COMBINED TEXTILES

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COMBINED TEXTILES.

GENERAL STATISTICS.

The group of textile industries for which statistics are here presented comprises eight distinct industries, designated as follows: (1) "Cotton goods, including cotton small wares"; (2) "woolen, worsted, and felt goods, and wool hats"; (3) "carpets and rugs, other than rag"; (4) "hosiery and knit goods"; (5) "silk and silk goods, including throwsters"; (6) "cordage and twine and jute and linen goods"; (7) "shoddy"; and (8) "dyeing and finishing textiles." The statistics for each of these industries are presented in detail in subsequent chapters of this report. In addition, a separate presentation is made for the wool scouring and the wool pulling industries, though none of the statistics for them have been included in the tables relating to the general textile group. This group of industries does not include the manufacture of rag carpets, haircloth, or fur-felt hats, which industries are presented in the general statistics of manufactures under classifications as follows: "Carpets, rag," "hats, fur-felt," and "haircloth."

Summary for 1909.—Table 1 presents a summary of the principal statistics relating to the eight industries constituting the combined textile group for the census of 1909.

Table 1	Total.	Cotton goods, including cotton small wares.	Woolen, worsted, and felt goods, and wool hats.	Carpets and rugs, other than rag.	Hosiery and knit goods.	Silk and silk goods, including throwsters.	Cordage and twine and jute and linen goods.	Shoddy.	Dyeing and finishing textiles.
Number of establishments	5,352	1,324	985	139	1,374	852	164	88	426
Persons engaged in the industry	915,858	387,771	175,176	34,700	136,130	105,238	27,214	2,320	47,303
Proprietors and firm members	3,522	377	732	134	1,134	664	80	83	318
Salaried employees	31,208	8,514	5,722	1,265	5,721	5,537	1,314	196	2,939
Wage earners (average number)	881,128	378,880	168,722	33,307	129,275	99,037	25,820	2,041	44,046
Primary horsepower	2,099,050	1,296,517	362,209	38,553	103,709	97,947	78,549	13,820	107,746
Capital	$1,841,242,131	$822,237,529	$430,578,574	$75,027,010	$163,641,171	$152,158,002	$76,020,366	$6,886,825	$114,092,654
Expenses	1,488,817,311	554,221,688	387,998,515	62,311,110	175,729,583	177,175,719	56,076,532	6,050,311	68,647,853
Services	384,522,370	147,270,003	82,523,776	17,745,092	52,431,680	46,097,364	10,995,545	1,196,376	26,261,634
Salaries	49,123,634	14,411,758	10,097,157	2,209,042	7,691,457	7,527,279	1,862,546	289,635	5,034,710
Wages	335,398,736	132,859,145	72,426,619	15,536,050	44,740,223	38,570,085	9,132,999	906,691	21,226,924
Materials	992,635,299	371,009,470	282,878,039	39,503,004	110,241,053	107,766,916	40,914,810	5,000,706	35,261,301
Miscellaneous	111,659,642	35,941,315	22,596,700	5,003,014	13,056,850	23,311,439	4,166,177	459,229	7,124,918
Value of products	1,684,636,499	628,391,813	435,978,558	71,188,152	200,143,527	196,911,667	61,019,986	7,446,364	83,556,432
Value added by manufacture (value of products, less cost of materials)	692,001,200	257,382,343	153,100,519	31,625,148	89,902,474	89,144,751	20,105,176	2,445,658	48,295,131

In compiling the statistics for the eight industries named, each establishment has been classified according to its product of chief value. There is considerable overlapping among the different industries, but so far as possible the statistics of products common to two or more of the industries are assembled, in the chapter on the industry for which they constitute primary products, so as to show the total production of the given product in all industries combined. There is also considerable duplication in the cost of materials and value of products for some of the individual industries, and still more in the totals for the eight industries combined, by reason of the use of the products of one establishment or one industry as materials for other establishments or other industries. For example, some of the establishments classed under "cotton goods, including cotton small wares," make cotton yarn that is sold not only to other cotton mills but to establishments in other textile industries. The extent of this practice in the combined textile industry is shown by Table 10, which gives the statistics for yarns purchased. The combination of the value of products of the yarn-producing mills with that of the establishments in which the yarn is used as a material obviously leads to duplication. Again, the products of the shoddy industry are almost wholly used as a material in the wool manufactures.

In considering the relative importance of the several textile industries it should be borne in mind that the differences among the industries with respect to the amount of duplication involved in the value of products render that standard somewhat inaccurate.

It is clear from the table, however, that on the basis of any standard of measurement the cotton goods industry is the most important. The cotton mills, including those making small wares, manufactured products in 1909 whose value represented 37.3 per cent of the total value of products for the eight textile industries combined, and gave employment to 43 per cent of the total number of wage earners reported. Cotton is the most important material used in the manufacture of hosiery and knit goods also, and these two cotton-using industries together contributed 49.2 per cent of the total value of products for the eight

textile industries and employed 57.7 per cent of the total number of wage earners.

The industry designated "woolen, worsted, and felt goods, and wool hats" is the second in importance of this group, contributing 25.9 per cent of the total value of products and giving employment to 19.1 per cent of the total number of wage earners. In the carpet and rug branch of the industry also the chief material used is wool, and these two industries together gave employment to 22.9 per cent of the wage earners and contributed 30.1 per cent of the value of products for the textile group.

Comparison with earlier censuses.—Table 2 summarizes the statistics of the eight textile industries representing the combined industry for each census from 1889 to 1909, inclusive.

Table 2

	COMBINED TEXTILES.							
	Number or amount.				Per cent of increase.[1]			
	1909	1904	1899	1889	1899–1909	1904–1909	1899–1904	1889–1899
Number of establishments	5,352	4,737	4,521	4,420	18.4	13.0	4.8	2.3
Persons engaged in the industry	915,858	770,512	(2)	(2)	.....	18.9	.....	.....
Proprietors and firm members	3,522	3,611	(2)	(2)	.....	− 2.5	.....	.....
Salaried employees	31,208	24,372	17,024	(2)	83.3	28.0	43.2	.....
Wage earners (average number)	881,128	742,529	664,429	520,196	32.6	18.7	11.8	(3)
Primary horsepower	2,099,050	1,623,403	1,310,834	831,730	60.1	29.3	23.8	57.6
Capital	$1,841,242,121	$1,351,451,715	$1,049,636,201	$772,673,605	75.4	36.2	28.8	35.8
Expenses	1,488,817,311	1,123,356,860	824,336,963	681,538,981	80.6	32.5	36.3	21.0
Services	384,522,370	283,376,354	233,602,184	182,165,458	64.6	35.7	21.3	28.2
Salaries	49,123,634	32,862,121	23,532,773	(2)	108.7	49.5	39.6	.....
Wages	335,398,736	250,514,233	210,069,411	(2)	59.7	33.9	19.3	.....
Materials	992,635,299	753,174,981	527,209,771	454,272,489	88.3	31.8	42.9	16.1
Miscellaneous	111,659,642	86,805,525	63,525,008	45,101,034	75.8	28.6	36.6	40.8
Value of products	1,684,636,499	1,225,686,444	940,052,688	768,357,254	79.2	37.4	30.4	22.3
Value added by manufacture (value of products less cost of materials)	692,001,200	472,511,463	412,842,917	314,084,765	67.6	46.5	14.5	31.4

[1] A minus sign (−) denotes decrease. Where percentages are omitted, comparable figures are not available.
[2] Comparable figures not available.
[3] Figures not strictly comparable.

In comparing the figures for value of products and cost of materials for the different censuses, it should be noted that the amount of duplication may have been greater relatively at one census than at another, though it is probable that no very great change has taken place. Fluctuations in prices have, however, affected these items materially, and the value added by manufacture as well, though in the latter instance perhaps to a less extent. The advance in prices during the decade 1899–1909 partly accounts for the fact that the percentages of increase in these three items during that decade were much higher than those for the decade 1889–1899. The number of wage earners and the primary horsepower, however, also increased somewhat more rapidly during the later than during the earlier decade.

The average value of products per establishment in 1889 was $173,836; in 1899, $207,930; in 1904, $258,747; and in 1909, $314,768; and the average value added by manufacture in 1889 was $71,060; in 1899, $91,317; in 1904, $99,749; and in 1909, $129,298. The average number of wage earners per establishment shows an increase from 118 in 1889 to 147 in 1899, 157 in 1904, and 165 in 1909.

Comparative statistics for each census year beginning with 1879, for each of the textile industries covered by this report and for the eight industries combined, are presented in Table 3. In this table, for comparative purposes, "carpets and rugs" have been combined with "woolen, worsted, and felt goods and wool hats" under the title of "wool manufactures."

During the period of 30 years covered by the table the combined value of the products of the establishments in the eight textile industries increased from $572,253,099 in 1879 to $1,684,636,499 in 1909, the latter figure being nearly three times as great as the former. The decade 1899–1909 shows the largest absolute gain, the increase in value of products for that period being $744,583,811.

A large gain during the last decade is shown for each of the separate industries with the single exception of the shoddy industry. The number of wage earners employed in these textile industries in 1909 was over twice as great as the number in 1879—881,128, as compared with 405,744—this increase comparing very favorably with the increase noted above for value of products.

COMBINED TEXTILES—COMPARATIVE SUMMARY, BY INDUSTRIES: 1879 TO 1909.

Table 3 — INDUSTRY AND CENSUS YEAR.	Number of establishments.	Salaried employees.	Wage earners (average number).	Capital.	Salaries.	Wages.	Cost of materials.	Miscellaneous expenses.	Value of products.	Value added by manufacture.
1909										
Total	**5,352**	**31,208**	**881,128**	**$1,841,242,131**	**$49,123,634**	**$335,398,736**	**$992,035,299**	**$111,659,642**	**$1,684,636,499**	**$692,001,200**
Cotton goods, including cotton small wares	1,324	8,514	378,880	822,237,529	14,411,758	132,850,145	371,009,470	35,941,315	628,391,813	257,382,343
Wool manufactures	1,124	6,987	202,029	506,205,584	12,306,199	87,962,669	322,441,043	27,599,714	507,166,710	184,725,667
Hosiery and knit goods	1,374	5,721	129,275	163,641,171	7,691,457	44,740,223	110,241,053	13,050,850	200,143,527	89,902,474
Silk and silk goods	852	5,537	99,037	152,158,002	7,527,279	38,570,085	107,786,916	23,311,439	196,911,667	89,144,751
Cordage and twine and jute and linen goods	164	1,314	25,820	76,020,366	1,862,546	9,132,999	40,914,810	4,166,177	61,019,986	20,105,176
Shoddy	88	196	6,886	6,886,825	289,685	906,691	5,900,706	459,229	7,446,364	2,445,658
Dyeing and finishing textiles	426	2,939	44,046	114,092,654	5,034,710	21,226,924	35,261,301	7,124,018	83,556,432	48,295,131
1904										
Total	**4,737**	**24,372**	**742,529**	**1,351,451,715**	**32,862,121**	**250,514,233**	**753,174,981**	**86,805,525**	**1,225,686,444**	**472,511,463**
Cotton goods, including cotton small wares	1,154	6,981	315,874	613,110,655	10,237,891	96,205,796	286,255,303	30,487,378	450,467,704	164,212,401
Wool manufactures	1,213	5,616	170,976	370,861,691	8,177,345	70,797,524	242,561,096	21,588,465	380,934,003	138,372,907
Hosiery and knit goods	1,144	4,330	104,092	106,943,072	4,455,151	31,614,607	76,789,348	10,417,569	137,076,454	60,287,106
Silk and silk goods	624	4,027	79,601	109,556,621	4,742,270	26,767,943	75,861,188	14,052,777	133,288,072	57,426,884
Cordage and twine and jute and linen goods	145	1,050	25,332	56,466,036	1,596,680	8,824,336	46,031,062	3,819,532	64,664,241	18,633,179
Shoddy	97	172	2,689	5,804,164	245,403	834,822	6,055,731	461,527	8,406,425	2,350,694
Dyeing and finishing textiles	360	2,196	35,565	88,708,576	3,407,381	15,469,205	19,621,253	5,978,277	50,849,545	31,228,292
1899										
Total	**4,521**	**17,024**	**664,429**	**1,049,636,201**	**23,532,773**	**210,069,411**	**527,209,771**	**63,525,008**	**940,052,688**	**412,842,917**
Cotton goods, including cotton small wares	1,055	4,002	302,861	467,240,157	7,350,199	86,689,752	176,551,527	22,112,678	330,200,320	162,648,793
Wool manufactures	1,414	4,495	159,108	310,179,749	6,455,495	57,933,817	181,159,127	17,329,032	296,990,484	115,831,357
Hosiery and knit goods	1,006	2,831	83,601	82,065,517	3,138,160	24,434,497	51,195,330	6,027,380	95,833,602	44,638,362
Silk and silk goods	483	2,657	65,410	81,082,201	3,134,352	20,982,194	62,406,665	10,264,208	107,256,258	44,849,593
Cordage and twine and jute and linen goods	160	682	21,651	43,152,544	1,020,735	6,553,887	33,063,703	2,759,714	49,077,629	16,013,836
Shoddy	105	130	1,926	5,272,929	166,704	748,948	4,875,192	293,149	6,730,974	1,855,782
Dyeing and finishing textiles	298	1,318	20,776	60,643,104	2,267,128	12,726,316	17,958,137	4,137,947	44,903,331	27,005,194
1889										
Total	**4,420**	(1)	**520,196**	**772,673,605**	(1)	**169,422,053**	**454,272,489**	**45,101,034**	**768,357,254**	**314,084,765**
Cotton goods, including cotton small wares	905	.....	218,876	354,020,843	.....	66,024,538	154,912,979	16,719,524	267,981,724	113,068,745
Wool manufactures	1,693	.....	154,271	245,886,743	.....	54,330,775	167,233,987	15,622,263	270,527,511	103,293,524
Hosiery and knit goods	824	.....	59,774	50,686,206	.....	16,613,970	35,949,865	3,047,597	67,446,788	31,496,923
Silk and silk goods	472	.....	49,382	51,007,537	.....	17,762,441	51,004,425	4,259,623	87,208,454	36,204,029
Cordage and twine and jute and linen goods	184	.....	16,137	28,867,413	.....	5,062,510	26,782,978	1,485,852	38,315,217	11,532,239
Shoddy	94	.....	2,155	3,754,063	.....	707,099	6,003,035	238,094	7,887,000	1,883,965
Dyeing and finishing textiles	248	.....	19,601	38,450,800	.....	8,911,720	12,385,220	3,131,081	28,000,560	16,515,340
1879										
Total	**4,567**	(1)	**405,744**	**433,866,669**	(1)	**111,301,434**	**328,964,219**	(1)	**572,253,099**	**243,288,880**
Cotton goods, including cotton small wares	756	.....	172,544	208,280,346	.....	42,040,510	102,206,347	.....	192,090,110	89,883,763
Wool manufactures	2,330	.....	132,672	143,512,278	.....	40,087,612	149,100,600	.....	238,085,686	88,925,086
Hosiery and knit goods	398	.....	30,699	15,732,201	.....	6,830,195	15,449,091	.....	29,613,581	14,163,590
Silk and silk goods	382	.....	31,337	19,125,300	.....	9,146,705	22,407,701	.....	41,033,045	18,565,344
Cordage and twine and jute and linen goods	188	.....	7,584	8,602,925	.....	2,138,813	11,080,445	.....	15,283,360	4,193,924
Shoddy	73	.....	1,282	1,165,100	.....	400,326	3,366,650	.....	4,989,615	1,622,965
Dyeing and finishing textiles	101	.....	16,698	26,223,081	.....	6,474,364	13,664,295	.....	32,297,420	18,633,125
Special mills [2]	249	.....	12,028	11,224,448	.....	3,573,909	11,559,190	.....	18,860,273	7,301,083

[1] Comparable figures not available.
[2] Includes mills working raw cotton, waste, or cotton yarn into hosiery, webbing, tapes, fancy fabrics or mixed goods, or other fabrics which were not sold as specific manufactures of either cotton or wool.

