	252,415	330,600	1,124,872
Land	260,000	744,314	52,200	76,800	237,311
Buildings	445,000	1,735,521	77,900	97,750	699,607
Machinery, tools, and implements	140,000	1,122,748	122,315	156,050	187,954
LIVE ASSETS—Total	557,475	1,291,745	642,080	627,321	2,400,317
Raw materials	80,500	192,854	70,025	72,400	1,131,554
Stock in process and finished product	234,075	528,573	77,000	214,000	374,869
Cash, bills and accounts receivable, and all sundries not else- where reported.	242,900	570,318	495,055	341,521	893,894
WAGES PAID—Aggregate	\$94,824	\$532,739	\$246,028	\$225,112	\$1,240,093
Average number of hands employed during the year	146	690	698	421	3,242
Males above 16 years	146	687	284	409	1,067
Females above 15 years		1	365	4	876
Children		2	1	4	146
Pieceworkers			48	4	1,153
MATERIALS USED—Aggregate cost	\$683,861	\$1,503,482	\$779,251	\$3,668,147	\$2,522,336
Principal materials	548,650	1,294,055	771,206	3,630,231	2,092,998
Fuel	32,121	78,635	7,245	23,416	5,001
Mill supplies		400			1,050
All other materials	103,090	135,392	800	14,500	423,287
MISCELLANEOUS EXPENSES—Aggregate	\$1,029,220	\$963,062	290,599	\$75,232	\$1,260,387
Amount paid for contract work					
Rent	1,500	2,400	6,090	16,102	54,661
Power and heat			200		300
Taxes	6974,400	6488,839	7,031	9,672	61,060,821
Insurance	8,809	13,451	2,098	5,858	15,955
Repairs, ordinary, of buildings and machinery	16,420	45,970	1,550	8,050	24,501
Interest on cash used in the business	11,600	13,410	1,210	13,910	64,296
All sundries not elsewhere reported	16,500	398,992	272,420	21,640	39,853
GOODS MANUFACTURED—Aggregate value	\$2,085,560	\$3,825,174	\$1,947,950	\$4,311,412	\$5,906,333
Principal product	2,085,560	3,823,954	1,947,950	4,305,462	5,901,969
All other products, including receipts from custom work and repairing		1,220		5,950	4,364

a Includes several branches of this industry, which will be specifically stated in final reports.
b Includes internal revenue taxes.

CENSUS BULLETIN.

No. 270.

WASHINGTON, D. C.

October 20, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF CINCINNATI, OHIO.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,

WASHINGTON, D. C., October 18, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Cincinnati for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; china and pottery, decorating; druggists' preparations not including prescriptions; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	1,075
Capital invested.....	\$592,702
Number of hands employed.....	3,086
Wages paid.....	\$1,072,835
Cost of materials used.....	\$954,193
Miscellaneous expenses.....	\$162,265
Value of product at works.....	\$2,709,518

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

Number of establishments reported.....	101.13
Capital invested.....	76.70
Number of hands employed.....	58.56
Wages paid.....	119.20
Cost of materials used.....	31.68
Value of product at works.....	67.15
Population of city.....	16.37
Assessed valuation of city.....	5.00
Municipal debt less sinking fund.....	12.48

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$359 in 1880 to \$496 in 1890, or 38.16 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; that the percentage of increase in the number of women employed has been less in many industries than in the number of adult males; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

Robert D. Forster

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

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The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

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The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	\$18,338,352	\$105,259,165 178,650,185	255,139 236,908	\$169,305,635 177,773,240	\$21,992,500 24,737,611

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

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In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

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First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

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It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Boots and shoes—factory product.	Carriages and wagons. (b)	Clothing—wholesale. (b)	Coffins, burial cases and undertakers' goods.	Foundry and machine shop products. (b)
	(28 establishments.)	(102 establishments.)	(459 establishments.)	(5 establishments.)	(130 establishments.)
CAPITAL EMPLOYED—Aggregate.....	\$2, 029, 194	\$6, 139, 974	\$14, 841, 040	\$1, 303, 115	\$11, 237, 318
Hired property—Total.....	207, 230	988, 890	3, 227, 740	43, 660	2, 499, 200
PLANT—Total.....	499, 450	1, 267, 461	816, 835	642, 555	3, 157, 134
Land.....	117, 350	362, 245	323, 675	179, 500	588, 875
Buildings.....	120, 050	416, 318	371, 000	287, 800	464, 850
Machinery, tools, and implements.....	262, 050	488, 898	121, 660	175, 255	2, 103, 409
LIVE ASSETS—Total.....	1, 222, 514	3, 883, 523	10, 796, 965	616, 900	5, 580, 984
Raw materials.....	175, 973	716, 471	1, 190, 292	229, 100	942, 590
Stock in process and finished product.....	344, 146	962, 249	4, 552, 404	80, 100	1, 711, 068
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	702, 395	2, 204, 803	5, 054, 269	307, 700	2, 927, 326
WAGES PAID—Aggregate.....	\$1, 554, 416	\$2, 450, 796	\$4, 302, 121	\$359, 293	\$4, 433, 265
Average number of hands employed during the year.....	3, 416	4, 650	15, 233	702	7, 536
Males above 16 years.....	1, 681	3, 417	2, 197	429	6, 798
Females above 16 years.....	795	243	2, 772	35	43
Children.....	12	102	30	13	47
Pieceworkers.....	928	888	10, 234	225	648
MATERIALS USED—Aggregate cost.....	\$2, 622, 293	\$5, 310, 332	\$8, 309, 323	\$536, 101	\$5, 239, 517
Principal materials.....	2, 555, 393	4, 829, 457	8, 248, 570	373, 831	4, 833, 172
Fuel.....	3, 896	41, 887	4, 643	10, 229	105, 399
Mill supplies.....		500		1, 400	45, 610
All other materials.....	61, 004	438, 488	56, 110	150, 641	253, 326
MISCELLANEOUS EXPENSES—Aggregate.....	\$113, 396	\$428, 967	\$640, 694	\$23, 662	\$847, 486
Amount paid for contract work.....					
Rent.....	26, 085	88, 338	225, 923	3, 948	224, 749
Power and heat.....	3, 196	3, 360	2, 810		12, 824
Taxes.....	8, 633	31, 523	37, 370	6, 506	68, 045
Insurance.....	10, 431	51, 019	58, 503	8, 058	47, 138
Repairs, ordinary, of buildings and machinery.....	19, 063	14, 586	11, 830	4, 900	38, 836
Interest on cash used in the business.....	9, 150	44, 689	73, 861	100	41, 125
All sundries not elsewhere reported.....	36, 839	195, 461	227, 897	150	414, 769
GOODS MANUFACTURED—Aggregate value.....	\$5, 032, 987	\$9, 969, 388	\$17, 982, 123	\$1, 164, 100	\$12, 981, 803
Principal product.....	4, 982, 887	9, 489, 956	17, 806, 888	1, 164, 100	12, 689, 863
All other products, including receipts from custom work and repairing.....	50, 100	479, 432	115, 235		291, 940

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.
b Includes several branches of this industry, which will be specifically stated in final reports.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Furniture— factory prod- ucts.	Leather—tanned and curried.	Liquors—dis- tilled and malt.	Saddlery and harness.	Soap and can- dles.
	(60 establish- ments.)	(9 establish- ments.)	(25 establish- ments.)	(71 establish- ments.)	(16 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$4,376,278	\$2,503,510	\$8,747,282	\$1,704,884	\$1,935,609
HIRED PROPERTY—Total.....	696,300	65,990	230,500	691,600	235,800
PLANT—Total.....	1,367,490	566,170	4,724,856	215,570	1,188,417
Land.....	584,375	152,000	1,383,175	53,800	67,500
Buildings.....	462,700	285,300	2,022,296	85,300	870,250
Machinery, tools, and implements.....	320,415	128,870	1,319,385	76,470	252,667
LIVE ASSETS—Total.....	2,312,488	1,871,350	3,791,926	797,714	511,392
Raw materials.....	491,547	154,900	516,633	145,268	62,063
Stock in process and finished product.....	647,660	1,102,750	1,493,591	303,518	253,458
Cash, bills and accounts receivable, and all sundries not else- where reported.....	1,173,291	613,700	1,781,702	348,928	195,871
WAGES PAID—Aggregate.....	\$1,578,605	\$334,358	\$1,296,700	\$673,987	\$307,377
Average number of hands employed during the year.....	2,932	595	1,575	1,167	727
Males above 16 years.....	2,472	594	1,554	859	585
Females above 16 years.....	76	1	1	38	100
Children.....	61		5	4	20
Pieceworkers.....	373		15	266	22
MATERIALS USED—Aggregate cost.....	\$1,407,630	\$1,417,842	\$4,208,433	\$1,600,146	\$2,834,675
Principal materials.....	1,351,585	1,358,250	3,626,847	1,568,773	2,782,307
Fuel.....	13,810	1,000	200,832	2,573	18,822
Mill supplies.....	2,750		22,861	150	1,728
All other materials.....	39,485	58,592	857,893	28,650	31,818
MISCELLANEOUS EXPENSES—Aggregate.....	\$256,335	\$113,715	\$9,746,954	\$104,566	\$105,889
Amount paid for contract work.....					2,400
Rent.....	62,578	5,240	18,300	48,337	16,425
Power and heat.....	7,840			1,865	300
Taxes.....	31,964	5,650	28,945,010	8,458	4,718
Insurance.....	38,466	13,365	52,992	9,187	4,503
Repairs, ordinary, of buildings and machinery.....	12,645	16,730	140,718	4,350	43,625
Interest on cash used in the business.....	8,527	34,800	83,919	3,000	422
All sundries not elsewhere reported.....	94,315	37,930	606,015	28,799	33,496
GOODS MANUFACTURED—Aggregate value.....	\$4,055,924	\$1,920,160	\$16,796,890	\$3,636,707	\$3,826,480
Principal product.....	4,049,774	939,660	16,747,350	3,581,389	3,826,480
All other products, including receipts from custom work and repairing.....	6,150	980,500	49,540	55,318	

a Includes internal revenue taxes.

CENSUS BULLETIN.

No. 271.

WASHINGTON, D. C.

October 20, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF TACOMA, WASHINGTON.

DEPARTMENT OF THE INTERIOR.

CENSUS OFFICE.

WASHINGTON, D. C., October 18, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of city of Tacoma for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Tacoma were included in the totals published for Pierce county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

PIERCE COUNTY: 1880.

Number of establishments reported.....	6
Capital invested.....	\$243,300
Number of hands employed.....	130
Wages paid.....	\$53,411
Value of materials used.....	\$192,051
Value of product.....	\$288,720

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

INDUSTRIES.	Number industries reported.	Number establishments reporting	Capital.	Hands employed.	Wages paid.	Cost of materials used.	
All industries (a).....	{ 1880 1890	28	61	\$5,431,840	1,921	\$1,315,925	\$1,647,121

INDUSTRIES.	Miscellaneous expenses.	Value of product.	MUNICIPAL DATA.			
			Population.	Assessed valuation.	Municipal debt. (b)	
All industries (a).....	{ 1880 1890	\$208,621	\$4,063,605	1,098 36,006	\$280,000 29,750,346	\$255,716

^a Statistics of manufactures for 1880 were included in totals published for Pierce county.