Persons engaged in the combined textile industry.—Table 4 shows, for 1909, the number of persons engaged in the eight textile industries, classified according to occupational status and sex, and, in the case of wage earners, according to age also. It should be borne in mind that the sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

The average number of persons engaged in the eight textile industries during 1909 was 915,858, of whom 881,128, or 96.2 per cent, were wage earners, 19,209, or 2.1 per cent, were clerks, this class including other subordinate salaried employees, and 15,521, or 1.7 per cent, were proprietors and officials. Of the total number of persons engaged in the industry, 482,444, or 52.7 per cent, were males, and 433,414, or 47.3 per cent, were females. Of the wage earners, 71,426, or 8.1 per cent, were children under 16 years of age.

Table 4 — CLASS.	PERSONS ENGAGED IN THE COMBINED TEXTILE INDUSTRY: 1909		
	Total.	Male.	Female.
All classes	915,858	482,444	433,414
Proprietors and officials	15,521	15,075	446
Proprietors and firm members	3,522	3,351	171
Salaried officers of corporations	4,389	4,329	60
Superintendents and managers	7,610	7,395	215
Clerks	19,209	14,508	4,701
Wage earners (average number)	881,128	452,861	428,267
16 years of age and over	809,702	420,183	389,519
Under 16 years of age	71,426	32,678	38,748

Table 5 shows the average number of wage earners in the eight leading textile industries combined distributed according to age, and, in the case of those 16 years and over, according to sex, for 1909, 1904, and 1899.

Table 5

CLASS.	AVERAGE NUMBER OF WAGE EARNERS IN THE COMBINED TEXTILE INDUSTRY.					
	1909		1904		1899	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total	**881,128**	**100.0**	**742,529**	**100.0**	**664,429**	**100.0**
16 years of age and over	809,702	91.9	668,588	90.0	594,090	89.4
Male	420,183	47.7	336,908	45.4	300,418	45.2
Female	389,519	44.2	331,680	44.7	293,672	44.2
Under 16 years of age	71,426	8.1	73,941	10.0	70,339	10.6

The proportion of the total formed by the several classes shows no great variation for the three census years, although there was an increase in the proportion of men during each five-year period and a decrease in the proportion of children, the proportion of females 16 years of age and over remaining practically stationary.

Prevailing hours of labor.—In Table 6 the wage earners in the eight textile industries combined have been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. In making this classification the average number of wage earners employed during the year in each establishment was classified as a total according to the hours prevailing in that establishment, even though a few employees worked a greater or smaller number of hours.

Table 6

INDUSTRY.	AVERAGE NUMBER OF WAGE EARNERS IN THE COMBINED TEXTILE INDUSTRY: 1909							
	Total.	In establishments with prevailing hours—						
		48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.
Total	**881,128**	**2,156**	**11,138**	**18,735**	**516,195**	**259,407**	**73,252**	**245**
Cotton goods, including cotton small wares	378,880	304	2,879	571	190,998	110,226	64,687	215
Woolen, worsted, and felt goods and wool hats	168,722	423	1,092	1,102	119,728	45,300	1,075	2
Hosiery and knit goods	129,275	908	3,331	4,753	65,422	49,934	4,927	.....
Silk and silk goods, including throwsters	99,037	106	2,320	2,323	81,407	12,881	.....	.....
Dyeing and finishing textiles	44,046	107	1,102	308	28,172	12,639	1,628	.....
Carpets and rugs, other than rag	33,307	165	178	7,078	13,802	12,084	.....	.....
Cordage and twine and jute and linen goods	25,820	138	208	2,505	16,279	6,023	667	.....
Shoddy	2,041	5	28	5	387	1,320	268	28

Of the total number of wage earners, 516,195, or 58.6 per cent, were employed in establishments where the prevailing hours of labor were more than 54 but less than 60 hours per week, while 259,407, or 29.4 per cent, were employed where the prevailing hours were 60 per week. The two groups above named together included 88 per cent of the total number of wage earners, and these same hours of employment were the most common ones in each of the individual industries. The larger proportion of the wage earners employed more than 60 hours per week (68,819 out of a total of 73,497) were in the cotton mills and the hosiery and knitting mills of the South. Of the 68,819 wage earners, the cotton mills reported 64,844, or 94.2 per cent, and the hosiery and knitting mills, 3,975, or 5.8 per cent.

Character of ownership.—Table 7 presents statistics with respect to the character of ownership of the establishments in the eight textile industries combined.

In 1909, of the total number of establishments in the eight industries combined, 60.3 per cent were under corporate ownership, as compared with 54.3 per cent in 1904, while the value of products of these establishments represented 84.3 per cent of the total in 1909 and 80 per cent in 1904.

Table 7

CHARACTER OF OWNERSHIP.	COMBINED TEXTILES.			
	Number of establishments.		Value of products.	
	1909	1904	1909	1904
Total	**5,352**	**4,737**	**$1,684,636,499**	**$1,225,686,444**
Individual	1,185	1,162	93,547,407	91,385,272
Firm	937	994	170,400,067	153,383,882
Corporation	3,226	2,572	1,420,451,343	980,048,804
Other	4	9	236,782	262,486
Per cent of total	**100.0**	**100.0**	**100.0**	**100.0**
Individual	22.1	24.5	5.6	7.5
Firm	17.5	21.0	10.1	12.5
Corporation	60.3	54.3	84.3	80.0
Other	0.1	0.2	(1)	(1)

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

Engines and power.—The amount of power used in the textile industries was first reported at the census of 1869. Table 2 shows that the total amount of power increased from 831,730 horsepower in 1889 to 2,099,050 in 1909. Table 8 shows, for the eight textile industries combined, the statistics of power, as reported at the censuses of 1909, 1904, and 1899.

Table 8

POWER.	COMBINED TEXTILES. Number of engines or motors. 1909	1904	1899	Horsepower. 1909	1904	1899	Per cent distribution of horsepower. 1909	1904	1899
Primary power, total	**17,579**	**11,273**	**9,370**	**2,099,050**	**1,623,403**	**1,310,834**	**100.0**	**100.0**	**100.0**
Owned	10,122	9,607	9,370	1,922,585	1,508,178	1,284,470	91.6	96.6	98.0
Steam	7,110	6,705	6,230	1,467,775	1,181,417	906,327	69.9	72.8	69.1
Gas	312	207	94	10,443	5,965	2,300	0.5	0.4	0.2
Water wheels	2,681	2,682	3,046	435,482	379,069	374,188	20.7	23.3	28.5
Water motors	19	13	(1)	1,322	44	(1)	0.1	(2)	.....
Other	.....	.....	.....	7,563	1,683	1,655	0.4	0.1	0.1
Rented	7,457	1,666	(1)	176,465	55,225	26,364	8.4	3.4	2.0
Electric	7,457	1,666	(1)	154,376	27,622	6,606	7.4	1.7	0.5
Other	.....	.....	.....	22,089	27,603	19,758	1.1	1.7	1.5
Electric motors	**21,074**	**5,520**	**753**	**416,054**	**134,828**	**33,209**	**100.0**	**100.0**	**100.0**
Run by current generated by establishment	13,617	3,854	753	261,678	107,206	26,603	62.9	79.5	80.1
Run by rented power	7,457	1,666	(1)	154,376	27,622	6,606	37.1	20.5	19.9

[1] Not reported.

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

The total primary power used in the eight industries combined increased from 1,310,834 horsepower in 1899 to 2,099,050 horsepower in 1909, or 60.1 per cent. At each of the three censuses steam power constituted considerably more than two-thirds of the total primary power, the proportion being somewhat greater in 1904 than in either 1899 or 1909. Water power, which in 1899 formed 28.5 per cent of the total primary power formed but 20.8 per cent in 1909. There was a marked increase, on the other hand, in the relative importance of the power of electric motors operated by purchased current (rented electric power). The amount of such power increased from 6,606 horsepower, or less than 1 per cent of the total primary power, in 1899, to 154,376 horsepower, or 7.4 per cent of the total, in 1909. The number and horsepower of electric motors used for distributing power by means of current generated in the establishment also shows a rapid increase.

SPECIAL STATISTICS RELATING TO MATERIALS AND EQUIPMENT.

Raw fibers used.—Table 9 gives the quantities of the several raw fibers used as materials in the eight textile industries in 1909 and 1899. Mills which confine their consumption of raw material to some one fiber often buy yarns of other fibers for weaving; such consumption is not, however, covered by Table 9.

Table 9

INDUSTRY.	COMBINED TEXTILES—RAW FIBERS CONSUMED (POUNDS). Cotton. 1909	1899	Wool. 1909	1899	Animal hair and fur.[1] 1909	1899	Silk. 1909	1899	Flax. 1909	1899	Hemp, jute, etc. 1909	1899
Total	**2,465,225,572**	**1,923,704,600**	**559,850,995**	**412,745,779**	**41,549,822**	**35,737,924**	**17,729,306**	**9,760,770**	**28,063,703**	**16,980,646**	**632,786,278**	**507,777,585**
Cotton goods, including cotton small wares	2,335,344,906	1,817,643,360	41,400	.....	.....	.....	257,102	.....	1,108,918	.....	22,087	.....
Cotton goods	2,332,262,636	1,814,002,512	41,400	.....	.....	.....	257,102	.....	1,108,918	.....	22,087	.....
Cotton small wares	3,082,270	3,640,878	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Woolen, worsted, and felt goods and wool hats	21,399,731	41,470,560	488,368,660	342,498,189	33,447,534	28,480,048	.....	.....	.....	.....	.....	.....
Woolen goods	15,801,394	34,967,959	87,037,951	150,200,616	17,719,863	21,034,607	.....	.....	.....	.....	.....	.....
Worsted goods	4,222,667	5,270,751	387,717,415	179,077,936	7,441,659	4,504,438	.....	.....	.....	.....	.....	.....
Felt goods	1,375,670	1,225,850	12,409,826	9,606,263	8,144,011	2,819,521	.....	.....	.....	.....	.....	.....
Wool hats	.....	.....	1,203,498	2,713,374	142,001	121,482	.....	.....	.....	.....	.....	.....
Hosiery and knit goods	75,416,023	49,451,301	7,068,788	17,053,907	191,344	962,119	.....	.....	.....	.....	.....	.....
Carpets and rugs, other than rag	5,147,130	1,943,942	64,135,020	51,871,334	5,400,944	6,189,757	.....	.....	.....	.....	.....	.....
Shoddy	293,292	172,052	237,097	422,349	2,510,000	106,000	.....	.....	.....	.....	.....	.....
Silk and silk goods, including throwsters	.....	.....	.....	.....	.....	.....	17,472,204	9,760,770	.....	.....	.....	.....
Cordage and twine and jute and linen goods	27,624,490	13,022,755	.....	.....	.....	.....	.....	.....	26,954,785	16,980,646	632,764,191	507,777,585

[1] Includes 7,938,735 pounds of camel, alpaca, vicuna, and mohair in 1909 and 6,217,641 pounds in 1899.

Cotton is the fiber most generally used as a material, and in 1909 the purchase of raw cotton was reported by all of the seven branches of the combined textile industry using raw fiber except the silk industry. In 1909 cotton formed 65.8 per cent of the entire amount of raw fiber used, as compared with 66.2 per cent in 1899. The increase between 1899 and 1909 in the amount of cotton used in the textile industries was 541,520,972 pounds, or 28.1 per cent. In the cotton goods industry (including the manufacture of cotton small wares), which in 1909 consumed 94.7 per cent of the cotton used in the combined textile industries, there was an increase of 517,701,516 pounds, or 28.5 per cent. There was an increase of 25,964,722 pounds, or 52.5 per cent, during the decade, in the amount of cotton used in the hosiery and knit goods industry, while in the manufacture of carpets and rugs there was an increase of 3,203,188 pounds, or 164.8 per cent. In the other branches of the woolen industry, on the other hand, there was a material decrease in the use of cotton between 1899 and 1909.