^b The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

Among other important industries, in which less than 3 establishments are reported, may be mentioned carriages and wagons, 2 establishments; clay and pottery products, 2 establishments; coffins, burial cases, and undertakers' goods, 1 establishment; flouring and grist mill products, 1 establishment; and liquors, malt, 1 establishment. The 7 establishments referred to report invested capital \$475,183, 150 hands employed, and value of products \$615,613.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

CLASSIFICATION OF INQUIRIES.	Clay and pottery products.	Foundry and machine shop products.	Ironwork—architectural and ornamental.	Lumber and other mill products from logs and bolts.	Lumber—planing mill products. (a)
	(5 establishments.)	(3 establishments.)	(4 establishments.)	(13 establishments.)	(4 establishments.)
CAPITAL EMPLOYED—Aggregate.....	\$223,903	\$199,710	\$112,225	\$3,491,000	\$246,385
HIRED PROPERTY—Total.....	6,720	10,810	11,925	6,215	2,485
PLANT—Total.....	147,463	127,000	59,400	2,838,361	130,100
Land.....	66,500	34,000	25,000	2,070,699	57,500
Buildings.....	48,614	29,000	26,200	198,825	31,100
Machinery, tools, and implements.....	32,349	64,000	8,200	569,037	41,500
LIVE ASSETS—Total.....	74,720	61,900	40,900	646,424	113,800
Raw materials.....	13,300	14,500	10,900	38,600	40,000
Stock in process and finished product.....	42,500	12,500	6,500	214,136	4,800
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	18,920	34,900	23,500	393,688	69,000
WAGES PAID—Aggregate.....	\$100,975	\$129,200	\$104,752	\$604,548	\$100,915
Average number of hands employed during the year.....	182	143	99	966	153
Males above 16 years.....	174	143	99	927	142
Females above 15 years.....	1			1	
Children.....	3				11
Pieceworkers.....	4			38	
MATERIALS USED—Aggregate cost.....	\$33,355	\$68,910	\$50,740	\$853,037	\$149,900
Principal materials.....	5,800	49,780	47,120	758,575	142,000
Fuel.....	6,535	4,930	470		
Mill supplies.....		600		94,462	1,400
All other materials.....	1,020	13,600	3,150		6,500
MISCELLANEOUS EXPENSES—Aggregate.....	\$9,017	\$9,232	\$3,080	\$97,416	\$7,855
Amount paid for contract work.....					
Rent.....	600	1,010	1,114	600	240
Power and heat.....					
Taxes.....	737	1,040	474	15,038	1,015
Insurance.....	280	1,082	492	11,313	2,980
Repairs, ordinary, of buildings and machinery.....	3,600	1,400	550	15,136	1,700
Interest on cash used in the business.....	2,700	4,700		30,151	1,720
All sundries not elsewhere reported.....	1,100		450	25,178	200
GOODS MANUFACTURED—Aggregate value.....	\$241,743	\$272,000	\$222,500	\$1,776,438	\$302,296
Principal product.....	231,743	232,000	222,500	1,550,998	302,296
All other products, including receipts from custom work and repairing.....	7,000	40,000		225,500	

a Includes several branches of this industry, which will be specifically stated in final reports.

ROBERT P. PORTER,
Superintendent of Census.

CENSUS BULLETIN.

No. 272.

WASHINGTON, D. C.

October 20, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF SAGINAW, MICHIGAN.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 18, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Saginaw for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Saginaw were included in the totals published for Saginaw county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

SAGINAW COUNTY: 1880.

Number of establishments reported.....	428
Capital invested.....	\$5,155,235
Number of hands employed.....	4,529
Wages paid.....	\$1,478,131
Value of materials used.....	\$5,905,209
Value of product.....	\$9,312,465

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

INDUSTRIES.			Capital.	Hands employed.	Wages paid.	Cost of materials used.
	1880	1890				
All industries (a).....	50	247	\$11,117,064	5,019	\$2,324,015	\$6,260,840

INDUSTRIES.			Miscellaneous expenses.	Value of product.	MUNICIPAL DATA.		
	1880	1890			Population.	Assessed valuation.	Municipal debt. (b)
All industries (a).....	\$606,623	\$10,396,986	c29,541 46,322	c\$12,149,090 17,216,685	c\$813,275 974,500		

a Statistics of manufactures for 1880 were included in totals for Saginaw county. The totals stated for 1890 do not include returns from those manufacturers of "timber products not made in mill" having offices in Saginaw. This industry is reported as of the place where the office of the establishment is located, because it is not practicable to exactly locate its operations within the limit of a county or municipality. The totals of such reports obtained in Saginaw are as follows:

Number of establishments reported.....	25
Capital invested.....	\$5,253,307
Number of hands employed.....	3,236
Wages paid.....	\$724,304
Cost of materials used.....	\$851,965
Miscellaneous expenses.....	\$689,413
Value of product at works.....	\$2,271,271

b The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

c Saginaw and East Saginaw consolidated April 1, 1890; the two combined for 1880.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

Among other important industries, in which less than 3 establishments are reported, may be mentioned bottling, 1 establishment; leather, 1 establishment; tools, 2 establishments; wood turning, 1 establishment. The 5 establishments referred to report invested capital \$474,130, hands employed 265, and value of products \$764,439.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

CLASSIFICATION OF INQUIRIES.	Carriages and wagons. (6 establish- ments.)	Cooperage. (4 establish- ments.)	Flouring and grist mill products. (4 establish- ments.)	Foundry and machine shop products. (10 establish- ments.)	Furniture— factory prod- uct. (4 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$76,359	\$18,375	\$302,298	\$1,114,669	\$257,495
HIRED PROPERTY—Total.....	1,130	570	30,680	1,650	2,820
PLANT—Total.....	44,353	8,650	157,000	295,450	105,225
Land.....	17,400	3,000	21,000	56,150	17,440
Buildings.....	18,000	4,550	59,000	85,200	41,000
Machinery, tools, and implements.....	8,953	1,100	77,000	154,100	46,785
LIVE ASSETS—Total.....	30,876	4,155	114,648	317,569	149,450
Raw materials.....	6,885	1,875	31,011	39,800	64,600
Stock in process and finished product.....	10,792	1,030	27,500	77,450	50,300
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	13,199	1,250	56,137	700,319	34,550
WAGES PAID—Aggregate.....	\$36,653	\$9,928	\$30,939	\$296,771	\$110,811
Average number of hands employed during the year.....	61	21	73	465	276
Males above 16 years.....	60	12	73	464	251
Females above 15 years.....				1	
Children.....	1	9			25
Pieceworkers.....					
MATERIALS USED—Aggregate cost.....	\$32,575	\$13,187	\$405,396	\$309,897	\$70,637
Principal materials.....	31,367	13,037	380,566	245,676	61,517
Fuel.....	648		5,240	8,931	2,570
Mill supplies.....	560	150	19,590	25,150	1,450
All other materials.....				30,140	5,100
MISCELLANEOUS EXPENSES—Aggregate.....	\$2,378	\$650	\$23,976	\$79,303	\$14,181
Amount paid for contract work.....	96	40	2,300	150	240
Rent.....				800	
Power and heat.....			3,736	4,777	1,425
Taxes.....	544	230	4,857	3,623	3,080
Insurance.....	493	80	573	8,101	1,650
Repairs, ordinary, of buildings and machinery.....	420	50	9,000	4,963	7,800
Interest on cash used in the business.....	485		3,505	56,884	6
All sundries not elsewhere reported.....	340	250			
GOODS MANUFACTURED—Aggregate value.....	\$81,168	\$23,589	\$473,676	\$814,093	\$221,905
Principal product.....	40,650	21,189	393,550	666,461	221,905
All other products, including receipts from custom work and repairing.	40,518	2,400	85,126	147,637	

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Liquors—malt.	Lumber and other mill products from logs or bolts.	Lumber—planing mill products. (a)	Printing and publishing—newspapers and periodicals.	Tobacco—cigars and cigarettes.
	(5 establishments.)	(24 establishments.)	(7 establishments.)	(6 establishments.)	(16 establishments.)
CAPITAL EMPLOYED—Aggregate.....	\$231,530	\$6,694,688	\$997,055	\$122,219	\$72,770
HIRED PROPERTY—Total.....	26,230	105,840		35,620	34,540
PLANT—Total.....	129,200	3,288,852	419,000	63,500	3,840
Land.....	17,700	2,306,769	92,000	4,500	750
Buildings.....	51,500	274,591	121,000	12,000	1,400
Machinery, tools, and implements.....	60,000	707,492	206,000	47,000	1,690
LIVE ASSETS—Total.....	76,100	3,299,996	578,055	23,099	34,390
Raw materials.....	16,300	466,230	296,000	7,900	13,205
Stock in process and finished product.....	25,500	1,430,773	57,500	1,750	7,225
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	34,300	1,402,993	224,555	13,449	13,960
WAGES PAID—Aggregate.....	\$37,594	\$566,873	\$305,205	\$71,717	\$41,220
Average number of hands employed during the year.....	52	1,591	685	173	91
Males above 16 years.....	52	1,456	640	78	42
Females above 15 years.....		13	1	12	5
Children.....		122	35	49	1
Pieceworkers.....			9	34	43
MATERIALS USED—Aggregate cost.....	\$62,655	\$2,438,296	\$1,155,110	\$30,524	\$35,803
Principal materials.....	55,530	2,394,228	1,146,210	28,699	31,308
Fuel.....	3,625			1,260	35
Mill supplies.....	1,200	42,668	4,500	165	
All other materials.....	2,300	1,400	4,400	400	4,460
MISCELLANEOUS EXPENSES—Aggregate.....	\$48,081	\$255,441	\$41,440	\$14,322	\$13,346
Amount paid for contract work.....					
Rent.....	2,000	9,670		2,508	2,418
Power and heat.....					
Taxes.....	30,509	59,294	5,765	341	10,306
Insurance.....	1,135	42,422	22,150	578	337
Repairs, ordinary, of buildings and machinery.....	3,200	51,204	4,575	1,225	
Interest on cash used in the business.....		75,037	8,650	75	
All sundries not elsewhere reported.....	11,237	17,814	300	9,595	285
GOODS MANUFACTURED—Aggregate value.....	\$199,192	\$3,794,605	\$1,636,950	\$138,633	\$97,477
Principal product.....	199,092	3,606,520	1,511,950	138,633	97,477
All other products, including receipts from custom work and repairing.....	100	188,085	125,000		

a Includes several branches of this industry, which will be specifically stated in final reports.

ROBERT P. PORTER,
Superintendent of Census.

CENSUS BULLETIN.

No. 273.

WASHINGTON, D. C.

October 20, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF LOS ANGELES, CALIFORNIA.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 18, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Los Angeles for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Los Angeles were included in the totals published for Los Angeles county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows :

LOS ANGELES COUNTY: 1880.

Number of establishments reported.....	172
Capital invested.....	\$941,780
Number of hands employed.....	706
Wages paid.....	\$285,338
Value of materials used.....	\$1,011,379
Value of product.....	\$1,668,450

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital.	Hands employed.	Wages paid.	Cost of materials used.	
All industries (a)	{ 1880 1890	88	747	\$6,807,088	4,950	\$3,474,618	\$5,008,162

INDUSTRIES.	Miscellaneous expenses.	Value of product.	MUNICIPAL DATA.			
			Population.	Assessed valuation.	Municipal debt. (b)	
All industries (a)	{ 1880 1890	\$681,338	\$9,877,905	11,183 50,395	\$5,814,141 49,320,670	\$310,177 514,633

a Statistics of manufactures for 1880 were included in totals published for Los Angeles county.

b The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

CLASSIFICATION OF INQUIRIES.	Clay and pottery prod- ucts. (5 establish- ments.)	Confectionery. (11 establish- ments.)	Flouring and grist mill products. (5 establish- ments.)	Foundry and machine shop products. (10 establish- ments.)	Liquors— vinous. (10 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$177,312	\$158,318	\$614,869	\$314,482	\$372,210
HIRED PROPERTY—Total.....	13,100	110,000	4,750	22,400	47,500
PLANT—Total.....	305,500	12,250	201,800	156,340	102,860
Land.....	92,000		68,000	41,000	17,200
Buildings.....	110,500		30,400	26,000	12,760
Machinery, tools, and implements.....	103,000	12,250	53,400	89,340	72,900
LIVE ASSETS—Total.....	158,712	36,068	408,319	135,742	221,850
Raw materials.....	3,885	4,678	256,690	35,650	
Stock in process and finished product.....	74,984	16,108	20,821	40,600	164,400
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	79,843	15,282	130,808	59,492	57,450
WAGES PAID—Aggregate.....	\$93,954	\$59,192	\$126,412	\$128,933	\$42,845
Average number of hands employed during the year.....	125	67	94	172	108
Males above 16 years.....	119	46	92	169	86
Females above 15 years.....		21	2		1
Children.....				1	2
Pieceworkers.....	6			2	19
MATERIALS USED—Aggregate cost.....	\$115,874	\$72,213	\$1,010,873	\$137,507	\$66,244
Principal materials.....	43,037	61,729	926,753	120,727	57,076
Fuel.....	67,587	2,068	24,142	7,135	5,083
Mill supplies.....	3,000				
All other materials.....	2,250	8,416	59,978	9,645	4,085
MISCELLANEOUS EXPENSES—Aggregate.....	\$35,541	\$11,087	\$37,715	\$13,263	\$9,417
Amount paid for contract work.....					
Rent.....	1,200	9,860	450	2,110	4,350
Power and heat.....		120		390	
Taxes.....	1,442	293	3,708	1,614	1,217
Insurance.....	1,943	514	9,181	1,578	855
Repairs, ordinary, of buildings and machinery.....	2,956	120	7,154	2,913	2,300
Interest on cash used in the business.....	2,985		3,340	2,240	695
All sundries not elsewhere reported.....	25,015	180	13,882	2,418	
GOODS MANUFACTURED—Aggregate value.....	\$318,250	\$176,616	\$1,203,441	\$310,179	\$141,279
Principal product.....	315,250	174,426	1,094,439	177,460	140,779
All other products, including receipts from custom work and repairing.....	3,000	2,190	109,002	132,719	500

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Lumber— planing mill products. (a)	Paving and paving mate- rials.	Plumbers' supplies.	Printing and publishing. (a)	Slaughtering and meat packing— wholesale.
	(10 establish- ments.)	(11 establish- ments.)	(3 establish- ments.)	(38 establish- ments.)	(8 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$273,406	\$176,390	\$118,750	\$564,702	\$281,322
HIRED PROPERTY—Total.....	52,100	6,000	10,500	215,000	93,250
PLANT—Total.....	117,632	35,890	35,800	220,946	40,000
Land.....	9,700	1,500	6,350	47,057	5,500
Buildings.....	22,700	1,200	12,750	34,775	15,000
Machinery, tools, and implements.....	85,232	33,190	16,700	139,114	19,500
LIVE ASSETS—Total.....	103,764	134,500	72,450	128,756	148,072
Raw materials.....	21,811	2,900	5,000	14,098	33,650
Stock in process and finished product.....	18,400	96,400	9,500	6,629	15,350
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	63,553	35,200	57,950	108,029	99,072
WAGES PAID—Aggregate.....	\$175,820	\$73,598	\$47,822	\$273,604	\$68,192
Average number of hands employed during the year.....	188	125	50	311	79
Males above 16 years.....	185	125	50	201	79
Females above 15 years.....				27	
Children.....	2			10	
Pieceworkers.....	1			73	
MATERIALS USED—Aggregate cost.....	\$135,666	\$109,302	\$59,865	\$94,407	\$803,676
Principal materials.....	129,672	108,662	55,600	88,852	781,410
Fuel.....	2,404	540	3,615	3,069	15,810
Mill supplies.....	1,200				
All other materials.....	2,390	100	650	2,486	6,456
MISCELLANEOUS EXPENSES—Aggregate.....	\$14,667	\$3,662	\$3,451	\$89,361	\$13,793
Amount paid for contract work.....					
Rent.....	4,770	540	960	18,907	8,510
Power and heat.....				560	
Taxes.....	1,344	31	311	1,066	1,067
Insurance.....	4,388	91	410	1,778	766
Repairs, ordinary, of buildings and machinery.....	3,545	2,755	570	2,671	1,950
Interest on cash used in the business.....	620	245	1,200	5,476	500
All sundries not elsewhere reported.....				58,903	1,000
GOODS MANUFACTURED—Aggregate value.....	\$340,166	\$205,684	\$139,500	\$497,414	\$964,509
Principal product.....	133,775	13,000	131,000	495,294	926,097
All other products, including receipts from custom work and repairing.....	206,391	192,684	8,500	2,120	38,412

a Includes several branches of this industry, which will be specifically stated in final reports.

ROBERT P. PORTER,
Superintendent of Census.

CENSUS BULLETIN.

No. 274.

WASHINGTON, D. C.

October 20, 1892.

STATISTICS OF MANUFACTURES: 1890.

SIoux CITY, IOWA.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 18, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of Sioux city for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Sioux city were included in the totals published for Woodbury county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

WOODBURY COUNTY: 1880.

Number of establishments reported.....	91
Capital invested.....	\$705,550
Number of hands employed.....	479
Wages paid.....	\$192,478
Value of materials used.....	\$846,095
Value of product.....	\$1,233,666

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

INDUSTRIES.			Number industries reported.	Number establish- ments reporting.	Capital.	Hands employed.	Wages paid.	Cost of materi- als used.
	1880	1890						
All industries (a).....	1880	1890	50	195	\$4,933,606	2,907	\$1,862,612	\$10,329,994

INDUSTRIES.			Miscellaneous expenses.	Value of product.	MUNICIPAL DATA.		
	1880	1890			Population.	Assessed valuation.	Municipal debt. (b)
All industries (a).....	1880	1890	\$478,757	\$14,164,667	7,366 37,806	\$927,131 16,231,528	\$67,200 750,211

^a Statistics of manufactures for 1880 were included in totals published for Woodbury county.

^b The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

Among other important industries, in which less than 3 establishments are reported, may be mentioned foundry and machine shop products, 2 establishments; oil, linseed, 1 establishment. The 3 establishments referred to report invested capital, \$647,965; hands employed, 144, and value of products, \$950,230.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

CLASSIFICATION OF INQUIRIES.	Brick and tile.	Carriages and wagons.	Confectionery	Druggists' preparations— not including prescriptions.	Flouring and grist mill products.
	(3 establish- ments.)	(4 establish- ments.)	(4 establish- ments.)	(5 establish- ments.)	(3 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$252,076	\$30,150	\$89,280	\$61,125	\$363,350
HIRED PROPERTY—Total.....		8,150	57,250	45,125	32,850
PLANT—Total.....	187,200	2,250	4,400	4,150	150,000
Land.....	142,000				55,000
Buildings.....	30,200	600			25,000
Machinery, tools, and implements.....	15,000	1,650	4,400	4,150	70,000
LIVE ASSETS—Total.....	64,876	19,750	27,630	11,850	180,500
Raw materials.....	15,000	1,950	4,850	3,750	68,000
Stock in process and finished product.....	23,187	6,300	7,050	3,900	17,500
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	26,689	11,500	15,730	4,200	95,000
WAGES PAID—Aggregate.....	\$48,897	\$20,856	\$19,386	\$11,708	\$32,620
Average number of hands employed during the year.....	96	28	55	18	41
Males above 16 years.....	93	27	30	17	41
Females above 15 years.....		1	25		
Children.....				1	
Pieceworkers.....	3				
MATERIALS USED—Aggregate cost.....	\$14,215	\$17,342	\$42,995	\$13,709	\$378,060
Principal materials.....	14,140	15,500	38,319	12,760	364,900
Fuel.....		742	742	374	6,560
Mill supplies.....			54		
All other materials.....	75	1,100	3,880	575	6,600
MISCELLANEOUS EXPENSES—Aggregate.....	\$8,740	\$2,180	\$5,213	\$4,742	\$13,605
Amount paid for contract work.....					
Rent.....		840	4,616	3,654	3,000
Power and heat.....			100		
Taxes.....	702	327	80	198	1,375
Insurance.....	335	288	137	380	3,130
Repairs, ordinary, of buildings and machinery.....	3,240	525	90	210	2,700
Interest on cash used in the business.....	2,577	200	40	200	1,100
All sundries not elsewhere reported.....	1,386		150	100	2,300
GOODS MANUFACTURED—Aggregate value.....	\$106,020	\$54,884	\$95,047	\$31,520	\$143,400
Principal product.....	106,020	44,684	95,047	31,520	441,100
All other products, including receipts from custom work and repairing.....		10,200			2,300

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Iron work— architectural and ornamental. (3 establish- ments.)	Lumber— planing mill products. (a) (4 establish- ments.)	Saddlery and harness. (10 establish- ments.)	Slaughtering and meat packing— wholesale. (3 establish- ments.)	Tobacco— cigars, and cigarettes. (6 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$82,869	\$176,877	\$194,925	\$2,309,886	\$72,250
HIRED PROPERTY—Total.....	9,000	11,950	66,600	647,150	32,250
PLANT—Total.....	14,356	92,216	35,375	495,000	675
Land.....	9,000	42,000	10,000	75,000	.....
Buildings.....	1,000	21,500	6,000	250,000	.....
Machinery, tools, and implements.....	4,356	28,716	19,375	170,000	675
LIVE ASSETS—Total.....	9,513	72,711	92,950	1,167,736	39,325
Raw materials.....	1,900	18,970	19,100	26,039	9,775
Stock in process and finished product.....	3,300	11,200	27,000	920,972	5,850
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	4,313	42,541	46,850	220,725	24,200
WAGES PAID—Aggregate.....	\$13,388	\$80,605	\$40,188	\$326,495	\$20,378
Average number of hands employed during the year.....	17	146	69	626	36
Males above 16 years.....	17	144	67	613	26
Females above 15 years.....	.....	1	.....	3	.....
Children.....	.....	.....	1	10	2
Pieceworkers.....	.....	1	1	.....	8
MATERIALS USED—Aggregate cost.....	\$14,525	\$101,415	\$62,698	\$6,872,132	\$23,062
Principal materials.....	13,375	63,065	59,840	6,681,202	21,300
Fuel.....	525	1,450	583	34,491	234
Mill supplies.....	.....	500	.....	.....	.....
All other materials.....	625	36,400	2,275	156,439	2,428
MISCELLANEOUS EXPENSES—Aggregate.....	\$1,947	\$7,844	\$8,696	\$192,373	\$6,386
Amount paid for contract work.....	.....	.....	.....	.....	.....
Rent.....	925	1,220	5,379	55,076	2,590
Power and heat.....	.....	.....	.....	.....	.....
Taxes.....	147	351	1,004	4,500	3,580
Insurance.....	118	2,000	607	12,839	151
Repairs, ordinary, of buildings and machinery.....	150	1,475	456	6,194	15
Interest on cash used in the business.....	107	2,768	1,005	58,436	50
All sundries not elsewhere reported.....	500	30	245	55,328	.....
GOODS MANUFACTURED—Aggregate value.....	\$41,500	\$226,500	\$114,260	\$7,589,228	\$150,466
Principal product.....	37,000	176,500	92,816	7,526,817	159,466
All other products, including receipts from custom work and repairing.....	4,500	50,000	21,444	62,411	.....

^a Includes several branches of this industry, which will be specifically stated in final reports.

ROBERT P. PORTER,
Superintendent of Census.

CENSUS BULLETIN.

No. 275.

WASHINGTON, D. C.

October 22, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF CAMDEN, NEW JERSEY.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 20, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Camden for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: Cars, and general shop construction and repairs by steam railroad companies; millinery, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	4
Capital invested.....	\$280, 823
Number of hands employed.....	421
Wages paid.....	\$255, 314
Cost of materials used.....	\$452, 681
Miscellaneous expenses.....	\$552
Value of product at works.....	\$711, 176

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

Number of establishments reported.....	48.29
Capital invested.....	87.26
Number of hands employed.....	62.61
Wages paid.....	132.20
Cost of materials used.....	84.53
Value of product at works.....	87.45
Population of city.....	39.98
Assessed valuation of city.....	55.13
Municipal debt less sinking fund.....	14.33

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$372 in 1880 to \$531 in 1890, or 42.74 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; that the percentage of increase in the number of women employed has been less in many industries than in the number of adult males; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

Robert P. Porter
 Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF CAMDEN, NEW JERSEY.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. * * * They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.	
							All industries.....