Hemp, jute, and similar fibers, other than flax, ranked next to cotton in quantity used (though not in value), but the consumption reported is confined almost exclusively to the industry designated "cordage and twine and jute and linen goods." Aside from fibers of this character, wool is next in importance as a material in the textile industries, comprising in 1909 14.9 per cent of the entire quantity of fiber reported. There was an increase in the consumption of wool from 1899 to 1909 of 147,105,216 pounds, or 35.6 per cent. The increase was practically confined to the carpet and rug and to the worsted and the felt goods branches of the woolen industry. In the carpet and rug industry the increase was 12,263,686 pounds, or 23.6 per cent; in the worsted goods branch of the woolen industry the increase was 207,739,479 pounds, or 115.4 per cent; and in the felt goods branch the increase was 2,803,563 pounds, or 29.2 per cent. In the period from 1899 to 1909 there was a decrease in the quantity of wool used in the hosiery and knit goods and the shoddy industries, and in the woolen goods and wool hat branches of the woolen industry. The greatest decrease is shown for the woolen goods branch of the woolen industry, which used 150,200,616 pounds of wool in 1899 and only 87,037,951 pounds in 1909—a reduction of 42.1 per cent. This does not indicate a falling off to that extent in the manufacturing capacity of the industry, but that owing to the demands of fashion, establishments which formerly engaged in the manufacture of woolen goods turned their attention to worsteds. In the hosiery and knit goods industry the decrease was 10,885,119 pounds, or 60.6 per cent.

The consumption of animal hair and fur by the combined industries was somewhat greater in 1909 than in 1899. There was a notable increase in the consumption of such material in the manufacture of shoddy, the quantity reported for 1909 being almost 24 times as great as that used in 1899.

The use of raw silk is practically confined to the silk industry, although in 1909 a small amount was used in the cotton goods industry. The increase between 1899 and 1909 in the quantity of raw silk used was 7,968,536 pounds, or 81.6 per cent. Some of the other textile industries, however, used considerable quantities of silk yarn. (See Table 10.)

Yarns purchased.—Table 10 shows, for 1909 and 1899, the quantity of purchased yarns used in the seven textile industries which use yarns, and in the branches of the cotton goods and woolen industries. The large quantities of yarns made in the same establishments which used them as material in further manufacture are not included.

Table 10

COMBINED TEXTILES—YARN PURCHASED (POUNDS).

INDUSTRY.	Cotton.		Woolen, worsted, and merino.		Silk.		Linen.		Jute, ramie, and other vegetable fiber.		Other kinds.	
	1909	1899	1909	1899	1909	1899	1909	1899	1909	1899	1909	1899
Total	430,483,305	293,368,075	122,714,085	89,383,267	9,929,573	5,047,955	10,652,249	10,943,297	58,817,959	41,240,020	2,060,269	1,222,943
Cotton goods, including cotton small wares	126,707,003	94,692,864	1,613,118	1,531,103	2,062,006	560,680	669,532	1,575,403	406,705	220,507	854,161	1,009,745
Cotton goods	108,360,478	83,832,216	1,251,282	1,209,444	1,923,727	507,119	665,532	1,575,403	350,755	220,507	795,934	291,301
Cotton small wares	18,346,525	10,860,648	361,836	321,659	138,279	53,561	4,000	.....	55,950	.....	58,227	718,444
Woolen, worsted, and felt goods and wool hats	39,432,613	35,394,433	62,167,817	34,732,876	282,536	131,929	14,453	27,064	1,148,389	1,118,767	.....	.....
Woolen goods	16,888,501	21,922,136	8,035,598	12,489,092	70,959	57,964	12,685	7,845	1,031,880	1,118,767	.....	.....
Worsted goods	22,280,887	13,420,590	54,016,104	22,163,388	211,577	73,951	.....	1,314	2,170	.....	.....	.....
Felt goods	263,225	51,707	116,115	80,396	.....	14	1,768	17,905	114,339	.....	.....	.....
Wool hats	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hosiery and knit goods	216,987,611	131,820,068	20,524,878	10,426,592	982,753	266,247	[1] 241,754	71,478	.....	44,682	.....	.....
Carpets and rugs, other than rag	26,166,241	19,823,561	37,595,684	42,452,553	196,840	188,414	8,792,876	8,388,211	55,592,343	38,846,413	.....	.....
Shoddy	.....	.....	202,000	.....	.....	.....	.....	.....	70,000	.....	.....	.....
Silk and silk goods, including throwsters	[2] 14,111,878	[3] 6,664,069	610,588	239,461	6,405,438	3,894,811	(4)	.....	.....	.....	1,063,888	213,198
Cordage and twine and jute and linen goods	7,077,959	4,973,080	.....	682	.....	5,874	933,634	[5] 881,141	1,600,522	1,000,651	142,211	.....

[1] Includes jute and other vegetable fiber yarns.
[2] Includes 1,494,586 pounds of mercerized cotton yarn.
[3] Includes 219,861 pounds of mercerized cotton yarn.
[4] Included with "other kinds."
[5] Includes hemp yarn.

An increased quantity of each kind of yarn was purchased in 1909 as compared with 1899 except in the case of linen yarn, for which a slight decrease is shown. Of the different kinds of yarns purchased silk yarn shows the largest percentage of increase in consumption (96.7 per cent), and cotton yarn the next largest (46.7 per cent). The amount of linen yarns purchased decreased 2.7 per cent, while that of jute, ramie, and other vegetable fiber yarns increased 42.6 per cent, and that of woolen, worsted, and merino yarns 37.3 per cent.

Purchased cotton yarn was used in each of the seven branches of the combined textile industry covered by the table except the wool hat and shoddy industries, and, except in the woolen mills, larger quantities were used in 1909 than 1899. Purchased woolen, worsted, and merino yarns were used in 1909 in every industry covered by the table except the manufacture of cordage and twine and jute and linen goods and wool hats. The amount of purchased silk yarn used shows relatively large increases in practically every branch of the combined textile industry.

More than four-fifths (82.5 per cent) of the purchased linen yarns and nearly 95 per cent of the purchased jute yarns in 1909 were used in the carpet and rug industry, the quantities used being greater that year than in 1899.

Total production and consumption of cotton and woolen yarns.—The returns for 1909 permit of a tabulation of the total production and the total consumption of cotton, woolen and worsted, and merino yarns in the textile industries, as each establishment reported the quantities of these yarns made for its own consumption, the quantities made for sale, and the quantities of purchased yarns used. Table 11 presents statistics on this subject for the several industries.

Of the total production of cotton yarn in the textile industries in 1909, 1,647,131,776 pounds, or 77.4 per cent, was made for consumption in the establishment producing and 482,046,102 pounds, or 22.6 per cent, for sale. The total consumption in the seven industries covered by Table 11 includes 430,483,305 pounds purchased in addition to that made for consumption in the mills producing. The excess of the total production over the total consumption in these industries was 51,562,797 pounds, which is equal to 2.4 per cent of the production; this represents approximately the quantity of cotton yarn used in other industries and in the hand trades, that exported, and in stocks on hand at close of the year. In like manner the excess of the production shown over the consumption of woolen and worsted yarns in the specified industries was 2,894,107 pounds, or eight-tenths of 1 per cent of the total production; and in the case of merino yarns, 7,305,393 pounds, or 10.9 per cent of the total production.

Table 11 INDUSTRY.	Cotton yarns (pounds).	Woolen and worsted yarns (pounds).	Merino yarns (pounds).
Production	**2,129,177,878**	**353,834,571**	**66,855,573**
Cotton goods, including cotton small wares	2,040,290,743	.....	.....
Woolen, worsted, and felt goods, and wool hats	7,343,235	292,447,515	45,330,262
Carpets and rugs, other than rag	4,183,091	52,847,303	.....
Hosiery and knit goods	76,628,689	8,539,753	21,345,311
Cordage and twine and jute and linen goods	732,120	.....	.....
Shoddy	.....	.....	180,000
Consumption	**2,077,615,081**	**350,940,464**	**59,550,180**
Cotton goods, including cotton small wares	1,696,626,751	1,307,448	305,670
Woolen, worsted, and felt goods, and wool hats	44,450,262	235,683,662	33,400,724
Carpets and rugs, other than rag	20,189,343	88,289,344	584,188
Hosiery and knit goods	286,158,888	25,050,022	24,871,598
Cordage and twine and jute and linen goods	7,077,959	.....	.....
Silk and silk goods	14,111,878	610,588	.....
Shoddy	.....	.....	382,000

Production, imports, exports, and consumption of raw fibers.—Table 12 shows, for the United States as a whole, the production, imports, exports, and consumption of the leading raw fibers for 1909, 1899, and 1889, together with the total value and average value per pound of the imports and exports, respectively.

The aggregate quantity of textile fibers produced in the United States in 1909, as shown in the table, was 5,497,285,000 pounds, as compared with 4,055,298,000 pounds in 1889, the increase for the 20-year period being 1,441,987,000 pounds, or 36 per cent. During the same period the imports of textile fibers increased from 557,688,000 pounds to 1,054,545,000 pounds, or 89 per cent, the exports from 2,489,050,000 pounds to 3,241,824,000 pounds, or 30 per cent, and the consumption in the United States from 2,021,224,000 pounds to 3,740,369,000 pounds, or 85 per cent.

The United States used more than one-fifth of the world's production of raw silk in 1909, ranking next to China in the consumption of this product. The increasing importance of manila hemp and sisal in the manufacture of cordage and twine is noteworthy. By far the greater portion of the jute imported is used in the manufacture of gunny bagging or burlap, large quantities of which are used for covering cotton bales, for grain sacks, and for various other purposes.

PRODUCTION, IMPORTS, EXPORTS, AND CONSUMPTION OF THE LEADING RAW TEXTILE FIBERS: 1909, 1899, AND 1889.

[The statistics for production were collected by the Bureau of the Census, except for flax for 1909, and for wool. Those for imports and exports were obtained from the reports of the Bureau of Foreign and Domestic Commerce, Department of Commerce. For some of the other figures, nonofficial sources have been consulted, and for these only an approximation to the facts is claimed. The statistics for production are for the growth year, those for imports and exports for the fiscal year beginning July 1, and those for consumption for the census year.]

Table 12

FIBER.	Year.	Production (pounds).	IMPORTS.			EXPORTS (INCLUDING REEXPORTS).			Consumption (pounds).
			Quantity (pounds).	Value.	Average value per pound.	Quantity (pounds).	Value.	Average value per pound.	
Cotton	1909	5,157,691,000	86,038,000	$15,816,000	$0.184	3,212,240,000	$451,746,000	$0.141	2,465,226,000
	1899	4,729,968,000	67,399,000	7,961,000	0.118	3,127,607,000	243,158,000	0.078	1,923,705,000
	1889	3,736,256,000	8,606,000	1,393,000	0.162	2,472,048,000	251,008,000	0.102	1,193,399,000
Wool [1]	1909	328,111,000	263,928,000	51,221,000	0.194	4,055,000	869,000	0.214	559,851,000
	1899	272,191,000	155,928,000	20,261,000	0.130	7,903,000	1,219,000	0.154	412,746,000
	1889	295,779,000	105,431,000	15,264,000	0.145	3,520,000	590,000	0.168	374,103,000
Silk, including cocoons	1909	.....	20,412,000	65,439,000	3.206	93,000	336,000	3.602	17,729,000
	1899	.....	11,289,000	44,568,000	3.956	119,000	453,000	3.799	9,761,000
	1889	.....	6,106,000	23,374,000	3.828	10,000	78,000	4.101	6,377,000
Flax	1909	4,000,000	28,585,000	3,536,000	0.124	121,000	13,000	0.108	28,064,000
	1899	840,000	15,606,000	1,646,000	0.105	11,000	85	0.009	16,981,000
	1889	241,000	18,028,000	2,188,000	0.121	.....	.....	.....	[2] 18,269,000
Hemp	1909	7,483,000	14,388,000	1,040,000	0.072	925,000	59,000	0.063	19,724,000
	1899	11,751,000	7,616,000	450,000	0.059	336,000	17,000	0.051	25,589,000
	1889	23,022,000	[3] 81,964,000	[3] 7,342,000	0.090	[3] 556,000	[3] 54,000	0.098	[4] 104,430,000
Jute	1909	.....	152,667,000	3,728,000	0.024	876,000	30,000	0.034	260,379,000
	1899	.....	230,032,000	3,956,000	0.017	60,000	1,000	0.016	206,250,000
	1889	.....	202,494,000	3,250,000	0.016	930,000	11,000	0.011	[5] 201,555,000
Manila hemp	1909	.....	208,887,000	10,517,000	0.050	19,542,000	1,345,000	0.069	131,612,000
	1899	.....	95,478,000	7,172,000	0.075	2,287,000	246,000	0.108	123,242,000
	1889	.....	(6)	(6)	.....	(6)	(6)	.....	(6)
Sisal	1909	.....	223,924,000	11,441,000	0.050	2,191,000	128,000	0.058	203,849,000
	1899	.....	172,303,000	11,782,000	0.068	3,120,000	206,000	0.066	146,353,000
	1889	.....	(6)	(6)	.....	(6)	(6)	.....	(6)
Other vegetable fibers	1909	.....	55,716,000	2,157,000	0.039	1,781,000	89,000	0.050	[8] 53,935,000
	1899	.....	37,410,000	1,366,000	0.034	4,151,000	202,000	0.049	[8] 33,259,000
	1889	.....	[7] 135,059,000	[7] 7,762,000	0.057	[7] 11,968,000	[7] 737,000	0.062	[8] 123,091,000

[1] The statistics of production are as estimated by the National Association of Wool Manufacturers and include pulled wool, while those of imports and exports include hair of the alpaca, goat, and other like animals.
[2] Computed from other figures shown.
[3] Includes manila.
[4] Arrived at by subtraction. Manila hemp is included.
[5] Included under "Hemp."
[6] Included under "Other vegetable fibers."
[7] Includes sisal.
[8] Arrived at by subtraction. Sisal is included.

Table 13 gives the world's production of the leading textile fibers, by countries, for 1909, 1899, and 1889. It may be noted that although a considerable amount of flax is raised in the United States, most of it is grown for the seed alone, and only rough estimates are available for the small production of flax fiber utilized as a textile material.

In 1909 the United States produced 31 per cent of the total reported production of the leading textile fibers, 49 per cent of the two most important fibers, cotton and wool, combined, and 61 per cent of cotton alone. The cotton crop of the United States in 1909 was below the normal; the country, however, supplied about two-thirds of the world's production in 1907 and 1908, and more than seven-tenths in 1911.

The relative importance of the textile fibers named in the table has undergone considerable change since the beginning of the nineteenth century. Flax, which was used to a larger extent than any other fiber in 1800, now ranks fourth, and the quantity of flax produced is only about three times as large as at the beginning of the last century. The production of wool, on the other hand, has increased from about 500,000,000 pounds in 1800 to nearly 2,800,000,000 pounds, or more than five times as much, in 1909, and the production of cotton from about 300,000,000 pounds to 8,505,000,000 pounds, or more than twenty-eight times as much. The most remarkable increase, however, has been in the production of jute, the quantity of this fiber produced in 1850 being about 60,000,000 pounds, as compared with 2,918,000,000 pounds in 1909.