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	{ 1880 1890	\$7,644,705 15,041,113	41,659 58,313	\$11,566,085 17,942,050	\$1,161,900 1,331,850

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Boots and shoes —factory prod- uct.	Carriages and wagons.	Chemicals. (b)	Confectionery.
	(22 establish- ments.)	(6 establish- ments.)	(3 establish- ments.)	(11 establish- ments.)
CAPITAL EMPLOYED—Aggregate	\$209,336	\$329,493	\$1,018,737	\$85,735
HIRED PROPERTY—Total	36,010	139,870	16,140	49,890
PLANT—Total	67,009	43,925	496,000	7,705
Land	9,950	17,800	107,000	
Buildings	18,900	8,000	272,000	
Machinery, tools, and implements	38,159	18,125	117,000	7,705
LIVE ASSETS—Total	103,317	145,098	506,597	8,140
Raw materials	27,701	24,983	137,865	3,115
Stock in process and finished product	11,047	57,073	141,029	2,275
Cash, bills and accounts receivable, and all sundries not elsewhere reported	67,569	63,042	227,703	2,750
WAGES PAID—Aggregate	\$226,188	\$97,908	\$125,634	\$26,950
Average number of hands employed during the year	451	141	248	56
Males above 16 years	119	141	248	30
Females above 15 years	64			20
Children				6
Pieceworkers	264			
MATERIALS USED—Aggregate cost	\$415,622	\$72,066	\$483,600	\$53,902
Principal materials	309,534	55,941	440,400	49,544
Fuel	1,166	1,525	29,700	758
Mill supplies			1,500	
All other materials	14,922	14,600	12,000	3,600
MISCELLANEOUS EXPENSES—Aggregate	\$8,507	\$19,204	\$45,144	\$4,041
Amount paid for contract work				
Rent	2,538	11,230	1,143	3,507
Power and heat	120			
Taxes	307	157	4,282	
Insurance	801	2,192	4,772	84
Repairs, ordinary, of buildings and machinery	2,351	850	3,400	445
Interest on cash used in the business	1,140	2,275	8,794	
All sundries not elsewhere reported	1,250	3,000	22,773	5
GOODS MANUFACTURED—Aggregate value	\$814,402	\$210,023	\$797,200	\$108,943
Principal product	814,402	172,523	797,200	108,943
All other products, including receipts from custom work and repairing		37,500		

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.
 b Includes several branches of this industry, which will be specifically stated in final reports.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Lumber. (a)	Oilcloth—floor.	Shipbuilding.	Textiles. (a)
	(7 establishments.)	(4 establishments.)	(8 establishments.)	(12 establishments.)
CAPITAL EMPLOYED—Aggregate	\$734,189	\$586,900	\$1,430,085	\$1,819,597
Hired PROPERTY—Total	70,625		269,840	50,615
PLANT—Total	312,500	309,745	647,050	898,047
Land	247,500	83,600	305,000	62,000
Buildings	26,100	115,000	85,500	273,700
Machinery, tools, and implements	38,900	81,745	256,550	562,347
LIVE ASSETS—Total	351,064	277,155	513,195	870,935
Raw materials	118,606	48,192	53,643	248,576
Stock in process and finished product	97,679	110,141	431,030	312,353
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	134,779	118,822	28,522	310,006
WAGES PAID—Aggregate	\$89,916	\$198,273	\$302,790	\$475,404
Average number of hands employed during the year	161	318	339	1,493
Males above 16 years	159	159	323	604
Females above 16 years	2	1		608
Children				98
Pieceworkers		158	16	183
MATERIALS USED—Aggregate cost	\$401,811	\$586,695	\$707,979	\$1,702,070
Principal materials	396,157	543,490	600,929	1,615,817
Fuel	500	14,975	1,000	26,867
Mill supplies	3,117	4,195		
All other materials	2,037	24,035	16,050	59,396
MISCELLANEOUS EXPENSES—Aggregate	\$23,013	\$37,973	\$35,623	\$161,987
Amount paid for contract work				
Rent	5,672		18,920	4,200
Power and heat				700
Taxes	2,565	1,481	1,840	4,160
Insurance	2,191	8,027	6,830	8,537
Repairs, ordinary, of buildings and machinery	2,130	6,623	6,145	19,850
Interest on cash used in the business	7,405	5,623	300	55,571
All sundries not elsewhere reported	3,050	16,219	1,588	68,969
GOODS MANUFACTURED—Aggregate value	\$577,082	\$973,500	\$1,132,820	\$2,632,774
Principal product	570,510	973,500	756,320	838,242
All other products, including receipts from custom work and repairing	6,572		376,500	1,794,532

a Includes several branches of this industry, which will be specifically stated in final reports.

CENSUS BULLETIN.

No. 276.

WASHINGTON, D. C.

October 22, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF SPRINGFIELD, MASSACHUSETTS.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 20, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Springfield for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; druggists' preparations, not including prescriptions; illuminating gas; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	161
Capital invested.....	\$1,260,685
Number of hands employed.....	1,308
Wages paid.....	\$647,742
Cost of materials used.....	\$578,652
Miscellaneous expenses.....	\$50,192
Value of product at works.....	\$1,417,782

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.	
Number of establishments reported.....	19.82
Capital invested	0.94
Number of hands employed.....	11.44
Wages paid.....	63.22
Value of product at works.....	14.60
Population of city.....	32.51
Assessed valuation of city.....	42.84

Decrease in cost of materials used, 9.34 per cent.

Decrease of municipal debt less sinking fund, 30.50 per cent.

The decrease in total cost of materials used is principally found in the manufacture of clothing, envelopes, printing and publishing, slaughtering and meat packing, and cigars and cigarettes. In 1880 the aggregate cost of materials reported for the industries named was 74 per cent of the aggregate value of products, while in 1890 such cost is 45 per cent of the value of products.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$395 in 1880 to \$578 in 1890, or 46.33 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; that the percentage of increase in the number of women employed has been less in many industries than in the number of adult males; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employés. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

Robert P. Porter

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF SPRINGFIELD, MASSACHUSETTS.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. * * * They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....		\$12,891,826 16,191,456	33,340 44,179	\$81,148,675 44,493,633	\$1,928,000 1,339,940

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full

amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amount of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Boxes—fancy and paper. (8 establish- ments.)	Buttons. (4 establish- ments.)	Confectionery. (3 establish- ments.)	Envelopes. (3 establish- ments.)	Foundry and machine shop products. (13 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$185,425	\$276,097	\$104,633	\$741,732	\$1,177,704
Hired property—Total.....	67,726	5,576	80,185	121,220	47,500
PLANT—Total.....	35,542	114,218	4,300	190,212	668,019
Land.....		14,817			117,764
Buildings.....		30,685			234,000
Machinery, tools, and implements.....	35,542	68,716	4,300	190,212	316,255
LIVE ASSETS—Total.....	82,157	156,303	20,148	430,300	462,185
Raw materials.....	27,471	41,333	5,208	180,800	77,782
Stock in process and finished product.....	25,260	52,075	4,140	36,681	196,800
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	29,426	62,895	10,800	212,819	187,603
WAGES PAID—Aggregate.....	\$67,255	\$153,130	\$37,432	\$152,767	\$338,421
Average number of hands employed during the year.....	160	436	70	411	562
Males above 16 years.....	48	112	60	108	560
Females above 15 years.....	40	247	10	82	2
Children.....		25		16	
Pieceworkers.....	72	52		205	
MATERIALS USED—Aggregate cost.....	\$160,432	\$130,186	\$86,966	\$515,943	\$660,550
Principal materials.....	158,131	118,521	84,198	463,725	589,750
Fuel.....	150	2,665	2,768	1,745	21,141
Mill supplies.....					16,460
All other materials.....	2,151	9,000		50,473	33,199
MISCELLANEOUS EXPENSES—Aggregate.....	\$16,873	\$8,910	\$5,909	\$49,996	\$65,492
Amount paid for contract work.....					
Rent.....	5,413	460	3,340	8,480	3,570
Power and heat.....	1,410	680		1,975	3,200
Taxes.....	296	2,918	182	3,236	12,589
Insurance.....	1,177	1,602	387	2,280	2,853
Repairs, ordinary, of buildings and machinery.....	1,275	2,500		500	5,777
Interest on cash used in the business.....	3,152	750		15,500	9,423
All sundries not elsewhere reported.....	4,145		2,000	18,045	28,100
GOODS MANUFACTURED—Aggregate value.....	\$270,865	\$348,308	\$143,140	\$1,059,112	\$1,236,944
Principal product.....	270,865	348,308	143,140	1,058,217	1,236,944
All other products, including receipts from custom work and repairing.....				30,895	

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Paper goods (not elsewhere specified). (a) (4 establish- ments.)	Printing and publishing. (24 establish- ments.)	Slaughtering and meat packing— wholesale. (4 establish- ments.)	Textiles. (a) (7 establish- ments.)	Tools. (4 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$293,182	\$958,226	\$141,050	\$717,043	\$197,717
Hired property—Total.....	125,100	233,325	37,500	315,400	11,000
PLANT—Total.....	41,212	454,264	17,850	89,777	92,057
Land.....		56,700		2,000	9,365
Buildings.....		65,800	350	8,000	18,000
Machinery, tools, and implements.....	41,212	331,764	17,500	79,777	64,692
LIVE ASSETS—Total.....	126,870	265,637	85,700	311,866	94,660
Raw materials.....	36,685	28,569	7,500	93,835	11,724
Stock in process and finished product.....	21,025	17,937	34,500	105,144	51,359
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	69,160	222,131	43,700	112,887	31,577
WAGES PAID—Aggregate.....	\$29,967	\$334,969	\$46,388	\$78,190	\$53,482
Average number of hands employed during the year.....	45	518	66	210	88
Males above 16 years.....	39	346	65	33	75
Females above 15 years.....	6	94	1	67	
Children.....		4		3	1
Pieceworkers.....		74		107	12
MATERIALS USED—Aggregate cost.....	\$167,448	\$198,696	\$385,287	\$496,749	\$35,596
Principal materials.....	163,167	168,445	383,657	426,333	28,518
Fuel.....	2,174	3,173	1,630	799	1,566
Mill supplies.....	2,107			48,939	500
All other materials.....		27,078		20,678	5,012
MISCELLANEOUS EXPENSES—Aggregate.....	\$16,762	\$101,834	\$7,813	\$43,333	\$11,823
Amount paid for contract work.....		14,250			
Rent.....	8,680	16,596	3,010	22,440	895
Power and heat.....	820	3,811	282	1,460	450
Taxes.....	862	4,227	451	2,137	1,195
Insurance.....	815	3,089	445	2,839	938
Repairs, ordinary, of buildings and machinery.....	1,685	4,746	125	1,400	2,116
Interest on cash used in the business.....	1,620	11,312	300	10,714	
All sundries not elsewhere reported.....	2,280	43,803	3,200	2,343	6,179
GOODS MANUFACTURED—Aggregate value.....	\$245,473	\$725,522	\$502,136	\$670,920	\$126,127
Principal product.....	243,552	726,522	498,136	201,304	125,627
All other products, including receipts from custom work and reworking.....	1,921		4,000	469,616	500

a Includes several branches of this industry, which will be specifically stated in final reports.

CENSUS BULLETIN.

No. 277.

WASHINGTON, D. C.

October 22, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF WILKESBARRE, PENNSYLVANIA.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 20, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Wilkesbarre for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	24
Capital invested	\$54,200
Number of hands employed.....	196
Wages paid.....	\$54,830
Cost of materials used.....	\$71,630
Miscellaneous expenses.....	\$7,137
Value of product at works	\$145,459

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.	
Number of establishments reported	47.19
Capital invested	177.63
Number of hands employed	340.78
Wages paid	451.15
Cost of materials used	266.79
Value of product at works	288.76
Population of city	61.61
Assessed valuation of city	168.76
Municipal debt less sinking fund	85.60

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$346 in 1880 to \$433 in 1890, or 25.14 per cent.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

Robert D. Torles

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF WILKESBARRE, PENNSYLVANIA.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. * * * They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (c)	Hands employed.	Wages paid.	Cost of materials used.

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	\$152,786	\$1,133,244 4,551,446	23,339 37,718	\$2,822,935 7,586,938	\$95,097 176,500

^a The value of hired property is not included for 1890, because it was not reported in 1880.

^b No inquiry in 1880 relating to "Miscellaneous expenses."

^c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Carriages and wagons. (b)	Flouring and grist mill products.	Foundry and machine shop products.	Lumber— planing mill products, etc. (b)	Wire work. (b)
	(5 establish- ments.)	(3 establish- ments.)	(8 establish- ments.)	(3 establish- ments.)	(4 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$851,081	\$84,026	\$61,486	\$92,303	\$863,090
HIRED PROPERTY—Total	6,100	17,650	15,410	22,750	7,100
PLANT—Total.....	421,071	41,500	43,176	27,500	428,560
Land.....	36,590	13,000	11,500	13,500	76,050
Buildings.....	117,402	11,000	8,200	6,500	127,000
Machinery, tools, and implements.....	267,079	17,500	23,476	7,500	225,500
LIVE ASSETS—Total	423,910	24,876	2,900	42,053	427,430
Raw materials.....	121,464	4,000	200	4,000	78,750
Stock in process and finished product.....	98,463	6,900	500	7,000	125,980
Cash, bills and accounts receivable, and all sundries not else- where reported.....	203,983	13,976	2,200	31,053	222,700
WAGES PAID—Aggregate.....	\$294,021	\$14,690	\$27,088	\$33,890	\$108,465
Average number of hands employed during the year	559	29	41	66	190
Males above 16 years.....	274	29	41	63	136
Females above 15 years.....	1				
Children.....				3	34
Pieceworkers.....	284				20
MATERIALS USED—Aggregate cost	\$513,541	\$159,630	\$34,094	\$48,440	\$360,701
Principal materials.....	409,397	150,343	30,921	48,260	334,146
Fuel.....	11,187	1,900	1,173	180	3,545
Mill supplies.....	92,957		2,000		2,020
All other materials.....		7,387			20,990
MISCELLANEOUS EXPENSES—Aggregate.....	\$38,875	\$3,524	\$2,072	\$4,786	\$10,737
Amount paid for contract work.....					
Rent.....	500	1,400	1,213	1,800	565
Power and heat.....			70		
Taxes.....	1,507	201	109	196	2,497
Insurance.....	2,658	950	160	820	2,215
Repairs, ordinary, of buildings and machinery.....	10,284	367	25	1,000	5,270
Interest on cash used in the business.....	23,917	606	450	270	
All sundries not elsewhere reported.....	9		45	700	190
GOODS MANUFACTURED—Aggregate value	\$940,576	\$197,900	\$80,086	\$92,500	\$539,234
Principal product.....	920,576	119,900	80,086	59,500	538,410
All other products, including receipts from custom work and repairing.....	20,000	78,000		33,000	874

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.
b Includes several branches of this industry, which will be specifically stated in final reports.

CENSUS BULLETIN.

No. 278.

WASHINGTON, D. C.

October 22, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF NEW ORLEANS, LOUISIANA.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 20, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of New Orleans for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; china and pottery decorating; cotton cleaning and rehandling; druggists' preparations, not including prescriptions; drug grinding; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	129
Capital invested	\$489,564
Number of hands employed.....	759
Wages paid.....	\$255,760
Cost of materials used.....	\$302,417
Miscellaneous expenses.....	\$43,270
Value of product at works	\$765,077

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

Number of establishments reported	90.49
Capital invested.....	135.91
Number of hands employed	129.42
Wages paid	156.53
Cost of materials used.....	60.36
Value of product at works.....	80.80
Population of city.....	12.01
Assessed valuation of city	43.71

Decrease in municipal debt less sinking fund, 4.73 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid. Although the greatest increase has occurred in the number of adult females employed in the manufacture of clothing, cigars, and textiles, and receiving relatively low wages, yet, considering the total number of hands employed in all industries, the average wages per hand have increased from \$391 in 1880 to \$437 in 1890, or 11.76 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

Robert D. Torles

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF NEW ORLEANS, LOUISIANA.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. * * * They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 and 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	-----	\$18,808,096 34,770,519	216,090 242,039	\$91,794,350 131,915,059	\$17,736,509 16,897,454

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Boots and shoes—factory product. (17 establishments.)	Clothing—men's, wholesale. (23 establishments.)	Cooperage. (69 establishments.)	Foundry and machine shop products. (33 establishments.)	Liquors—malt. (8 establishments.)
CAPITAL EMPLOYED—Aggregate	\$384,994	\$1,230,237	\$532,326	\$1,630,099	\$3,198,082
HIRED PROPERTY—Total	91,760	308,610	155,140	122,460	9,850
PLANT—Total	109,625	115,291	161,005	856,893	2,452,600
Land	22,700	39,400	74,050	285,600	450,000
Buildings	25,800	42,900	66,200	178,200	920,000
Machinery, tools, and implements	61,125	32,991	20,755	393,093	1,082,600
LIVE ASSETS—Total	183,619	806,336	216,181	650,746	736,632
Raw materials	57,986	219,128	51,418	115,663	90,750
Stock in process and finished product	55,183	259,760	79,008	199,495	455,182
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	70,440	327,448	85,757	335,588	189,700
WAGES PAID—Aggregate	\$365,280	\$515,381	\$288,027	\$719,245	\$270,884
Average number of hands employed during the year	825	3,225	650	1,074	282
Males above 16 years	366	158	450	1,054	282
Females above 15 years	3	487		3	
Children	60	4	9	2	
Pieceworkers	406	2,576	191	15	
MATERIALS USED—Aggregate cost	\$333,979	\$1,144,547	\$331,029	\$860,071	\$592,562
Principal materials	328,652	1,139,407	326,743	786,671	414,521
Fuel	1,620	10	456	31,473	60,261
Mill supplies			300	407	
All other materials	3,707	5,130	3,530	41,520	117,780
MISCELLANEOUS EXPENSES—Aggregate	\$13,053	\$43,035	\$23,105	\$51,425	\$839,331
Amount paid for contract work					900
Rent	8,766	23,308	13,255	12,420	
Power and heat	500	2,850		576	
Taxes	1,215	3,148	1,622	1,512	6279,400
Insurance	1,437	3,671	3,813	7,090	15,531
Repairs, ordinary, of buildings and machinery	525	1,100	2,355	9,833	168,500
Interest on cash used in the business	150	460	780	7,868	
All sundries not elsewhere reported	460	8,500	1,280	12,126	375,000
GOODS MANUFACTURED—Aggregate value	\$908,017	\$1,884,747	\$793,361	\$1,967,702	\$1,905,760
Principal product	883,427	1,884,747	721,048	1,715,365	1,905,760
All other products, including receipts from custom work and repairing	24,590		72,313	252,337	

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

b Includes internal revenue taxes.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Lumber. (a) (22 establish- ments.)	Printing and publishing. (a) (78 establish- ments.)	Rice cleaning and polishing. (14 establish- ments.)	Sugar and mo- lasses— refining. (4 establish- ments.)	Tobacco. (a) (80 establish- ments.)
CAPITAL EMPLOYED—Aggregate	\$1,365,275	\$1,254,576	\$1,087,300	\$282,050	\$706,682
Hired property—Total	76,920	481,720	116,900	54,750	312,380
Plant—Total	575,160	387,684	472,000	124,200	79,336
Land.....	182,500	13,000	91,300	6,000	11,200
Buildings.....	128,200	24,500	141,000	4,000	14,300
Machinery, tools, and implements.....	264,450	350,184	239,700	114,200	53,836
Live assets—Total	713,205	383,172	498,400	103,100	404,966
Raw materials.....	243,080	64,862	99,000	6,169	154,855
Stock in process and finished product.....	197,150	32,370	44,600	2,506	89,492
Cash, bills and accounts receivable, and all sundries not else- where reported.....	302,975	287,940	354,800	94,425	160,619
WAGES PAID—Aggregate	\$527,050	\$638,415	\$162,950	\$63,728	\$808,294
Average number of hands employed during the year.....	960	902	363	97	2,102
Males above 16 years.....	898	643	355	85	460
Females above 15 years.....	4	40	4		302
Children.....		80	4	4	12
Pieceworkers.....	68	189		8	1,328
MATERIALS USED—Aggregate cost	\$853,948	\$284,239	\$3,056,750	\$1,401,660	\$633,375
Principal materials.....	820,071	264,691	2,946,185	1,382,560	597,667
Fuel.....	1,324	4,781	34,314	19,100	2,810
Mill supplies.....	9,473		11,510		
All other materials.....	14,080	14,767	64,741		32,898
MISCELLANEOUS EXPENSES—Aggregate	\$64,762	\$279,281	\$80,238	\$34,455	\$297,292
Amount paid for contract work.....					
Rent.....	7,776	38,778	10,545	4,960	26,683
Power and heat.....		4,181			2,500
Taxes.....	4,374	3,693	7,873	2,750	2,597,712
Insurance.....	18,039	6,123	10,720	1,245	5,231
Repairs, ordinary, of buildings and machinery.....	11,373	3,788	31,800	4,500	445
Interest on cash used in the business.....	5,210	3,364	15,500	2,500	921
All sundries not elsewhere reported.....	18,000	219,446	3,800	18,500	1,800
GOODS MANUFACTURED—Aggregate value	\$1,695,928	\$1,392,712	\$3,577,885	\$1,530,323	\$1,841,685
Principal product.....	1,556,328	1,383,942	3,538,687	1,520,323	1,718,346
All other products, including receipts from custom work and repairing.....	139,600	8,770	39,198	1,000	123,339

a Includes several branches of this industry, which will be specifically stated in final reports.
b Includes internal revenue taxes.

CENSUS BULLETIN.

No. 279.

WASHINGTON, D. C.

October 22, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF DETROIT, MICHIGAN.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 20, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Detroit for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the items of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; china and pottery, decorating; druggists' preparations, not including prescriptions; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported	26
Capital invested	\$396,124
Number of hands employed	1,119
Wages paid	\$551,867
Cost of materials used	\$1,405,654
Miscellaneous expenses	\$15,101
Value of product at works	\$2,171,000

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.	
Number of establishments reported	86.94
Capital invested	174.97
Number of hands employed.....	130.68
Wages paid	191.13
Cost of materials used.....	119.38
Value of product at works.....	148.06
Population of city	76.96
Assessed valuation of city.....	73.07

Decrease of municipal debt less sinking fund, 2.96 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$391 in 1880 to \$494 in 1890, or 26.34 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; that the percentage of increase in the number of women employed has been less in many industries than in the number of adult males; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

Robert D. Teller

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF DETROIT, MICHIGAN.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical denistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. * * * They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (b)	Hands employed.	Wages paid.	Cost of materials used.
All industries (a).....	100 159	919 1,744	\$15,594,479 43,275,940	16,110 38,281	\$6,306,460 18,911,712	\$18,150,995 41,225,534

INDUSTRIES.	Miscellaneous expenses. (c)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (d)
All industries (a).....	\$6,065,408	\$30,181,416 77,039,177	116,340 205,876	\$83,198,040 143,993,438	\$2,282,772 2,215,226

a The totals stated for 1890 do not include returns from manufacturers of "timber products not made in mill", having offices in Detroit. This industry is reported as of the place where the office of the establishment is located, because it is not practicable to exactly locate its operations within the limits of a county or municipality. The totals of such reports obtained in Detroit are as follows:

Number of establishments reported.....	3	Cost of materials used.....	\$553,157
Capital invested.....	\$2,782,061	Miscellaneous expenses.....	\$46,391
Number of hands employed.....	737	Value of product at works.....	\$1,218,920
Wages paid.....	\$367,136		

b The value of hired property is not included for 1890, because it was not reported in 1880.