The increase in the world's production of textile fibers between 1889 and 1909 were as follows: Cotton, 45 per cent; wool, 13 per cent; silk, 112 per cent; flax, 86 per cent; and jute, 57 per cent. Hemp shows a decrease of 1 per cent.

WORLD'S PRODUCTION OF THE LEADING TEXTILE FIBERS: 1909, 1899, AND 1889.

[The statistics for the United States were collected by the Bureau of the Census, except those for flax for 1909, and for wool. These statistics, as well as the statistics for foreign countries, have been compiled from a number of sources. Among them are reports of the National Association of Wool Manufacturers, Boston, of the Flax Supply Association, Belfast, of Russian Departments of Commerce and Agriculture, St. Petersburg, and of the Silk Association of America, New York, and data furnished by the International Flax Twine Co., Chicago, by the Columbia Rope Co., Auburn, N. Y., and by Ralli Bros., New York. Since it has not been practicable to secure satisfactory data in all instances, only an approximation to the facts is claimed for the statistics not collected by special inquiries.]

Table 13

Country.	Year.	Production (pounds).					
		Cotton.	Wool.	Silk.[1]	Flax.	Hemp.	Jute.
Total	1909	8,505,101,000	2,763,421,000	85,048,000	1,872,127,000	1,450,569,000	2,918,000,000
	1899	7,034,968,000	[2] 2,668,391,000	60,812,000	1,142,482,000	1,525,875,000	2,200,000,000
	1889	5,873,856,000	[3] 2,445,479,000	40,066,000	1,007,224,000	1,470,270,000	1,860,000,000
United States	1909	5,157,691,000	328,111,000	.....	4,000,000	7,483,000	.....
	1899	4,729,968,000	272,101,000	.....	840,000	11,751,000	.....
	1889	3,736,256,000	265,779,000	.....	241,000	23,022,000	.....
Brazil	1909	180,000,000	1,130,000	.....	.....	.....	.....
	1899	150,000,000	1,500,000	.....	.....	.....	.....
	1889	120,000,000	1,875,000	.....	.....	.....	.....
Argentina	1909	.....	392,410,000	.....	.....	.....	.....
	1899	.....	370,000,000	.....	.....	.....	.....
	1889	.....	376,700,000	.....	.....	.....	.....
United Kingdom	1909	.....	133,705,000	.....	[4] 26,034,000	.....	.....
	1899	.....	140,200,000	.....	16,034,000	.....	.....
	1889	.....	147,500,000	.....	42,139,000	.....	.....
Russia	1909	360,000,000	380,000,000	(5)	1,504,000,000	1,021,223,000	.....
	1899	300,000,000	361,100,000	(5)	876,788,000	1,100,000,000	.....
	1889	166,000,000	291,500,000	(5)	705,011,000	1,000,000,000	.....
France	1909	.....	78,000,000	1,486,000	[4] 46,340,000	30,875,000	.....
	1899	.....	103,000,000	1,235,000	27,839,000	47,109,000	.....
	1889	.....	124,800,000	1,363,000	53,086,000	86,922,000	.....
Italy	1909	.....	21,500,000	9,373,000	[6] 44,800,000	150,000,000	.....
	1899	.....	21,400,000	7,415,000	[7] 44,741,000	160,843,000	.....
	1889	.....	21,400,000	6,350,000	31,736,000	180,458,000	.....
Austria-Hungary	1909	.....	41,600,000	838,000	[4] 104,332,000	144,513,000	.....
	1899	.....	64,300,000	605,000	112,809,000	145,581,000	.....
	1889	.....	54,300,000	580,000	99,536,000	143,868,000	.....
Turkey	1909	16,000,000	135,500,000	(5)	.....	.....	.....
	1899	25,000,000	100,500,000	(5)	.....	.....	.....
	1889	8,000,000	50,000,000	(5)	.....	.....	.....
British Indies	1909	1,801,000,000	50,000,000	[8] 518,000	.....	73,704,000	2,918,000,000
	1899	837,500,000	85,000,000	[8] 772,000	.....	27,755,000	2,200,000,000
	1889	1,200,000,000	72,000,000	[8] 463,000	.....	15,000,000	1,860,000,000
Japan	1909	(5)	.....	30,135,000	.....	18,003,000	.....
	1899	(5)	.....	12,388,000	.....	24,161,000	.....
	1889	(5)	.....	7,828,000	.....	(5)	.....
China	1909	300,000,000	42,253,000	35,697,000	.....	.....	.....
	1899	200,000,000	35,000,000	34,344,000	.....	.....	.....
	1889	200,000,000	(5)	21,771,000	.....	.....	.....
Egypt	1909	455,500,000	3,000,000	.....	.....	.....	.....
	1899	647,500,000	3,000,000	.....	.....	.....	.....
	1889	291,000,000	2,800,000	.....	.....	.....	.....
Australia and New Zealand	1909	.....	756,500,000	.....	.....	.....	.....
	1899	.....	510,000,000	.....	.....	.....	.....
	1889	.....	550,000,000	.....	.....	.....	.....
All other countries	1909	235,000,000	309,013,000	7,001,000	[4] 51,721,000	3,748,000	.....
	1899	145,000,000	600,000,000	4,053,000	63,431,000	2,015,000	.....
	1889	152,000,000	456,825,000	1,702,000	75,475,000	15,000,000	.....

[1] Does not include Tussah silk.
[2] Except for the United States and the United Kingdom, the figures are for 1900.
[3] Except for the United States, the figures relate to 1891.
[4] The figures relate to 1908.
[5] Included in "all other countries."
[6] The figures relate to 1902.
[7] The figures relate to 1895.
[8] Exports, instead of production.

The total estimated production for 1909 of the leading textile fibers, as shown in the table, was 17,594,356,000 pounds, of which cotton constituted 48 per cent; wool, 16 per cent; silk, about one-half of 1 per cent; flax, 11 per cent; hemp, 8 per cent; and jute, 17 per cent. During the 20 years covered by the table the proportion which cotton constituted of all fibers increased from 46 to 48 per cent, that for flax from 8 to 11 per cent, and that for jute from 15 to 17 per cent; silk also showed a slight increase in the proportion which it represented of the total, while the proportions represented by wool and hemp decreased. The total supply of these textile fibers in commercial channels at the beginning of the nineteenth century amounted to approximately 1,400,000,000 pounds, of which cotton formed about 22 per cent; wool, 33 per cent; silk, 2 per cent; and flax, 43 per cent.

Producing spindles.—Table 14 gives the number of producing spindles in active textile mills at the time of each census from 1869 to 1909, inclusive. It does not include spindles in establishments engaged primarily in the manufacture of products other than textiles, nor spindles employed on flax, hemp, jute, and allied fibers, of which latter class 142,169 were returned in 1909; nor does it include doubling and twisting spindles which do not use raw fiber.

Table 14	NUMBER OF PRODUCING SPINDLES.				
CENSUS YEAR.	Total.	Cotton spindles.	Silk spindles.	Woolen spindles.	Worsted spindles.
1909	33,866,479	28,178,862	1,777,962	2,156,849	1,752,806
1904	28,721,742	23,672,064	1,394,020	2,456,389	1,199,269
1899	23,901,557	19,463,984	1,213,493	2,229,181	994,899
1889	[1] 18,092,133	14,384,180	718,360	2,332,269	657,324
1879	[1] 13,170,743	10,653,435	262,312	1,915,070	339,926
1869	[1] 9,338,953	7,280,800	12,040	1,845,496	200,617

[1] Includes some accessory spindles, except for silk.

The percentage of increase from 1899 to 1909 in the total number of spindles was greater than that for any other decade shown. In 1909 cotton spindles formed 83.2 per cent of the total number, silk spindles, 5.2 per cent, and woolen and worsted spindles combined, 11.5 per cent. In 1909 cotton spindles represented a slightly larger proportion of all spindles than in 1904 and 1899, and woolen and worsted spindles combined a slightly smaller proportion.

Looms.—The number of power and of hand looms, respectively, used in the manufacture of the several kinds of textiles, as reported for each census year from 1869 to 1909, is shown in Table 15. It does not include looms in establishments engaged primarily in the manufacture of products other than textiles, nor looms employed on flax, hemp, jute, and similar fibers.

The increase in the total number of power looms from 1899 to 1909 was 252,264, or 44 per cent. There was an increase from 1899 to 1909 in the number of each kind of power looms shown in the table except the woolen looms, which decreased in number, though the combined number of woolen and worsted looms increased. The largest relative increase from 1904 to 1909 was in the worsted looms (power looms only), 40.4 per cent; the number employed on silk goods increased 26.1 per cent and the number on cotton goods 18.9 per cent. Cotton looms operated by power formed 80.6 per cent of the total number of looms in 1909 as compared with 79.5 per cent in 1899; silk power looms, 9.1 per cent as compared with 7.7 per cent; woolen power looms, 4 per cent as compared with 6.4 per cent; and worsted power looms, 4.8 per cent as compared with 4.6 per cent. The use of hand looms has been decreasing very rapidly since 1879 and their number in 1909 was insignificant.

Table 15	NUMBER OF LOOMS.					
CLASS OF LOOMS AND CENSUS YEAR.	Total.	Cotton looms.	Silk looms.	Woolen looms.	Worsted looms.	Carpet and rug looms.
Power:						
1909	825,418	665,652	75,406	33,148	39,476	11,736
1904	696,785	559,781	59,775	38,104	28,123	11,002
1899	573,214	455,752	44,257	36,734	26,630	9,841
1889	412,441	324,866	20,822	38,523	19,929	8,301
1879	285,494	227,383	5,321	32,955	11,703	8,132
1869	200,791	157,748	1,281	34,183	6,128	1,451
Hand:						
1909	248	(1)	(2)	41		207
1904	1,039	(1)	283	66		690
1899	1,311	(1)	173	83		1,055
1889	4,823	(1)	1,747	448		2,628
1879	7,929	(1)	3,153	781		3,995
1869	4,163	(1)	188	(1)		3,975

[1] Not reported. [2] Included with power looms.

COTTON MANUFACTURES

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COTTON MANUFACTURES.

GENERAL STATISTICS FOR THE INDUSTRY AS A WHOLE.

Scope of the industry.—Under the census classification "cotton goods, including cotton small wares," two classes of mills are distinguished: (1) those producing "cotton goods," including mills engaged in the spinning of cotton or in the weaving of piece goods, or in both of these processes; and (2) those producing "cotton small wares," including establishments manufacturing narrow fabrics, such as tapes, webbing and mill banding, braids, shoe and corset laces, and similar goods. All establishments producing piece goods are included in the former group, even though manufacturing some narrow woven goods or braids; and the latter group includes some establishments that do spinning, but only in cases where the yarns are used by the establishment in the manufacture of cotton small wares.

Summary for the industry: 1909.—Table 1 presents a summary of the statistics of the cotton goods industry as a whole for 1909.

Table 1	Total for the industry.	Establishments engaged primarily in manufacturing—	
		Cotton goods.	Cotton small wares.
Number of establishments	1,324	1,208	116
Persons engaged in the industry	387,771	379,538	8,233
Proprietors and firm members	377	303	74
Salaried employees	8,514	8,053	461
Wage earners (average number)	378,880	371,182	7,698
Primary horsepower	1,296,517	1,286,105	10,412
Capital	$822,237,529	$808,412,757	$13,824,772
Expenses	554,221,688	542,453,004	11,768,684
Services	147,270,903	143,504,935	3,765,968
Salaries	14,411,758	13,715,218	696,540
Wages	132,859,145	129,789,717	3,069,428
Materials	371,009,470	364,013,504	6,995,966
Miscellaneous	35,941,315	34,934,565	1,006,750
Value of products	628,391,813	615,217,702	13,174,111
Value added by manufacture (value of products less cost of materials)	257,382,343	251,204,198	6,178,145

Of the two branches of the industry the cotton goods branch is by far the more important, comprising 91.2 per cent of the total number of establishments in the industry in 1909, and contributing 97.9 per cent of the total value of products.

Comparison with earlier censuses.—The first census at which statistics were obtained for the cotton goods industry was that of 1839. At that census 1,240 establishments were reported, giving employment to 72,119 persons, with products valued at $46,350,453; for 1849, 1,094 establishments were reported, giving employment to 92,286 hands, and manufacturing products valued at $61,869,184; and in 1859 there were 1,091 establishments, employing 122,028 hands, and with a value of products amounting to $115,681,774.

Table 2 summarizes the statistics of the industry (the manufacture of cotton goods and of cotton small wares combined) for each census from 1869 to 1909, inclusive. Prior to the census of 1899 no distinction was made between plants manufacturing cotton goods and those manufacturing cotton small wares, but at that census and also at the censuses of 1909 and 1904 they were reported separately. In this and all following tables, however, the statistics for the two classes of establishments are combined, except as especially noted.

The financial figures for 1869 are given in currency, which at that time was worth only about 80 cents, gold, to the dollar. For strict comparison, therefore, these figures should be reduced about 20 per cent.

The figures for 1879 do not include those for 249 mills, employing 12,928 hands, classed as "special mills," which were engaged in the manufacture of hosiery, webbing, tapes, and fancy fabrics, and mixed goods or other fabrics not sold as specific manufactures of wool or cotton. The cotton used in these mills cost $2,338,385, and the value of their products was $18,860,273.

Table 2	Cotton goods, including cotton small wares.											
	Number or amount.						Per cent of increase.[1]					
	1909	1904	1899	1889	1879	1869	1899-1909	1904-1909	1899-1904	1889-1899	1879-1889	1869-1879
Number of establishments	1,324	1,154	1,055	905	756	956	25.5	14.7	9.4	16.6	19.7	−20.9
Persons engaged in the industry	387,771	323,287	308,237	(2)	(2)	(2)	25.8	19.9	4.9	.....	.....	.....
Proprietors and firm members	377	432	474	(2)	(2)	(2)	−20.5	−12.7	−8.9	.....	.....	.....
Salaried employees	8,514	6,081	4,902	(2)	(2)	(2)	73.7	22.0	42.4	.....	.....	.....
Wage earners (average number)	378,880	315,874	302,861	218,876	172,544	135,369	25.1	19.9	4.3	(3)	(3)	(3)
Primary horsepower	1,296,517	986,604	795,834	464,881	275,504	146,040	62.9	31.4	24.0	71.2	68.7	88.6
Capital	$822,237,529	$613,110,655	$467,240,157	$354,020,843	$208,280,346	$140,706,291	76.0	34.1	31.2	32.0	70.0	48.0
Expenses	554,221,688	423,186,368	292,704,156	241,118,775	(2)	(2)	89.3	31.0	44.6	21.4	.....	.....
Services	147,270,903	106,443,687	94,039,951	69,489,272	42,040,510	39,044,132	56.6	38.4	13.2	35.3	65.3	7.7
Salaries	14,411,758	10,237,891	7,350,199	(2)	(2)	(2)	96.1	40.8	39.3	.....	.....	.....
Wages	132,859,145	96,205,796	86,689,752	(2)	(2)	(2)	53.3	38.1	11.0	.....	.....	.....
Materials	371,009,470	286,255,303	176,551,527	154,912,979	102,206,347	111,736,936	110.1	29.6	62.1	14.0	51.6	−8.5
Miscellaneous	35,941,315	30,487,378	22,112,678	16,716,524	(2)	(2)	62.5	17.9	37.9	32.3	.....	.....
Value of products	628,391,813	450,467,704	339,200,320	267,981,724	192,090,110	177,489,739	85.3	39.5	32.8	26.6	39.5	8.2
Value added by manufacture (value of products less cost of materials)	257,382,343	164,212,401	162,648,793	113,068,745	89,883,763	65,752,803	58.2	56.7	1.0	43.8	25.8	36.7

[1] A minus sign (−) denotes decrease. Where percentages are omitted, comparable figures are not available.
[2] Comparable figures not available.
[3] Figures not strictly comparable.

The cotton goods industry is one of the oldest and most typical factory industries in the United States. In 1909 it ranked third among the industries of the country in number of wage earners, being exceeded only by the lumber industry and the foundry and machine-shop industry, and seventh in value of products and in value added by manufacture.

The value of products reported for 1909, which, however, involves considerable duplication, was $628,391,813. The total cost of materials was $371,009,470, which was nearly three-fifths (59 per cent) of the total value of products, while the value added by manufacture (that is, the value of products less the cost of materials) was $257,382,343.

The industry gave employment to an average of 387,771 persons, of whom 378,880 were wage earners. The amount paid in salaries and wages was $147,270,903, which is equal to considerably more than half of the value added by manufacture.

The industry has had a steady growth throughout the 70 years for which statistics are available, the value of products in 1909 being more than thirteen times as great as in 1839, and the number of wage earners more than five times as great, while the number of establishments shows an increase of 84, or 6.8 per cent. For most of the items covered by the table the percentages of increase for the decade 1899–1909 were higher than those for any other decade. The advance in the prices of commodities during the past decade, however, doubtless accounts in part for some of these increases.

Summary, by states.—Table 3 summarizes the more important statistics of the industry by states, the states being arranged according to the value of products reported for 1909. In determining the rank of the states, all states are considered, regardless of whether or not they are shown in the table; hence some omissions occur in the several series of numbers indicating rank, as certain states included under "all other states" held a higher rank in some items than some of the states for which separate figures are given.

Table 3 — COTTON GOODS, INCLUDING COTTON SMALL WARES.

STATE.	Number of establishments: 1909	Wage earners. Average number: 1909	Wage earners. Per cent of total: 1909	Wage earners. Rank. 1909	Wage earners. Rank. 1904	Value of products. Amount: 1909	Value of products. Per cent of total: 1909	Value of products. Rank. 1909	Value of products. Rank. 1904	Value added by manufacture. Amount: 1909	Value added by manufacture. Per cent of total: 1909	Value added by manufacture. Rank. 1909	Value added by manufacture. Rank. 1904	Per cent of increase.[1] Wage earners (average number). 1899-1909	Wage earners. 1904-1909	Wage earners. 1899-1904	Value of products. 1899-1909	Value of products. 1904-1909	Value of products. 1899-1904	Value added by manufacture. 1899-1909	Value added by manufacture. 1904-1909	Value added by manufacture. 1899-1904
United States	**1,324**	**378,880**	**100.0**	....	....	**$628,391,813**	**100.0**	....	....	**$257,382,343**	**100.0**	....	....	**25.1**	**19.9**	**4.3**	**85.3**	**39.5**	**32.8**	**58.2**	**56.7**	**1.0**
Massachusetts	182	108,914	28.7	1	1	186,462,313	29.7	1	1	81,305,519	31.6	1	1	17.7	22.9	−4.2	67.8	43.4	17.0	43.3	63.3	−12.2
North Carolina	281	47,231	12.5	2	3	72,680,385	11.6	2	3	23,992,813	9.3	4	4	56.0	29.9	20.1	156.2	53.8	66.5	11.8	68.6	29.5
South Carolina	147	45,454	12.0	3	2	65,929,585	10.5	3	2	24,626,147	9.6	3	2	50.5	22.0	23.4	121.8	33.4	66.3	97.6	62.8	21.4
Rhode Island	106	28,786	7.6	4	4	50,312,597	8.0	4	5	24,911,358	9.7	2	3	19.8	16.3	3.0	90.3	45.5	30.8	69.0	67.1	1.1
Georgia	116	27,803	7.3	5	5	48,036,817	7.6	5	4	15,988,078	6.2	5	6	52.1	16.2	32.0	160.3	36.6	90.6	117.7	41.0	54.4
Pennsylvania	175	16,293	4.3	7	7	33,917,033	5.4	6	7	15,160,008	5.9	6	5	−4.2	6.7	−10.3	33.3	29.0	3.3	23.5	26.6	−2.4
New Hampshire	21	22,290	5.9	6	6	33,601,830	5.3	7	6	14,477,980	5.6	7	7	9.0	13.0	−3.5	46.1	13.7	28.4	31.2	31.1	0.1
Connecticut	52	14,360	3.8	9	8	24,231,881	3.9	8	8	12,272,159	4.8	8	8	8.8	9.5	−0.6	50.4	31.5	19.0	54.3	49.3	3.4
Alabama	51	12,731	3.4	10	10	22,211,748	3.5	9	9	7,833,501	3.0	11	11	52.8	10.9	37.8	172.4	32.5	105.6	135.6	65.1	42.7
Maine	16	14,634	3.9	8	9	21,932,225	3.5	10	10	10,541,746	4.1	9	9	6.6	18.2	−9.8	49.9	42.4	5.3	38.8	69.1	−17.9
New York	47	10,663	2.8	11	11	20,351,555	3.2	11	11	8,625,066	3.4	10	10	15.2	21.2	−5.0	88.7	51.5	24.5	70.1	80.1	−5.5
New Jersey	26	6,638	1.8	12	12	13,728,874	2.2	12	12	5,164,141	2.0	12	12	16.8	.....	.....	98.1	.....	.....	36.9	.....	.....
Virginia	10	5,057	1.3	13	14	7,489,653	1.2	13	14	2,790,630	1.1	13	13	72.5	46.3	17.9	182.1	67.0	68.9	124.5	65.9	35.3
Maryland	16	3,966	1.0	14	13	5,522,293	0.9	14	13	1,510,552	0.6	15	14	−16.1	−0.7	−15.5	1.8	5.3	−3.3	−36.7	10.1	−42.4
Tennessee	17	3,078	0.8	15	15	5,200,791	0.8	15	15	1,857,119	0.7	14	15	46.0	34.2	8.8	160.7	40.1	78.5	118.0	40.7	54.9
Mississippi	14	2,645	0.7	16	16	3,102,398	0.5	16	16	1,060,248	0.4	16	16	57.9	22.4	29.0	110.6	25.9	67.2	50.1	30.2	15.3
Texas	13	1,590	0.4	17	19	2,814,581	0.4	17	17	1,021,285	0.4	17	17	61.6	60.1	0.9	134.6	77.4	32.2	82.8	79.6	1.8
Indiana	7	1,582	0.4	18	17	2,501,598	0.4	18	19	831,601	0.3	19	20	11.3	34.8	−17.4	87.4	68.6	11.2	31.2	141.0	−45.7
Illinois	5	1,319	0.3	19	22	2,111,208	0.3	19	23	1,009,194	0.4	18	21	.....	153.2	.....	.....	244.4	.....	.....	217.3	.....
Kentucky	4	1,044	0.3	20	18	1,902,467	0.3	20	18	714,532	0.3	20	18	−22.7	1.3	−23.7	14.3	21.5	−6.0	3.2	78.5	−42.2
Ohio	4	177	(2)	24	26	395,175	0.1	25	26	161,543	0.1	25	25	.....	.....	.....	.....	.....	.....	.....	.....	.....
All other states	14	2,625	0.7	....	....	3,954,806	0.6	....	....	1,522,123	0.6	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....

[1] Percentages are based on figures in Table 45. A minus sign (−) denotes decrease. Percentage not shown where base is less than $100,000 for value added by manufacture, or where comparable figures can not be given without disclosing individual operations.
[2] Less than one-tenth of 1 per cent.

The industry is confined almost entirely to the states east of the Mississippi River. From the territory west of that river only 20 establishments were reported, these being distributed among five states, as follows: Texas, 13 establishments; Louisiana, 2; Missouri, 2; Arkansas, 2; and Kansas, 1. Among the states east of the Mississippi, on the other hand, there were only three states, namely, West Virginia, Florida, and Michigan, which were without cotton mills. Massachusetts is the most important state, ranking first both in 1909 and in 1904 in average number of wage earners, value of products, and value added by manufacture. In the year 1909 this state employed 28.7 per cent of the total number of wage earners and contributed 29.7 per cent of the total value of products for the United States. The number of wage earners in the cotton goods industry in Massachusetts increased 17.7 per cent during the decade 1899–1909, and the value of its products 67.8 per cent. North Carolina ranked second in 1909 both in number of wage earners and in value of products, and South Carolina third, these two states having changed places since

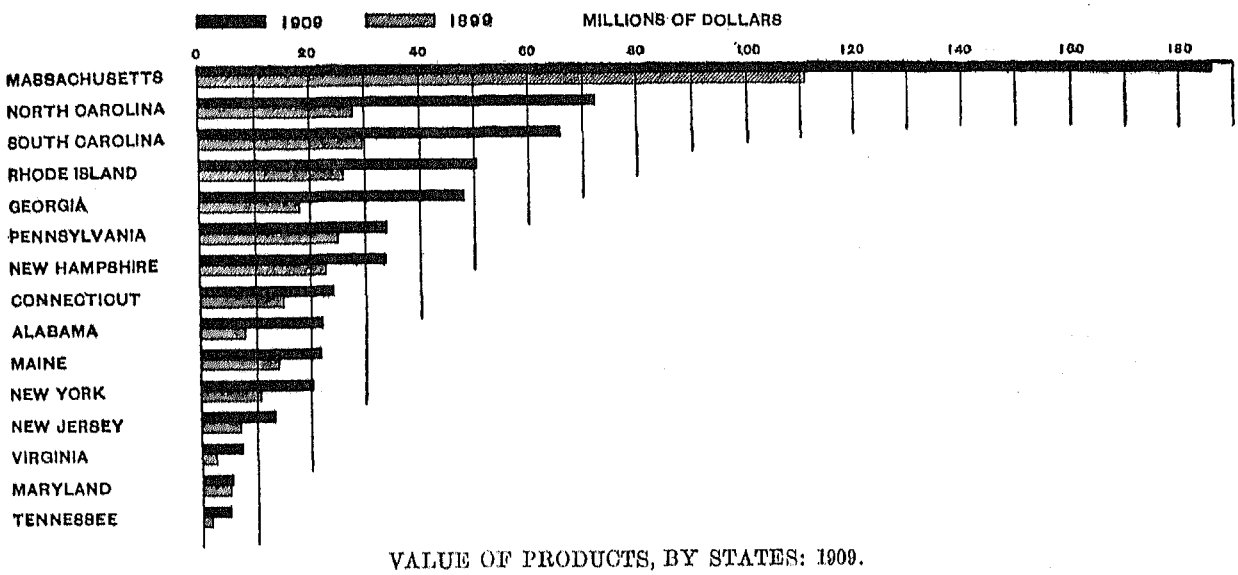
1904. Rhode Island ranked fourth in value of products in 1909, having advanced from fifth place in 1904, and fourth in the number of wage earners employed, the same position as in 1904; in value added by manufacture, however, it ranked second in 1909, having advanced from third place in 1904. Georgia, Pennsylvania, New Hampshire, Connecticut, and Alabama, in the order named, were the states next in rank in value of products in 1909.

Eight of the states listed in Table 3 show an increase of over 100 per cent for the period 1899–1909 in value of products, and seven of the eight show a gain of over 50 per cent in number of wage earners. In general, the percentages of increase in the leading Southern cotton manufacturing states were decidedly greater than those in the Northern states. Among the 10 leading states, Alabama shows the highest percentage of increase for the decade in value of products, and North Carolina the highest in number of wage earners; for the five-year period 1904–1909, however, North Carolina shows the greatest relative increase in both items.