c No inquiry in 1880 relating to "Miscellaneous expenses".

d The amount stated represents the "net debt", for the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Boots and shoes —factory prod- uct. (7 establish- ments.)	Cars—steam railroad. (4 establish- ments.)	Chemicals and paints. (29 establish- ments.)	Flouring and grist mill prod- ucts. (9 establish- ments.)	Foundry and machine shop products. (76 establish- ments.)
CAPITAL EMPLOYED—Aggregate	\$975,907	\$3,628,736	\$3,968,814	\$482,925	\$8,103,114
HIRED PROPERTY—Total	234,700		211,440	78,090	296,200
PLANT—Total	100,052	1,536,472	1,202,935	247,200	3,276,977
Land		541,077	279,650	75,200	909,059
Buildings		502,638	408,683	54,000	958,077
Machinery, tools, and implements	100,052	492,757	514,602	118,000	1,409,841
LIVE ASSETS—Total	641,155	2,092,264	2,554,439	157,725	4,529,937
Raw materials	101,875	409,532	564,396	65,110	732,440
Stock in process and finished product	138,120	572,335	1,053,339	19,300	1,237,388
Cash, bills and accounts receivable, and all sundries not else- where reported	351,100	1,110,397	936,704	73,315	2,560,109
WAGES PAID—Aggregate	\$476,424	\$1,604,440	\$885,298	\$65,891	\$3,289,155
Average number of hands employed during the year	1,025	3,615	1,718	110	5,889
Males above 16 years	162	3,372	1,072	107	4,621
Females above 15 years	73	6	366	3	28
Children			5		54
Pieceworkers	790	237	275		1,186
MATERIALS USED—Aggregate cost	\$913,916	\$7,350,974	\$2,508,885	\$1,348,976	\$4,171,623
Principal materials	862,116	7,051,564	2,010,369	1,282,520	3,821,700
Fuel	5,800	68,622	26,049	13,238	157,162
Mill supplies		18,274	2,415	1,300	32,228
All other materials	46,000	212,514	470,052	51,918	160,533
MISCELLANEOUS EXPENSES—Aggregate	\$155,322	\$205,711	\$601,072	\$30,665	\$458,431
Amount paid for contract work					
Rent	16,429		15,858	6,200	25,177
Power and heat	1,376		1,160		5,652
Taxes	4,523	11,407	29,110	4,885	51,976
Insurance	7,050	13,363	21,338	2,630	24,068
Repairs, ordinary, of buildings and machinery	6,450	28,746	11,437	7,150	30,658
Interest on cash used in the business	25,146		39,593	3,500	39,594
All sundries not elsewhere reported	94,348	152,195	482,576	6,200	231,306
GOODS MANUFACTURED—Aggregate value	\$1,611,700	\$10,278,281	\$5,249,505	\$1,613,063	\$9,516,461
Principal product	1,611,700	9,840,237	5,249,505	1,586,711	9,338,577
All other products, including receipts from custom work and repairing		438,044		26,352	177,884

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.— DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Iron and steel. (a) (7 establish- ments.)	Lumber— planing mill products. (a) (31 establish- ments.)	Printing and publishing. (a) (85 establish- ments.)	Slaughtering and meat packing— wholesale. (3 establish- ments.)	Tobacco—chew- ing, smoking, and snuff. (5 establish- ments.)
CAPITAL EMPLOYED—Aggregate	\$2,143,352	\$1,617,729	\$2,169,225	\$697,313	\$1,843,960
Hired property—Total		188,000	638,200	22,150	257,500
PLANT—Total	924,260	588,102	932,416	224,200	307,947
Land	288,132	155,640	55,300	84,000	45,000
Buildings	211,297	143,718	23,100	109,000	120,250
Machinery, tools, and implements	424,831	288,744	854,016	31,200	142,697
LIVE ASSETS—Total	1,219,092	841,627	598,609	450,963	1,278,513
Raw materials	252,094	382,865	42,768	3,763	550,230
Stock in process and finished product	233,735	130,163	141,868	246,200	131,198
Cash, bills and accounts receivable, and all sundries not else- where reported.	733,263	328,599	413,973	201,000	597,085
WAGES PAID—Aggregate	\$445,736	\$631,735	\$941,961	\$168,000	\$408,425
Average number of hands employed during the year	699	1,227	1,488	277	1,377
Males above 16 years	699	1,108	957	274	530
Females above 16 years		3	99	3	248
Children		86	195		52
Pieceworkers		30	227		547
MATERIALS USED—Aggregate cost	\$1,649,580	\$1,310,248	\$496,474	\$2,445,156	\$2,383,032
Principal materials	1,203,878	1,298,213	466,675	2,070,000	2,201,720
Fuel	430,473	4,130	9,875	5,156	18,816
Mill supplies		4,165			
All other materials	15,229	3,740	19,924	370,000	162,496
MISCELLANEOUS EXPENSES—Aggregate	\$110,257	\$73,609	\$746,523	\$37,809	\$1,309,858
Amount paid for contract work					
Rent		16,915	51,072	2,000	20,578
Power and heat			6,807		
Taxes	13,648	10,429	6,055	7,280	61,092,641
Insurance	6,655	11,018	7,270	1,657	14,942
Repairs, ordinary, of buildings and machinery	32,072	6,613	5,439	50	10,375
Interest on cash used in the business	27,267	12,437	4,584	2,382	14,409
All sundries not elsewhere reported	30,615	16,197	665,301	24,440	156,913
GOODS MANUFACTURED—Aggregate value	\$2,432,493	\$2,281,102	\$2,663,442	\$2,770,178	\$4,742,412
Principal product	2,411,737	2,236,102	2,650,302	2,770,178	4,742,412
All other products, including receipts from custom work and repairing	20,756	45,000	13,140		

a Includes several branches of these industries, which will be specifically stated in final reports.
b Includes internal revenue taxes.

CENSUS BULLETIN.

No. 280.

WASHINGTON, D. C.

October 22, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF NEW HAVEN, CONNECTICUT.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 20, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of New Haven for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	82
Capital invested.....	\$140,396
Number of hands employed.....	462
Wages paid.....	\$184,008
Cost of materials used.....	\$118,860
Miscellaneous expenses.....	\$11,022
Value of product at works.....	\$339,908

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

Number of establishments reported	68.54
Capital invested.....	71.96
Number of hands employed.....	13.43
Wages paid.....	68.23
Value of product at works.....	17.45
Population of city.....	36.84
Assessed valuation of city.....	8.03
Municipal debt less sinking fund.....	20.45

Decrease in cost of materials used, 9.27 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$380 in 1880 to \$564 in 1890, or 48.42 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; that the percentage of increase in the number of women employed has been less in many industries than in the number of adult males; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

The decrease in cost of materials used, as compared with the cost in 1880, is principally found in the manufacture of brass castings, carriages and wagons, clocks, corsets, fancy boxes, fire arms, hardware, and men's clothing. In 1880 the total cost of materials used by the industries named constituted 47.94 per cent. of the total value of products; in 1890 such cost constitutes but 38.31 per cent. of the total value of products.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

Robert T. Torleis

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF NEW HAVEN, CONNECTICUT.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

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The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA. (c)		
			Population.	Assessed valuation.	Municipal debt. (d)
All industries.....	\$1,670,110	\$24,040,225 28,574,038	62,882 86,045	\$46,968,387 50,739,536	\$1,584,619 1,908,692

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c Town and city combined.

d The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Brass castings and brass finishing.	Carriages and wagons. (b)	Corsets.	Foundry and machine shop products.	Hardware. (b)
	(3 establishments.)	(58 establishments.)	(7 establishments.)	(24 establishments.)	(12 establishments.)
CAPITAL EMPLOYED—Aggregate.....	\$642,360	\$2,908,541	\$1,148,144	\$1,619,416	\$1,857,539
HIRED PROPERTY—Total.....	19,330	342,085	93,065	29,375	114,528
PLANT—Total.....	185,400	846,675	268,865	859,039	983,544
Land.....	25,400	267,972	50,000	196,570	192,325
Buildings.....	57,000	305,845	70,000	248,870	393,600
Machinery, tools, and implements.....	103,000	272,858	148,865	413,599	397,719
LIVE ASSETS—Total.....	437,650	1,719,781	786,214	731,002	759,457
Raw materials.....	30,500	348,708	297,086	126,884	106,917
Stock in process and finished product.....	300,150	631,926	268,860	197,353	407,876
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	107,000	739,147	220,268	406,765	244,664
WAGES PAID—Aggregate.....	\$222,395	\$1,089,080	\$619,581	\$559,733	\$1,419,690
Average number of hands employed during the year.....	384	1,492	1,785	823	2,776
Males above 16 years.....	178	904	122	745	507
Females above 15 years.....	26	15	67	9	40
Children.....	13	13			
Pieceworkers.....	180	560	1,596	68	2,229
MATERIALS USED—Aggregate cost.....	\$159,011	\$1,042,352	\$1,045,230	\$626,804	\$788,262
Principal materials.....	130,929	901,853	1,038,400	548,971	648,345
Fuel.....	4,600	24,414	6,415	24,404	45,651
Mill supplies.....	2,500	8,275	50	14,115	6,000
All other materials.....	20,982	107,810	365	39,314	88,266
MISCELLANEOUS EXPENSES—Aggregate.....	\$85,386	\$138,448	\$69,633	\$73,175	\$110,761
Amount paid for contract work.....					
Rent.....	1,450	23,946	5,584	2,350	7,445
Power and heat.....		1,110	200	1,680	936
Taxes.....	1,421	14,696	3,504	10,915	20,308
Insurance.....	1,265	16,101	7,711	6,913	5,759
Repairs, ordinary, of buildings and machinery.....	3,000	7,310	2,025	13,308	2,360
Interest on cash used in the business.....	3,000	26,694	26,993	14,078	11,052
All sundries not elsewhere reported.....	75,250	48,591	23,616	23,921	62,901
GOODS MANUFACTURED—Aggregate value.....	\$540,694	\$2,626,376	\$1,920,867	\$1,497,358	\$2,688,282
Principal product.....	485,694	2,371,830	1,878,467	1,350,214	2,660,224
All other products, including receipts from custom work and repairing.....	55,000	254,546	42,400	147,144	28,058

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.
 b Includes several branches of this industry, which will be specifically stated in final reports.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Lumber— planing mill products. (a)	Millinery and lace goods.	Rubber and elastic goods.	Slaughtering and meat packing.	Iron and steel.
	(4 establish- ments.)	(3 establish- ments.)	(4 establish- ments.)	(7 establish- ments.)	(4 establish- ments.)
CAPITAL EMPLOYED—Aggregate	\$527, 799	\$178, 585	\$247, 350	\$504, 895	\$589, 728
Hired property—Total		113, 335	3, 600	30, 000	8, 900
PLANT—Total	209, 500	4, 250	119, 435	284, 200	324, 500
Land	101, 500		14, 000	78, 000	77, 500
Buildings	52, 000		35, 000	123, 000	122, 000
Machinery, tools, and implements	56, 000	4, 250	70, 435	83, 200	125, 000
LIVE ASSETS—Total	318, 299	61, 000	124, 315	190, 695	256, 328
Raw materials	151, 852	27, 000	60, 505	7, 250	93, 800
Stock in process and finished product	56, 656	5, 000	36, 190	64, 750	63, 800
Cash, bank, and accounts receivable, and all sundries not elsewhere reported.	109, 791	29, 000	27, 620	118, 695	98, 728
WAGES PAID—Aggregate	\$140, 190	\$41, 180	\$108, 060	\$185, 857	\$185, 830
Average number of hands employed during the year	215	128	232	554	290
Males above 16 years	204	12	135	346	234
Females above 15 years	1	114	67	208	
Children		2			1
Pieceworkers	10		30		55
MATERIALS USED—Aggregate cost	\$434, 911	\$104, 410	\$265, 976	\$2, 864, 237	\$557, 606
Principal materials	432, 200	104, 000	198, 847	2, 731, 267	476, 166
Fuel	11	110	6, 423	32, 770	49, 012
Mill supplies	2, 500	300	500		12, 428
All other materials	200		60, 206	100, 200	20, 000
MISCELLANEOUS EXPENSES—Aggregate	\$47, 534	\$9, 585	\$10, 341	\$35, 646	\$42, 721
Amount paid for contract work					
Rent		6, 800	288	1, 800	801
Power and heat	100	200	300		200
Taxes	2, 925	280	1, 312	4, 110	1, 748
Insurance	4, 189	545	1, 082	3, 529	2, 249
Repairs, ordinary, of buildings and machinery	1, 000	100	4, 000	4, 135	14, 877
Interest on cash used in the business	6, 304	160	1, 898	3, 250	900
All sundries not elsewhere reported	33, 016	1, 500	1, 460	18, 822	21, 948
GOODS MANUFACTURED—Aggregate value	\$768, 710	\$200, 000	\$449, 500	\$3, 396, 851	\$840, 253
Principal product	764, 136	95, 000	444, 500	3, 347, 748	840, 253
All other products, including receipts from custom work and repairing	4, 574	105, 000	5, 000	49, 103	

a Includes several branches of this industry, which will be specifically stated in final reports.