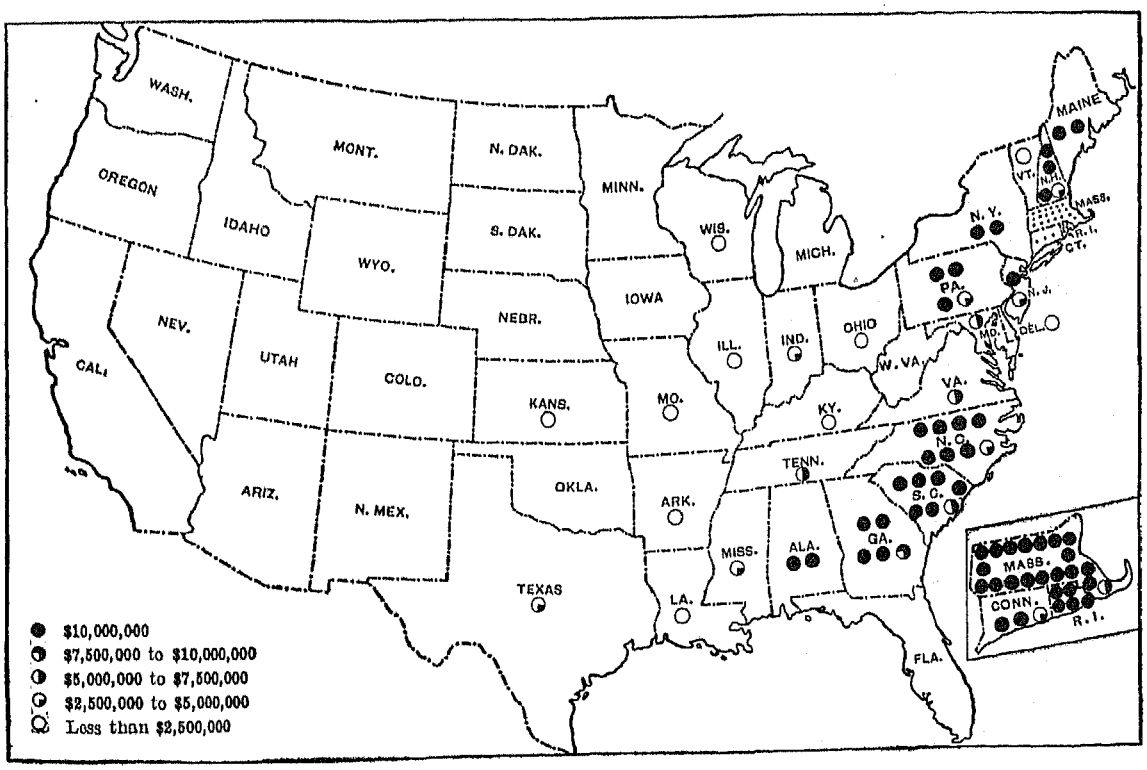
Most of the states held the same, or practically the same, rank in value added by manufacture in 1909 as in value of products.

The diagram below shows graphically the value of products reported for the most important states in the industry as a whole in 1909 and 1899, while the map shows the distribution of the value of products by states in 1909.

VALUE OF PRODUCTS FOR THE MOST IMPORTANT STATES: 1909 AND 1899.



VALUE OF PRODUCTS, BY STATES: 1909.



PERSONS ENGAGED IN THE INDUSTRY.

Summary: 1909.—Table 4 shows, for 1909, the number of persons engaged in the industry as a whole and in each of its branches, classified according to occupational status and sex, and in the case of wage earners, according to age also. It should be borne in mind that the sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

Table 4

BRANCH OF THE INDUSTRY AND CLASS OF PERSONS.	PERSONS ENGAGED IN THE INDUSTRY: 1909		
	Total.	Male.	Female.
Cotton goods, including cotton small wares	**387,771**	**221,299**	**166,472**
Proprietors and officials	4,461	4,410	51
Proprietors and firm members	377	355	22
Salaried officers of corporations	1,726	1,715	11
Superintendents and managers	2,358	2,340	18
Clerks	4,430	3,413	1,017
Wage earners (average number)	378,880	213,476	165,404
16 years of age and over	339,574	192,930	146,644
Under 16 years of age	39,306	20,546	18,760
Cotton goods	**379,538**	**218,205**	**161,333**
Proprietors and officials	4,167	4,121	46
Proprietors and firm members	303	281	22
Salaried officers of corporations	1,613	1,605	8
Superintendents and managers	2,251	2,235	16
Clerks	4,189	3,270	919
Wage earners (average number)	371,182	210,814	160,368
16 years of age and over	332,358	190,377	141,981
Under 16 years of age	38,824	20,437	18,387
Cotton small wares	**8,233**	**3,094**	**5,139**
Proprietors and officials	294	289	5
Proprietors and firm members	74	74	.....
Salaried officers of corporations	113	110	3
Superintendents and managers	107	105	2
Clerks	241	143	98
Wage earners (average number)	7,698	2,662	5,036
16 years of age and over	7,216	2,553	4,663
Under 16 years of age	482	109	373

The average number of persons engaged in the cotton manufacturing industry as a whole during 1909 was 387,771, of whom 378,880, or 97.7 per cent, were wage earners; 4,461, or 1.2 per cent, were proprietors and officials; and 4,430, or 1.1 per cent, were clerks, this class including other subordinate salaried employees. Of the total number, 221,299, or 57.1 per cent, were males, and 166,472, or 42.9 per cent, were females. Of the clerks, 23 per cent were females, and of the wage earners over 16 years of age, 43.2 per cent. The average number of children under 16 years of age employed as wage earners was 39,306, of whom nearly one-half were girls. Children constituted 10.4 per cent of the total number of wage earners. The larger proportion of proprietors and officials in the cotton small wares branch of the industry is in part due to the generally smaller size of the establishments.

In order to compare the distribution of the persons engaged in the industry according to occupational status in 1909 with that in 1904, it is necessary to use the classification employed at the earlier census. (See Introduction.) Such a comparison is made in Table 5.

Table 5

CLASS.	PERSONS ENGAGED IN THE INDUSTRY—BOTH BRANCHES COMBINED.				
	1909		1904		Per cent of increase:[1] 1904–1909
	Number.	Per cent distribution.	Number.	Per cent distribution.	
Total	**387,771**	**100.0**	**323,287**	**100.0**	**19.9**
Proprietors and firm members	377	0.1	432	0.1	−12.7
Salaried employees	8,514	2.2	6,981	2.2	22.0
Wage earners (average number)	378,880	97.7	315,874	97.7	19.9

[1] A minus sign (−) denotes decrease.

Each of the three classes shown in the table represented the same proportion of the total in both census years.

Table 6 shows the average number of wage earners in the industry as a whole, distributed according to age, and in the case of those 16 years and over, according to sex, for 1909, 1904, and 1899.

Table 6

CLASS.	AVERAGE NUMBER OF WAGE EARNERS IN THE INDUSTRY—BOTH BRANCHES COMBINED.					
	1909		1904		1899	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total	**378,880**	**100.0**	**315,874**	**100.0**	**302,861**	**100.0**
16 years of age and over	339,574	89.6	275,446	87.2	262,603	86.7
Male	192,930	50.9	147,283	46.6	135,721	44.8
Female	146,644	38.7	128,163	40.6	126,882	41.9
Under 16 years of age	39,306	10.4	40,428	12.8	40,258	13.3

The percentages of women and children employed decreased during each of the intercensal periods covered by the table, though the actual number of women employed was greater in 1909 than in either of the two earlier years.

The average number of wage earners in each state in 1909, 1904, and 1899 is given in Table 45. The distribution of the average number by sex and age is not shown for the individual states, but Table 46 gives such a distribution of the number employed on December 15, 1909, or the nearest representative day. The largest number of female wage earners employed in any state was 51,238 in Massachusetts, and the next largest number, 19,052, in North Carolina.

In three of the Southern states—Alabama, North Carolina, and South Carolina—nearly 19 per cent of all wage earners in the industry in 1909 were children under 16 years of age. In Massachusetts, the leading state in the industry, however, only 5.7 per cent were children.

The proportion of women employed was much larger in Massachusetts, New Hampshire, and Rhode Island than in the Southern states shown, the percentage in New Hampshire being 48.3, that in Rhode Island 43.3, and in Massachusetts 43.1.

Wage earners classified according to nature of employment.—The enumeration of spinners and weavers in cotton mills was first attempted at the census of 1899, but the form of the inquiry was so defective that it is not deemed advisable to place the data in comparison with that secured in 1909 and 1904. At the census of 1904 and again in 1909 a more satisfactory enumeration of the spinners and weavers employed in the industry was made. Table 7 shows, for the United States for 1909 and 1904, and for selected states for 1909, the distribution by sex and age of spinners, weavers, and all other wage earners. It should be noted that the absolute figures for the two censuses are not strictly comparable, owing to the fact that the numbers shown for 1904 are computed averages for the entire year, while those for 1909 are the numbers reported for December 15, or the nearest representative day. The difference between the number of wage earners on this day and the average number for the year, however, was only 8,818, or a little more than 2 per cent of the total; and since there is little variation from month to month in the proportion of the different classes of employees, the figures representing the per cent distribution are fairly comparable.

Table 7

CLASS.	WAGE EARNERS IN THE COTTON MANUFACTURING INDUSTRY.[1]						
	Total.	Spinners.		Weavers.		All other.	
		Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.
United States:							
1909	387,698	67,378	17.4	102,413	26.4	217,907	56.2
1904	315,874	60,428	19.1	101,556	32.2	153,890	48.7
16 years of age and over:							
1909	347,477	50,499	14.5	99,107	28.5	197,871	56.9
1904	275,446	41,334	15.0	99,226	36.0	134,886	49.0
Male—							
1909	197,420	20,447	10.4	53,323	27.0	123,650	62.6
1904	147,283	15,607	10.6	48,995	33.3	82,681	56.1
Female—							
1909	150,057	30,052	20.0	45,784	30.5	74,221	49.5
1904	128,163	25,727	20.1	50,231	39.2	52,205	40.7
Under 16 years of age:							
1909	40,221	16,879	42.0	3,306	8.2	20,036	49.8
1904	40,428	19,094	47.2	2,330	5.8	19,004	47.0
Male, 1909	21,024	6,831	32.5	1,671	7.9	12,522	59.6
Female, 1909	19,197	10,048	52.3	1,635	8.5	7,514	39.1
Selected states, 1909.							
Alabama	13,282	3,611	27.2	2,791	21.0	6,880	51.8
16 years of age and over	10,793	2,309	21.4	2,704	25.1	5,780	53.6
Male	6,668	926	13.9	1,587	23.8	4,155	62.3
Female	4,125	1,383	33.5	1,117	27.1	1,625	39.4
Under 16 years of age	2,489	1,302	52.3	87	3.5	1,100	44.2
Male	1,281	457	35.7	28	2.2	796	62.1
Female	1,208	845	70.0	59	4.9	304	25.2
Georgia	28,495	7,984	28.0	6,046	21.2	14,465	50.8
16 years of age and over	24,212	5,750	23.7	5,670	23.4	12,792	52.8
Male	14,993	2,542	17.0	3,297	22.0	9,154	61.0
Female	9,219	3,208	34.8	2,373	25.7	3,638	39.5
Under 16 years of age	4,283	2,234	52.2	376	8.8	1,673	39.1
Male	2,333	971	41.6	194	8.3	1,168	50.1
Female	1,950	1,263	64.8	182	9.3	505	25.9
Massachusetts	111,253	13,065	11.7	33,742	30.3	64,446	57.9
16 years of age and over	104,906	11,920	11.4	32,871	31.3	60,115	57.3
Male	56,914	3,966	7.0	16,520	29.0	36,428	64.0
Female	47,992	7,954	16.6	16,351	34.1	23,687	49.4
Massachusetts—Contd.							
Under 16 years of age	6,347	1,145	18.0	871	13.7	4,331	68.2
Male	3,101	504	16.3	394	12.7	2,203	71.0
Female	3,246	641	19.7	477	14.7	2,128	65.6
New Hampshire	22,016	2,385	10.8	4,620	21.0	15,011	68.2
16 years of age and over	21,578	2,213	10.3	4,557	21.1	14,808	68.6
Male	10,935	1,150	10.5	1,921	17.6	7,864	71.9
Female	10,643	1,063	10.0	2,636	24.8	6,944	65.2
Under 16 years of age	438	172	39.3	63	14.4	203	46.3
Male	205	117	44.1	48	18.1	100	37.7
Female	173	55	31.8	15	8.7	103	59.5
North Carolina	49,171	12,778	26.0	9,472	19.3	26,921	54.7
16 years of age and over	39,868	8,233	20.7	8,978	22.5	22,657	56.8
Male	25,137	3,527	14.0	5,504	21.9	16,106	64.1
Female	14,731	4,706	31.9	3,474	23.6	6,551	44.5
Under 16 years of age	9,303	4,545	48.9	494	5.3	4,264	45.8
Male	4,982	1,536	30.8	267	5.4	3,180	63.8
Female	4,321	3,010	69.7	227	5.3	1,084	25.1
Rhode Island	29,786	4,064	13.6	9,168	30.8	16,554	55.6
16 years of age and over	27,085	3,675	13.1	9,022	32.2	15,288	54.6
Male	15,091	1,660	11.0	4,922	32.6	8,509	56.4
Female	12,894	2,015	15.6	4,100	31.8	6,779	52.6
Under 16 years of age	1,801	389	21.6	146	8.1	1,266	70.3
Male	900	147	16.3	80	8.9	673	74.8
Female	901	242	26.9	66	7.3	593	65.8
South Carolina	46,065	12,650	27.5	12,572	27.3	20,843	45.2
16 years of age and over	37,449	7,503	20.2	11,775	31.4	18,111	48.4
Male	26,063	3,275	12.6	8,627	33.1	14,161	54.3
Female	11,386	4,288	37.7	3,148	27.6	3,950	34.7
Under 16 years of age	8,616	5,087	59.0	797	9.3	2,732	31.7
Male	4,843	2,379	49.1	472	9.7	1,992	41.1
Female	3,773	2,708	71.8	325	8.6	740	19.6

[1] For 1909 the figures are those reported for the 15th day of December, or the nearest representative day; for 1904 the average number is given.

Of the total number of wage earners in 1909, 17.4 per cent were spinners and 26.4 per cent were weavers. In 1904 spinners constituted 19.1 per cent and weavers 32.2 per cent of the total number of wage earners. The marked decline in the proportion of weavers is due in a measure to the more general installation of automatic looms, which make possible a great increase in the output per weaver.

The number of spinners in 1909 exceeded the number of weavers in each of the Southern states shown—Alabama, Georgia, North Carolina, and South Carolina—while in Massachusetts, New Hampshire, and Rhode Island the weavers outnumbered the spinners. This difference is due to the fact that in the Northern states the proportion of finer and more elaborate fabrics woven is greater than in the Southern states.

Table 8 shows, for the United States as a whole for 1909 and 1904, and for certain important states in the industry for 1909 only, the percentage of men, women, and children, respectively, in the total number of wage earners and in each of the three classes for which statistics are presented in Table 7.

Table 8

CLASS.	COTTON GOODS, INCLUDING COTTON SMALL WARES—PER CENT OF TOTAL.		
	16 years and over.		Under 16 years.
	Male.	Female.	
United States:			
All wage earners—			
1909	50.9	38.7	10.4
1904	46.6	40.6	12.8
Spinners—			
1909	30.3	44.6	25.1
1904	25.8	42.6	31.6
Weavers—			
1909	52.1	44.7	3.2
1904	48.2	49.5	2.3
All other—			
1909	56.7	34.1	9.2
1904	53.7	33.9	12.3
Selected states, 1909:			
Alabama—			
All wage earners	50.2	31.1	18.7
Spinners	25.6	38.3	36.1
Weavers	56.9	40.0	3.1
All other	60.4	23.6	16.0
Georgia—			
All wage earners	52.6	32.4	15.0
Spinners	31.8	40.2	28.0
Weavers	54.5	39.2	6.2
All other	63.3	25.2	11.6
Massachusetts—			
All wage earners	51.2	43.1	5.7
Spinners	30.4	60.9	8.8
Weavers	49.0	48.5	2.6
All other	56.5	36.8	6.7
New Hampshire—			
All wage earners	49.7	48.3	2.0
Spinners	48.2	44.6	7.2
Weavers	41.6	57.1	1.4
All other	52.4	46.3	1.4
North Carolina—			
All wage earners	51.1	30.0	18.9
Spinners	27.6	36.8	35.6
Weavers	58.1	36.7	5.2
All other	59.8	24.3	15.8
Rhode Island—			
All wage earners	50.7	43.3	6.0
Spinners	40.8	49.6	9.6
Weavers	53.7	44.7	1.6
All other	51.4	41.0	7.6
South Carolina—			
All wage earners	56.6	24.7	18.7
Spinners	25.9	33.9	40.2
Weavers	68.6	25.0	6.3
All other	67.9	19.0	13.1

Of the total number of spinners in 1909, 44.6 per cent were women 16 years of age and over, and 25.1 per cent were children under 16 years of age, the corresponding percentages for 1904 being 42.6 and 31.6. Among the weavers in 1909, 44.7 per cent were women and 3.2 per cent were children under 16 years of age, the proportion of women being somewhat lower and that of children somewhat higher than in 1904. The Southern states for which separate figures are presented show relatively high percentages of children for each of the three classes of wage earners for which figures are given in the table, as well as for the total number. In South Carolina, for example, 40.2 per cent of the spinners in 1909 were children under 16 years of age, as compared with 7.2 per cent in New Hampshire, and 6.3 per cent of the weavers, as compared with 1.4 per cent in New Hampshire.

Wage earners employed, by months.—Table 9 gives the number of wage earners employed on the 15th (or the nearest representative day) of each month during the year 1909 for each state in which an average of 500 or more wage earners were employed during the year, for which figures can be shown without disclosing individual operations.

The largest number of wage earners employed during any month of 1909 was 383,529, in December, and the smallest number, 374,433, in January, the minimum number being equal to 97.6 per cent of the maximum. The gradual increase in the number from May to December may probably be ascribed to the better industrial conditions existing at the close of the year. The industry, while not subject to material seasonal variations, is usually more active during the winter months than in the summer. In 1904 the maximum number of wage earners, 330,057, was reported for January, and the minimum number, 284,744, for August, the latter number being equal to 86.3 per cent of the former.

Table 9

STATE.	WAGE EARNERS EMPLOYED IN THE INDUSTRY—BOTH BRANCHES COMBINED: 1909[1]												
	Average number during the year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
United States	**378,880**	**374,433**	**376,348**	**377,962**	**377,521**	**377,487**	**377,862**	**378,700**	**378,920**	**380,363**	**381,225**	**382,232**	**383,529**
Alabama	12,731	12,692	12,574	12,550	12,628	*12,539*	12,751	12,685	12,979	12,641	12,847	12,826	13,061
Connecticut	14,360	14,324	14,510	14,259	14,418	14,263	14,282	*14,199*	14,277	14,367	14,388	14,483	14,556
Georgia	27,803	28,148	28,167	27,840	27,770	27,275	27,812	*26,990*	27,842	27,732	27,837	28,218	28,001
Illinois	1,319	*1,212*	1,237	1,260	1,274	1,256	1,339	1,303	1,326	1,366	1,376	1,418	1,454
Indiana	1,582	1,635	1,636	1,614	1,578	1,591	1,617	1,613	1,577	1,546	1,537	1,522	*1,518*
Kentucky	1,044	1,027	1,026	1,051	1,042	1,056	1,069	1,036	*976*	1,064	1,064	1,043	1,058
Maine	14,634	*14,474*	14,506	14,603	14,595	14,721	14,721	14,653	**14,922**	14,626	14,714	14,501	14,576
Maryland	3,966	4,061	4,011	3,977	3,687	*3,658*	3,798	3,935	4,082	4,090	4,091	4,110	4,095
Massachusetts	108,914	*106,670*	107,243	108,629	108,631	108,879	108,518	109,181	108,938	110,230	109,612	109,654	**110,781**
Mississippi	2,645	2,631	2,708	2,792	2,701	2,665	2,672	2,689	2,666	2,582	2,551	2,578	*2,506*
New Hampshire	22,290	22,075	22,197	22,241	22,415	22,437	22,335	22,334	22,408	22,390	22,466	22,242	*21,941*
New Jersey	6,638	6,597	6,608	6,653	6,634	6,592	6,517	*6,500*	6,570	6,638	6,699	6,826	6,816
New York	10,663	10,671	10,881	10,729	10,543	10,638	10,577	10,658	10,568	10,684	*10,502*	10,845	10,671
North Carolina	47,231	*46,134*	46,531	46,649	46,835	46,625	46,414	47,221	47,137	47,385	48,291	48,466	**49,034**
Pennsylvania	16,293	15,951	*15,817*	16,116	16,186	16,336	16,416	16,240	16,176	16,375	16,485	16,709	**16,709**
Rhode Island	28,786	28,807	28,738	28,896	28,806	28,818	28,632	28,611	*28,342*	28,722	28,796	29,080	**29,192**
South Carolina	45,454	*44,609*	45,195	45,346	45,144	45,409	45,773	46,300	45,644	45,687	45,673	45,387	45,226
Tennessee	3,078	3,083	3,070	3,057	3,058	3,120	3,046	3,078	3,106	*3,042*	3,053	3,114	3,111
Texas	1,590	**1,636**	1,624	1,621	1,602	1,620	1,606	1,590	1,611	1,551	1,565	*1,516*	1,544
Vermont	683	675	651	648	650	660	660	*649*	692	701	726	730	**753**
Virginia	5,057	5,116	**5,240**	5,190	5,113	5,066	5,071	5,006	5,012	*4,901*	4,930	5,064	4,973

[1] The month of maximum employment for each state is indicated by boldface figures and that of minimum employment by italic figures.

Table 9 shows further that in the two foremost states, Massachusetts and North Carolina, the greatest activity occurred during December, while for South Carolina, the third state in respect to number of wage earners, the largest number was reported for July. In most of the states for which figures can be presented, however, there was no considerable variation in the number employed during the year. The months of maximum and minimum employment for 1909 and the number of wage earners reported for these months are given for 21 states in Table 46.

Prevailing hours of labor.—In Table 10 the wage earners in the cotton manufacturing industry have been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. In making this classification the average number of wage earners employed during the year in each establishment was classified as a total according to the hours prevailing in that establishment, even though a few employees worked a greater or smaller number of hours.

Table 10 — AVERAGE NUMBER OF WAGE EARNERS IN THE INDUSTRY—BOTH BRANCHES COMBINED: 1909

STATE.	Total.	In establishments with prevailing hours— 48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.
United States	378,880	304	2,879	571	190,998	119,226	64,687	215
Alabama	12,731	.....	36	.....	477	7,320	4,814	84
Connecticut	14,360	.....	33	.....	13,448	879	.....	.....
Georgia	27,803	304	105	.....	519	10,868	15,913	94
Illinois	1,319	.....	887	.....	96	336	.....	.....
Indiana	1,582	.....	.....	.....	38	1,544	.....	.....
Kentucky	1,044	.....	.....	.....	.....	858	186	.....
Maine	14,634	.....	.....	.....	1,118	13,516	.....	.....
Maryland	3,966	.....	.....	.....	.....	3,966	.....	.....
Massachusetts	108,914	.....	11	41	108,766	38	58	.....
Mississippi	2,645	.....	.....	.....	118	1,434	1,093	.....
New Hampshire	22,290	.....	.....	.....	22,290	.....	.....	.....
New Jersey	6,638	.....	3	.....	5,537	1,098	.....	.....
New York	10,663	.....	247	17	1,277	9,122	.....	.....
North Carolina	47,231	.....	.....	.....	52	7,499	39,680	.....
Pennsylvania	16,293	.....	1,112	.....	8,294	6,887	.....	.....
Rhode Island	28,786	.....	.....	34	28,658	94	.....	.....
South Carolina	45,454	.....	445	.....	.....	45,009	.....	.....
Tennessee	3,078	.....	.....	65	.....	1,333	1,643	37
Texas	1,590	.....	.....	.....	.....	397	1,193	.....
Vermont	683	.....	.....	21	.....	662	.....	.....
Virginia	5,057	.....	.....	.....	.....	5,057	.....	.....

Practically one-half (50.4 per cent) of the wage earners employed in the cotton manufacturing industry in 1909 were in establishments where the prevailing hours were between 54 and 60 per week, and nearly one-third (31.5 per cent) were employed in establishments where the hours were 60 per week, these two classes of establishments giving employment to 81.9 per cent of the total number of wage earners in the industry. Only 1 per cent of the total were employed in establishments where the usual hours were 54 or less per week, and 17.1 per cent in establishments where more than 60 hours per week were required, practically all of these latter being in Southern states. All of the wage earners in New Hampshire and nearly all of those in Massachusetts, Rhode Island, and Connecticut were in establishments where the prevailing hours were more than 54 but less than 60 per week, 90.7 per cent of the total number of wage earners in this group being reported from these four states. On the other hand, 84 per cent of the 47,231 wage earners in North Carolina and 57.2 per cent of the 27,803 wage earners in Georgia were employed in establishments where the prevailing hours of labor per week were more than 60 but less than 72, while 99 per cent of the wage earners in South Carolina were in establishments operating on a 60-hour basis.

CHARACTER OF OWNERSHIP.

Table 11 presents statistics with respect to the character of ownership of the establishments in the cotton manufacturing industry.

Table 11 — COTTON GOODS, INCLUDING COTTON SMALL WARES.

CHARACTER OF OWNERSHIP.	Number of establishments. 1909	Number of establishments. 1904	Value of products. 1909	Value of products. 1904
Total	1,324	1,154	$628,391,813	$450,467,704
Individual	110	114	11,489,389	11,834,068
Firm	101	[1] 118	18,132,188	20,706,429
Corporation	1,113	922	598,770,236	417,926,307
Per cent of total	100.0	100.0	100.0	100.0
Individual	8.3	9.9	1.8	2.6
Firm	7.6	10.2	2.9	4.6
Corporation	84.1	79.9	95.3	92.8

[1] Includes one establishment under "other" ownership, to avoid disclosure of individual operations.

Of the total number of mills reported for the industry in 1909, 84.1 per cent were under corporate ownership, as compared with 79.9 per cent in 1904; of the total value of products the corporate establishments contributed 95.3 per cent in 1909 and 92.8 per cent in 1904. These figures indicate a slight gain during the five-year period in the relative importance, as measured by value of products, of establishments under corporate ownership.

Of the total number of wage earners reported for the cotton manufacturing industry in 1909, 5,366, or 1.4 per cent, were employed in establishments under individual ownership; 11,250, or 3 per cent, in those under firm ownership; and 362,264, or 95.6 per cent, in those owned by corporations.

Table 12 gives statistics for establishments classified according to form of ownership for each state in which an average of more than 500 wage earners were employed in 1909 for which figures can be shown without disclosing individual operations.

Table 12

STATE.	COTTON GOODS, INCLUDING COTTON SMALL WARES: 1909											
	Number of establishments owned by—			Wage earners in establishments owned by—			Value of products of establishments owned by—			Value added by manufacture in establishments owned by—		
	Individuals.	Firms.	Corporations.	Individuals.	Firms.	Corporations.	Individuals.	Firms.	Corporations.	Individuals.	Firms.	Corporations.
United States	110	101	1,113	5,366	11,250	362,264	$11,489,389	$18,132,188	$598,770,236	$4,811,009	$7,519,105	$245,052,229
Alabama			51			12,731			22,211,748			7,838,501
Connecticut	7	7	38	457	367	13,536	1,215,338	487,231	22,529,312	436,251	195,691	11,640,217
Georgia	6	2	108	*884*	(X)	26,919	*1,863,989*	(X)	46,172,878	*581,863*	(X)	15,406,215
Illinois			5			1,319			2,111,208			1,009,194
Indiana			7			1,582			2,501,598			831,601
Kentucky	1		3	(X)		*1,044*	(X)		*1,902,467*	(X)		*714,532*
Maine			16			14,634			21,932,225			10,541,746
Maryland		1	15		(X)	*3,966*		(X)	*5,522,893*		(X)	*1,510,553*
Massachusetts	12	13	157	643	1,593	106,678	1,181,169	2,321,164	182,959,980	380,666	1,012,783	79,912,070
Mississippi			14			2,645			3,102,398			1,060,248
New Hampshire	1	1	19	(X)	(X)	*22,290*	(X)	(X)	*33,601,850*	(X)	(X)	*14,477,980*
New Jersey	5	4	17	78	288	6,272	117,072	403,415	13,208,387	62,023	128,416	4,973,702
New York	8	6	33	110	309	10,244	579,535	790,762	18,981,258	236,676	408,243	7,980,147
North Carolina	9	10	262	648	943	45,640	924,409	1,354,931	70,401,045	354,830	485,928	23,152,055
Pennsylvania	48	43	84	2,424	3,540	10,329	5,355,654	6,602,563	21,958,816	2,009,366	2,672,054	9,878,588
Rhode Island	8	12	86	62	3,604	25,120	163,448	5,092,593	45,056,556	61,592	2,343,253	22,506,513
South Carolina	3		144	94		45,360	195,618		65,733,967	49,859		24,576,288
Tennessee	1	1	15	(X)	(X)	*3,078*	(X)	(X)	*5,200,791*	(X)	(X)	*1,857,119*
Texas			13			1,590			2,814,581			1,021,285
Virginia			10			5,057			7,480,653			2,700,630

NOTE.—In some states, in order to avoid disclosing the returns for individual establishments, the figures for one group have been consolidated with those for establishments under some other form of ownership. In such cases an (X) is placed in the column from which the figures have been omitted and the figures for the group with which they have been combined are printed in italics.