CENSUS BULLETIN.

No. 281.

WASHINGTON, D. C.

October 22, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF CANTON, OHIO.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,

WASHINGTON, D. C., October 20, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Canton for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Canton were included in the totals published for Stark county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

STARK COUNTY: 1880.

Number of establishments reported.....	462
Capital invested.....	\$5,621,960
Number of hands employed.....	3,718
Wages paid.....	\$1,311,035
Value of materials used.....	\$4,265,733
Value of product.....	\$7,986,627

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital.	Hands employed.	Wages paid.	Cost of materials used.	
All industries (a).....	{ 1880 1890	75	409	\$10,856,468	6,828	\$3,652,213	\$4,786,510

INDUSTRIES.	Miscellaneous expenses.	Value of product.	MUNICIPAL DATA.			
			Population.	Assessed valuation.	Municipal debt. (b)	
All industries (a).....	{ 1880 1890	\$880,651	\$11,424,325	12,258 26,189	\$5,056,070 9,351,670	\$180,657 433,525

^a Statistics of manufactures for 1880 were included in totals published for Stark county.

^b The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries. To avoid disclosure of the operations of individual establishments, only such important or characteristic industries as have 3 or more establishments engaged therein are included in this table. Among other important industries, in which less than 3 establishments are reported, may be mentioned, watch cases, 1 establishment; watches, 1 establishment, and iron and steel, from ore or bloom, 1 establishment. The 3 establishments referred to report invested capital, \$1,984,405; hands employed, 2,018, and value of products, \$2,948,277.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

CLASSIFICATION OF INQUIRIES.	Agricultural implements. — (9 establish- ments.)	Flouring and grist mill products. — (5 establish- ments.)	Foundry and machine shop products. — (9 establish- ments.)	Roofing and roofing ma- terials. — (9 establish- ments.)	Saddlery and harness. — (6 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$4,495,851	\$147,725	\$370,256	\$369,917	\$174,225
HIRED PROPERTY—Total.....	4,250	3,000	9,750	8,200	9,250
PLANT—Total.....	596,262	106,675	215,500	92,807	66,700
Land.....	155,636	20,875	68,000	86,000	15,500
Buildings.....	240,227	32,700	56,000	25,600	32,000
Machinery, tools, and implements.....	200,399	53,100	91,500	31,207	19,200
LIVE ASSETS—Total.....	3,895,339	38,050	145,006	268,910	98,275
Raw materials.....	239,779	9,800	27,450	44,250	33,150
Stock in process and finished product.....	227,825	7,750	35,950	35,100	30,450
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	3,427,735	20,500	81,606	189,560	34,675
WAGES PAID—Aggregate.....	\$504,218	\$18,847	\$174,377	\$73,315	\$70,580
Average number of hands employed during the year.....	912	34	280	129	156
Males above 16 years.....	518	26	222	126	35
Females above 15 years.....	6		2	3	31
Children.....					
Pieceworkers.....	388	8	56		90
MATERIALS USED—Aggregate cost.....	\$580,993	\$323,368	\$173,879	\$362,158	\$113,215
Principal materials.....	370,978	309,636	139,324	354,483	109,505
Fuel.....	12,052	2,212	4,055	275	610
Mill supplies.....		25	1,200		100
All other materials.....	197,963	11,495	29,300	7,400	3,000
MISCELLANEOUS EXPENSES—Aggregate.....	\$220,478	\$9,717	\$18,524	\$17,884	\$6,774
Amount paid for contract work.....					
Rent.....	330	200	770	680	731
Power and heat.....	60		1,400	200	
Taxes.....	13,758	790	2,234	841	494
Insurance.....	7,608	1,687	1,675	734	704
Repairs, ordinary, of buildings and machinery.....	10,725	3,215	4,460	875	670
Interest on cash used in the business.....	43,287	3,740	2,460	1,569	550
All sundries not elsewhere reported.....	144,650	85	5,525	12,935	3,625
GOODS MANUFACTURED—Aggregate value.....	\$1,774,896	\$388,206	\$493,550	\$530,504	\$225,225
Principal product.....	1,471,796	367,306	463,160	490,804	221,250
All other products, including receipts from custom work and repairing.....	303,100	20,900	30,390	39,700	3,975

ROBERT P. PORTER,
Superintendent of Census.

CENSUS BULLETIN.

No. 282.

WASHINGTON, D. C.

October 22, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF ALLENTOWN, PENNSYLVANIA.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 20, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned to the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Allentown for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Allentown were included in the totals published for Lehigh county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

LEHIGH COUNTY: 1880.

Number of establishments reported.....	473
Capital invested.....	\$12,850,472
Number of hands employed	5,743
Wages paid	\$1,690,776
Value of materials used.....	\$9,352,199
Value of product	\$14,097,475

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital.	Hands employed.	Wages paid.	Cost of materials used.	
							All industries (a).....	{ 1880 1890	74	376	$6,479,860	5,805	$2,302,638	$5,090,333

INDUSTRIES.	Miscellaneous expenses.	Value of product.	MUNICIPAL DATA.			
			Population.	Assessed valuation.	Municipal debt. (b)	
All industries (a).....	{ 1880 1890	\$523,830	\$8,826,273	18,063 25,228	\$8,340,176 11,972,488	\$430,443 439,646

^a Statistics of manufactures for 1880 were included in totals published for Lehigh county.
^b The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries. Among other important industries, in which less than 3 establishments are reported, may be mentioned clothing, men's, wholesale, 2 establishments; hardware, 1 establishment; iron work, architectural and ornamental, 2 establishments; paints, 1 establishment; slaughtering and meat packing, wholesale, 2 establishments, and wire, 1 establishment. The 9 establishments referred to report invested capital, \$1,382,283; hands employed, 816, and value of products, \$1,677,330.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

CLASSIFICATION OF INQUIRIES.	Boots and shoes—factory product. (5 establishments.)	Foundry and machine shop products. (15 establishments.)	Furniture—factory product. (7 establishments.)	Iron and steel from ore or bloom. (3 establishments.)	Silk and silk goods. (3 establishments.)
CAPITAL EMPLOYED—Aggregate.....	\$434,138	\$508,759	\$170,584	\$1,316,059	\$869,625
HIRED PROPERTY—Total.....	4,894	6,562	18,642	.....	202,125
PLANT—Total.....	201,604	292,300	215,500	857,303	265,000
Land.....	83,875	69,600	91,500	76,321	.....
Buildings.....	69,500	100,100	82,500	614,275	.....
Machinery, tools, and implements.....	48,229	122,600	41,500	136,707	265,000
LIVE ASSETS—Total.....	227,640	209,897	236,442	458,756	402,500
Raw materials.....	55,593	11,910	21,434	89,800	.....
Stock in process and finished product.....	84,283	101,749	81,000	222,930	400,000
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	87,764	96,238	123,918	146,026	2,500
WAGES PAID—Aggregate.....	\$161,723	\$244,105	\$176,374	\$172,624	\$292,495
Average number of hands employed during the year.....	396	499	452	331	946
Males above 16 years.....	108	495	373	331	106
Females above 15 years.....	32	2	1	.....	96
Children.....	25	2	3	.....	215
Pieceworkers.....	231	.....	75	.....	529
MATERIALS USED—Aggregate cost.....	\$253,637	\$354,765	\$164,022	\$864,200	\$1,163,420
Principal materials.....	241,617	272,323	159,846	560,936	1,158,555
Fuel.....	2,431	17,317	2,608	293,435	4,765
Mill supplies.....	.....	31,020	845	.....	.....
All other materials.....	9,589	34,105	725	9,829	100
MISCELLANEOUS EXPENSES—Aggregate.....	\$16,299	\$26,277	\$18,654	\$85,920	\$40,612
Amount paid for contract work.....	.....	.....	.....	.....	.....
Rent.....	500	591	1,760	.....	15,017
Power and heat.....	210	200	.....	.....	2,500
Taxes.....	2,126	1,493	630	5,518	655
Insurance.....	3,093	2,340	3,710	784	2,268
Repairs, ordinary, of buildings and machinery.....	2,550	9,324	2,026	42,384	5,600
Interest on cash used in the business.....	2,718	2,426	4,072	18,952	.....
All sundries not elsewhere reported.....	5,102	9,903	6,456	18,282	14,572
GOODS MANUFACTURED—Aggregate value.....	\$188,679	\$716,193	\$428,355	\$1,217,708	\$1,694,342
Principal product.....	488,679	699,966	428,523	1,217,708	1,694,342
All other products, including receipts from custom work and repairing.....	.....	16,227	327	.....	.....

ROBERT P. PORTER,
Superintendent of Census.

CENSUS BULLETIN.

No. 283.

WASHINGTON, D. C.

October 24, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF INDIANAPOLIS, INDIANA.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 21, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Indianapolis for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars and general shop construction and repairs by steam railroad companies; druggists' preparations, not including prescriptions; illuminating gas; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.	
Number of establishments reported.....	135
Capital invested	\$1,295,768
Number of hands employed	1,399
Wages paid	\$588,878
Cost of materials used	\$566,588
Miscellaneous expenses.....	\$70,225
Value of product at works	\$1,431,537

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.	
Number of establishments reported.....	33.87
Capital invested.....	31.50
Number of hands employed.....	45.68
Wages paid.....	83.94
Value of product at works.....	11.43
Population of city.....	40.48
Assessed valuation of city.....	21.01

Decrease in cost of materials used, 7.55 per cent.

Decrease in municipal debt less sinking fund, 3.54 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$392 in 1880 to \$495 in 1890, or 26.28 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children, and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

Robert D. Torles
 Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF INDIANAPOLIS, INDIANA.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. * * * They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.
All industries.....	84	688	\$10,049,500	10,000	\$3,917,114	\$19,198,102
	120	1,056	14,510,379	15,967	7,793,899	18,316,095

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....		\$27,453,089	75,058	\$48,099,940	\$1,914,500
	\$2,010,514	32,023,851	105,436	58,205,890	1,846,672

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Carriages and wagons. (23 establish- ments.)	Clothing— men's, whole- sale. (5 establish- ments.)	Flouring and grist mill prod- ucts. (11 establish- ments.)	Foundry and machine shop products. (31 establish- ments.)	Furniture— factory prod- ucts. (b) (26 establish- ments.)
CAPITAL EMPLOYED—Aggregate	\$669, 191	\$382, 077	\$505, 663	\$1, 961, 685	\$1, 574, 012
Hired property—Total	125, 625	47, 427	16, 845	194, 225	112, 246
Plant—Total	128, 785	56, 550	233, 549	636, 950	513, 446
Land.....	47, 120	18, 000	43, 500	105, 925	111, 846
Buildings.....	29, 200	13, 000	65, 450	140, 737	196, 424
Machinery, tools, and implements.....	52, 465	25, 550	144, 599	390, 288	205, 176
Live assets—Total	414, 781	278, 100	235, 269	1, 130, 510	948, 320
Raw materials.....	28, 035	66, 000	97, 011	113, 714	231, 516
Stock in process and finished product.....	217, 150	107, 000	30, 274	485, 067	310, 136
Cash, bills and accounts receivable, and all sundries not else- where reported.....	169, 596	105, 100	107, 984	531, 729	406, 668
WAGES PAID—Aggregate	\$233, 372	\$177, 550	\$94, 626	\$809, 023	\$733, 923
Average number of hands employed during the year	550	639	176	1, 434	1, 624
Males above 16 years.....	510	55	173	1, 386	1, 078
Females above 15 years.....	1	31	3	12	18
Children.....	3	3		1	50
Pieceworkers.....	6	550		35	478
MATERIALS USED—Aggregate cost	\$747, 125	\$543, 675	\$2, 702, 631	\$836, 880	\$1, 011, 348
Principal materials.....	738, 334	531, 400	2, 591, 339	677, 946	914, 236
Fuel.....	1, 593	625	10, 846	21, 135	9, 820
Millsupplies.....		150	341	17, 786	4, 110
All other materials.....	7, 198	11, 500	100, 105	120, 013	83, 182
MISCELLANEOUS EXPENSES—Aggregate	\$101, 410	\$13, 006	\$49, 430	\$121, 286	\$120, 314
Amount paid for contract work.....					
Rent.....	11, 306	3, 320	1, 263	16, 995	9, 260
Power and heat.....	2, 516	420		541	857
Taxes.....	1, 998	1, 546	2, 921	9, 436	10, 821
Insurance.....	5, 612	1, 782	8, 591	5, 825	20, 153
Repairs, ordinary, of buildings and machinery.....	5, 217	590	10, 610	8, 480	14, 850
Interest on cash used in the business.....	4, 270	4, 800	10, 320	27, 523	28, 576
All sundries not elsewhere reported.....	70, 591	548	13, 725	52, 486	35, 797
GOODS MANUFACTURED—Aggregate value	\$1, 266, 826	\$861, 250	\$2, 970, 804	\$2, 162, 803	\$2, 252, 661
Principal product.....	1, 178, 004	860, 850	2, 688, 711	1, 973, 701	2, 240, 261
All other products, including receipts from custom work and repairing.....	88, 822	400	285, 093	189, 102	12, 400

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.
b Includes several branches of this industry, which will be specifically stated in final reports.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Lumber— planting mill products. (α) (10 establish- ments.)	Lumber and other mill pro- ducts from logs and bolts. (7 establish- ments.)	Printing and publishing— book and job. (20 establish- ments.)	Printing and publishing— newspapers and periodicals. (60 establish- ments.)	Slaughtering and meat packing. (α) (7 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$468,955	\$236,970	\$622,693	\$763,239	\$967,040
HIRED PROPERTY—Total.....	14,372	38,220	237,724	258,748	9,120
PLANT—Total.....	192,751	94,750	215,120	331,874	359,120
Land.....	58,179	16,150		14,000	73,000
Buildings.....	48,750	28,550		5,425	258,000
Machinery, tools, and implements.....	85,822	50,050	215,120	312,449	28,120
LIVE ASSETS—Total.....	261,832	104,000	169,849	172,617	598,800
Raw materials.....	117,332	7,000	52,079	21,850	132,600
Stock in process and finished product.....	47,800	57,750	25,457	12,225	384,700
Cash, bills and accounts receivable, and all sundries not else- where reported.....	96,700	39,250	92,313	138,542	81,500
WAGES PAID—Aggregate.....	\$190,383	\$220,242	\$281,984	\$426,714	\$417,472
Average number of hands employed during the year.....	297	455	520	624	858
Males above 16 years.....	286	270	412	379	743
Females above 15 years.....	1		84	70	91
Children.....		15	16	20	20
Pieceworkers.....	10	170	8	155	4
MATERIALS USED—Aggregate cost.....	\$248,420	\$301,151	\$205,141	\$178,717	\$5,115,653
Principal materials.....	237,705	283,931	192,624	164,748	4,968,232
Fuel.....	2,665		2,357	4,006	26,406
Mill supplies.....	3,300	3,100			
All other materials.....	4,750	14,120	10,160	9,963	120,955
MISCELLANEOUS EXPENSES—Aggregate.....	\$35,499	\$25,451	\$32,173	\$218,105	\$115,355
Amount paid for contract work.....					
Rent.....	1,160	3,600	17,828	20,620	630
Power and heat.....			644	1,195	10,000
Taxes.....	3,852	2,328	1,902	2,590	10,963
Insurance.....	7,262	2,888	3,332	2,723	24,123
Repairs, ordinary, of buildings and machinery.....	5,600	5,730	2,175	3,038	12,300
Interest on cash used in the business.....	3,600	6,305	3,405	1,948	17,060
All sundries not elsewhere reported.....	14,025	4,600	2,887	185,991	40,279
GOODS MANUFACTURED—Aggregate value.....	\$527,400	\$622,950	\$606,865	975,264	\$5,989,905
Principal product.....	517,000	618,450	594,690	974,389	5,983,191
All other products, including receipts from custom work and repairing.....	10,400	4,500	12,175	875	6,714

α Includes several branches of this industry, which will be specifically stated in final reports.

CENSUS BULLETIN.

No. 284.

WASHINGTON, D. C.

October 24, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF SYRACUSE, NEW YORK.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,

WASHINGTON, D. C., October 21, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Syracuse for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	80
Capital invested.....	\$77,735
Number of hands employed.....	491
Wages paid.....	\$131,803
Cost of materials used.....	\$62,344
Miscellaneous expenses.....	17,434
Value of product at works.....	\$232,547

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows :

PERCENTAGES OF INCREASE.

Number of establishments reported.....	51.24
Capital invested.....	109.24
Number of hands employed.....	36.11
Wages paid.....	141.46
Cost of materials used.....	41.03
Value of product at works.....	72.21
Population of city.....	70.19
Assessed valuation of city.....	53.51
Municipal debt less sinking fund.....	6.44

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$277 in 1880 to \$492 in 1890, or 77.62 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children, and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employés. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

Robert D. Forster

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF SYRACUSE, NEW YORK.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operations of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. * * * They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establish- ments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materi- als used.

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All Industries.....		\$14,695,674 25,540,304	51,792 88,143	\$28,824,643 43,488,982	\$1,351,500 1,438,500

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Agricultural implements.	Boots and shoes—factory product.	Carriages and wagons and materials.	Chemicals.	Clothing— men's, whole- sale.
	(3 establish- ments.)	(5 establish- ments.)	(28 establish- ments.)	(3 establish- ments.)	(92 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$556,623	\$332,757	\$768,429	\$2,632,625	\$2,422,392
Hired property—Total.....	16,950	55,740	137,090	8,175	484,660
PLANT—Total.....	187,412	77,928	259,459	1,802,150	85,717
Land.....	35,000	15,000	72,150	100,000	15,000
Buildings.....	51,233	10,000	111,300	500,000	22,625
Machinery, tools, and implements.....	101,179	52,928	76,009	1,202,150	48,092
LIVE ASSETS—Total.....	352,261	199,089	371,880	822,300	1,862,015
Raw materials.....	90,098	56,982	87,662	205,100	327,522
Stock in process and finished product.....	94,776	45,144	178,609	460,500	562,533
Cash, bills and accounts receivable, and all sundries not else- where reported.....	167,387	96,963	105,549	156,700	971,960
WAGES PAID—Aggregate.....	\$118,551	\$222,769	\$308,389	\$736,463	568,379
Average number of hands employed during the year.....	225	529	542	1,649	1,404
Males above 16 years.....	107	68	450	1,639	524
Females above 16 years.....	1	37	15	9	715
Children.....	1	4			1
Pieceworkers.....	116	420	77	1	164
MATERIALS USED—Aggregate cost.....	\$142,088	\$328,028	\$483,889	\$708,400	\$1,769,873
Principal materials.....	107,538	313,615	447,837	658,200	1,765,574
Fuel.....	6,608	1,300	12,130	50,000	4,072
Mill supplies.....					
All other materials.....	28,942	13,113	23,922	200	227
MISCELLANEOUS EXPENSES—Aggregate.....	\$51,429	\$14,124	\$50,418	\$95,359	\$590,348
Amount paid for contract work.....					490,846
Rent.....	1,420	4,400	11,586	620	31,442
Power and heat.....	500	697	700	150	3,053
Taxes.....	1,702	750	1,788	4,000	1,713
Insurance.....	2,088	1,420	3,738	1,079	6,066
Repairs, ordinary, of buildings and machinery.....	1,950	328	6,965	50,150	670
Interest on cash used in the business.....	15,189	2,063	5,787	30,360	9,942
All sundries not elsewhere reported.....	28,580	4,466	19,854	9,000	46,616
GOODS MANUFACTURED—Aggregate value.....	\$323,478	\$710,994	\$978,763	\$1,776,500	\$3,429,219
Principal product.....	185,629	710,994	893,880	1,776,500	3,320,339
All other products, including receipts from custom work and repairing.....	137,849		84,883		108,880

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Foundry and machine shop products.	Liquors—malt.	Lumber— planing mill products.	Slaughtering and meat pack- ing—wholesale.	Tobacco—cigars and cigarettes.
	(23 establish- ments.)	(11 establish- ments.)	(12 establish- ments.)	(4 establish- ments.)	(88 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$1,602,663	\$1,753,008	\$518,353	\$309,920	\$771,502
FIXED PROPERTY—Total.....	176,330	71,210	51,990	73,420	125,830
PLANT—Total.....	699,089	1,140,702	245,363	58,000	147,708
Land.....	186,200	186,200	66,600	7,500	63,900
Buildings.....	109,038	470,151	59,400	13,500	57,650
Machinery, tools, and implements.....	403,851	484,351	119,363	37,000	26,158
LIVE ASSETS—Total.....	727,244	541,096	221,000	178,500	497,964
Raw materials.....	92,705	88,554	79,350	13,000	229,222
Stock in process and finished product.....	241,516	148,518	49,900	110,500	77,838
Cash, bills and accounts receivable, and all sundries not else- where reported.....	393,023	304,024	91,750	55,000	190,904
WAGES PAID—Aggregate.....	\$490,145	\$260,364	\$214,357	\$32,796	\$287,757
Average number of hands employed during the year.....	814	342	441	71	716
Males above 16 years.....	802	339	407	70	138
Females above 15 years.....	3		2		64
Children.....			20	1	2
Pieceworkers.....	9	3	12		512
MATERIALS USED—Aggregate cost.....	\$530,665	\$581,115	\$278,420	\$414,345	\$303,158
Principal materials.....	455,091	502,232	261,882	400,485	262,663
Fuel.....	22,805	28,131	2,458	1,160	1,958
Mill supplies.....	15,895	17,480	2,075		80
All other materials.....	36,874	33,292	12,005	12,700	38,507
MISCELLANEOUS EXPENSES—Aggregate.....	\$94,381	\$330,257	\$22,948	\$13,792	\$194,510
Amount paid for contract work.....					52,565
Rent.....	14,971	5,313	4,406	5,500	8,774
Power and heat.....	1,792		1,250	600	95
Taxes.....	8,931	α 225,322	2,701	215	α 79,229
Insurance.....	6,711	6,142	4,136	1,567	2,134
Repairs, ordinary, of buildings and machinery.....	11,396	11,790	4,525	1,350	875
Interest on cash used in the business.....	17,576	10,045	2,095	2,700	384
All sundries not elsewhere reported.....	32,954	71,645	3,835	1,860	50,454
GOODS MANUFACTURED—Aggregate value.....	\$1,379,940	\$1,535,985	\$592,353	\$491,288	\$910,110
Principal product.....	1,270,851	1,531,966	550,618	486,422	908,620
All other products, including receipts from custom work and repairing.....	109,049	4,019	41,735	4,866	1,490

α Includes internal revenue taxes.