The corporate form of ownership was the only form reported in seven of the states listed and was the prevailing form in all of them. Pennsylvania was the only state in which establishments under individual and firm ownership formed any considerable proportion of the total. In that state, however, these two groups constituted 27.4 per cent and 24.6 per cent, respectively, of the total number of establishments, employed 14.9 per cent and 21.7 per cent, respectively, of the total number of wage earners, and contributed 15.8 per cent and 19.5 per cent, respectively, of the total value of products.

SIZE OF ESTABLISHMENTS.

Classification by value of products.—Table 13 presents statistics for 1909 and 1904 for establishments grouped according to the value of their products.

Table 13

VALUE OF PRODUCTS PER ESTABLISHMENT.	COTTON GOODS, INCLUDING COTTON SMALL WARES.			
	Number of establishments.		Value of products.	
	1909	1904	1909	1904
Total	1,324	1,154	$628,391,813	$450,487,704
Less than $5,000	17	26	41,056	67,549
$5,000 and less than $20,000	66	47	840,504	595,356
$20,000 and less than $100,000	280	273	17,137,769	15,698,309
$100,000 and less than $1,000,000	798	709	278,026,841	236,222,358
$1,000,000 and over	163	99	332,345,643	197,884,132
Per cent of total	100.0	100.0	100.0	100.0
Less than $5,000	1.3	2.3	(1)	(1)
$5,000 and less than $20,000	5.0	4.1	0.1	0.1
$20,000 and less than $100,000	21.1	23.7	2.7	3.5
$100,000 and less than $1,000,000	60.3	61.4	44.2	52.4
$1,000,000 and over	12.3	8.6	52.9	43.9

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

Of the 1,324 establishments reported for 1909, 163, or 12.3 per cent, manufactured products valued at $1,000,000 or over. In 1904 there were 99 establishments of this class out of a total of 1,154, or 8.6 per cent. While such establishments represented a comparatively small proportion of the total number at both censuses, they reported 52.9 per cent of the total value of products in 1909 and 43.9 per cent in 1904. In 1909 there were included in this group 5 establishments with products valued at $5,000,000 or over, the aggregate value of their products exceeding $37,000,000.

In considering the increase between 1904 and 1909 in the proportion of the business controlled by large establishments, it should be borne in mind that in consequence of the marked increase which has taken place in the prices of commodities during this five-year period, establishments might pass from the next lower class into the class comprising establishments having products valued at $1,000,000 or over without a corresponding increase in the volume of their output.

The small establishments—that is, those manufacturing products valued at less than $20,000—constituted a very small proportion of the total number at both censuses, and the value of their products formed only one-tenth of 1 per cent of the total. The establishments with products between $100,000 and $1,000,000 in value constituted 60.3 per cent of the total number in 1909 and contributed 44.2 per cent of the total value of products; in 1904, however, they were the most important class as measured by value of products, reporting 52.4 per cent of the total.

The average value of products per establishment increased from $390,353 in 1904 to $474,616 in 1909, and the average value added by manufacture, as computed from the figures in Table 2, from $142,298

to $194,398, these increases being probably due in part to advances in the prices of products. The average number of wage earners, however, likewise increased, from 274 in 1904 to 286 in 1909.

Classification by number of wage earners.—Table 14 classifies the establishments in the cotton manufacturing industry in 21 of the leading states according to the number of wage earners employed.

Table 14 — COTTON GOODS, INCLUDING COTTON SMALL WARES: 1909

STATE.	Total.		Establishments employing— No wage earners.			1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
	Establishments.	Wage earners (average number)	Establishments.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.
United States.	**1,324**	**378,880**	**3**	**37**	**116**	**102**	**1,302**	**181**	**6,534**	**224**	**16,317**	**360**	**58,942**	**213**	**76,793**	**127**	**88,745**	**77**	**130,131**
Alabama	51	12,731						7	292	11	776	20	3,430	7	2,599	4	3,467	2	2,158
Connecticut	52	14,360	1	1	2	2	24	9	287	4	340	15	2,565	12	4,040	5	2,605	3	4,497
Georgia	116	27,803				4	62	7	270	30	2,343	39	6,164	22	7,670	11	7,249	3	4,045
Illinois	5	1,319						2	96					2	600	1	623		
Indiana	7	1,582						2	86			2	459	3	1,037				
Kentucky	4	1,044						1	48			1	138	1	280	1	578		
Maine	16	14,634						2	81	1	55	2	395	2	790	3	2,309	6	11,004
Maryland	16	3,966				3	38	2	89	1	79	5	803	3	1,062	1	759	1	1,136
Massachusetts	182	108,914		8	25	11	134	14	488	20	1,431	21	3,519	29	11,184	40	29,019	39	63,114
Mississippi	14	2,645				1	9			3	218	7	1,227	3	1,191				
New Hampshire	21	22,290		1	1	1	9	2	55			5	792	3	1,172	4	3,550	5	16,711
New Jersey	26	6,638		3	10	7	81	2	89	3	249	4	692	4	1,520	2	1,501	1	2,496
New York	47	10,663	1	2	7	9	109	8	269	8	621	9	1,232	5	1,695	2	1,135	3	5,595
North Carolina	281	47,231		1	4	12	156	46	1,050	71	5,231	97	14,818	41	14,506	10	6,385	3	4,421
Pennsylvania	175	16,293	1	15	51	35	457	48	1,758	26	1,717	36	5,777	11	3,012	2	1,464	1	1,157
Rhode Island	106	28,786		4	10	10	130	15	502	15	1,080	20	3,481	25	8,895	12	7,711	5	6,977
South Carolina	147	45,454		1	4	4	47	6	202	13	906	60	10,738	35	12,639	25	17,281	3	3,637
Tennessee	17	3,078						4	146	6	404	4	650	1	299	2	1,579		
Texas	13	1,590				1	20			6	507	6	1,063						
Vermont	3	683				1	20					1	236	1	427				
Virginia	10	5,057						1	27	2	117	3	371	1	450	1	909	2	3,183

Of the 1,324 establishments reported for 1909, 3 employed no wage earners, 37, or 2.8 per cent, employed from 1 to 5, 21.4 per cent employed from 6 to 50, and 16.9 per cent from 51 to 100. The largest single class consisted of 360 mills employing from 101 to 250 wage earners, though 204 mills gave employment to over 500 wage earners each. Of the total number of wage earners reported, 2.1 per cent were in establishments employing from 1 to 50 wage earners, 4.3 per cent in establishments employing from 51 to 100, 15.6 per cent in establishments employing from 101 to 250, 20.3 per cent in establishments employing from 251 to 500, 23.4 per cent in establishments employing from 501 to 1,000, and 34.3 per cent in establishments employing over 1,000. Establishments employing 1,000 wage earners or more were relatively more important in Maine, New Hampshire, Virginia, Massachusetts, and New York than in any of the other states, more than half of the wage earners in each of these five states being employed in establishments of this class.

EXPENSES.

As stated in the Introduction, the census figures representing expenses do not purport to show the total cost of manufacture, since they take no account of interest or depreciation; hence they can not properly be used for determining profits. Facts of interest can be brought out, however, concerning the relative importance of the different classes of expenses which were reported. Table 2 shows the total expenses reported for the industry in 1909 to have been $554,221,688, distributed as follows: Cost of materials, $371,009,470, or 66.9 per cent; wages, $132,859,145, or 24 per cent; salaries, $14,411,758, or 2.6 per cent; and miscellaneous expenses, made up of advertising, ordinary repairs of buildings and machinery, insurance, traveling expenses, and other sundry expenses, $35,941,315, or 6.5 per cent. In establishments making cotton goods, the proportions were: Cost of materials, 67.2 per cent; wages, 23.9 per cent; salaries, 2.5 per cent; and miscellaneous expenses, 6.4 per cent. In the cotton small wares branch of the industry, the corresponding percentages were 59.4, 26.1, 5.9, and 8.6, respectively.

Table 15 shows in percentages, by states, the distribution of the total expenses reported for the cotton manufacturing industry as a whole in 1909.

There are considerable variations in the proportions represented by the different classes of expenses in the several states, but the cost of materials constituted over three-fifths of the total in all the 21 states shown in the table except Illinois, while the proportion for wages ranged from 15.5 per cent in Ohio to 30.2 per cent in Maine. In all of the Southern states, together with Ohio, Indiana, New Jersey, New York, and Pennsylvania, the percentage represented by wages was lower than the average for the United

States as a whole (24 per cent), while in Maine, New Hampshire, Rhode Island, Connecticut, Illinois, and Massachusetts it was higher. States showing a high percentage for wages almost uniformly show a low percentage for materials, as is natural, since wages and cost of materials together make up by far the larger part of the total expenses reported. The differences in the proportions in the different states are attributable in part to differences in wage scales and in part to differences in the fineness and the degree of elaboration of the products, the manufacture of fine or highly elaborated products requiring more labor in proportion to the quantity of materials and more highly skilled labor than the manufacture of a lower grade of products.

Table 15

STATE.	COTTON GOODS, INCLUDING COTTON SMALL WARES—PER CENT OF TOTAL EXPENSES REPORTED.			
	Salaries.	Wages.	Materials.	Miscellaneous expenses.
United States	2.6	24.0	66.9	6.5
Alabama	2.3	17.4	72.5	7.8
Connecticut	3.9	28.5	60.1	7.6
Georgia	2.3	17.7	73.5	6.5
Illinois	5.5	27.5	58.1	8.9
Indiana	4.3	19.7	68.9	7.1
Kentucky	2.2	18.6	71.7	7.6
Maine	1.9	30.2	60.2	7.7
Maryland	2.8	20.6	72.7	3.9
Massachusetts	2.1	27.4	63.9	6.7
Mississippi	3.6	23.6	69.2	3.6
New Hampshire	1.4	29.6	63.4	5.6
New Jersey	3.2	20.8	69.2	6.8
New York	3.2	22.7	64.0	10.1
North Carolina	2.5	18.5	74.1	4.9
Ohio	7.1	15.5	69.2	8.1
Pennsylvania	5.4	23.5	62.7	8.4
Rhode Island	3.3	29.1	62.6	5.1
South Carolina	2.5	20.2	71.7	5.5
Tennessee	2.2	17.8	69.4	10.6
Texas	2.4	20.0	71.6	6.0
Virginia	1.9	21.5	68.3	8.3
All other states	3.7	23.6	67.9	4.8

ENGINES, POWER, AND FUEL.

Engines and power.—The amount of power used in the cotton manufacturing industry was first reported at the census of 1869. Table 2 shows that the total primary power used in the industry as a whole increased from 146,040 horsepower in 1869 to 1,296,517 in 1909. Table 16 shows statistics of power as reported at the censuses of 1909, 1904, and 1899.

The total primary power increased from 795,834 horsepower in 1899 to 1,296,517 horsepower in 1909, or 62.9 per cent. In 1909, as in 1904 and 1899, the power of steam engines constituted more than two-thirds of the total primary power, the percentage in 1909 (67.1), though somewhat less than that in 1904, being slightly greater than in 1899. Water power, which in 1899 formed nearly one-third (31.6 per cent) of the total primary power, constituted in 1909 only 23.4 per cent of the total. There was a marked increase, on the other hand, in the relative importance of power generated by electric motors operated by purchased current (rented electric power), which increased from 2,081 horsepower in 1899 to 108,512 horsepower in 1909, or from three-tenths of 1 per cent of the total primary power used in the industry to 8.4 per cent. These changes are partly attributable to the marked growth of this industry in the Southern states, where the use of rented electric power has increased most conspicuously—much of the current being generated at a low cost by water power.

Table 16

POWER.	COTTON GOODS, INCLUDING COTTON SMALL WARES.								
	Number of engines or motors.			Horsepower.			Per cent distribution of horsepower.		
	1909	1904	1899	1909	1904	1899	1909	1904	1899
Primary power, total	6,157	3,636	3,152	1,296,517	986,604	795,834	100.0	100.0	100.0
Owned	3,487	3,307	3,152	1,183,037	963,042	783,792	91.2	97.6	98.5
Steam	2,087	2,052	1,803	869,838	707,607	531,611	67.1	71.7	66.8
Gas	39	21	14	2,812	1,786	321	0.2	0.2	(1)
Water wheels	1,352	1,234	1,335	302,288	252,923	251,850	23.3	25.6	31.6
Water motors	9	.....	(2)	736	.....	(2)	0.1	.....	.....
Other	.....	.....	.....	7,363	726	10	0.6	0.1	(1)
Rented	2,670	329	(2)	113,480	23,562	12,042	8.8	2.4	1.5
Electric	2,670	329	(2)	108,512	14,095	2,081	8.4	1.4	0.3
Other	.....	.....	.....	4,968	9,467	9,961	0.4	1.0	1.3
Electric motors	6,559	1,117	280	235,902	67,139	17,594	100.0	100.0	100.0
Run by current generated by establishment	3,889	788	280	127,390	53,044	15,513	54.0	79.0	88.2
Run by rented power	2,670	329	(2)	108,512	14,095	2,081	46.0	21.0	11.8

[1] Less than one-tenth of 1 per cent. [2] Not reported.

The number and horsepower of electric motors used for distributing power by means of current generated in the establishments in the industry also show a very large increase, the horsepower of such motors increasing from 15,513 in 1899 to 127,390 in 1909.

Table 17 shows for 1909 the amount of the several kinds of power and of the different kinds of fuel used in 21 of the leading states.

The states which ranked highest with respect to the amount of power used were Massachusetts, South Carolina, North Carolina, Rhode Island, and Georgia. The total horsepower reported for these states in 1909 was 902,625, or 69.6 per cent of the total for the entire industry in the United States. Steam was the most important form of primary power in all the states shown separately except Maine and Virginia, in which states water power was used to a greater extent than any other form of power. The largest amounts of steam power (292,124 horsepower), of water power (60,510 horsepower), and of power generated by gas and other internal-combustion engines (1,736 horsepower), were reported for the state of Massachusetts. The largest amount of rented electric power, 43,239 horsepower, or nearly two-fifths of the total for the United States, was reported for North Carolina, with South Carolina following closely. In North Carolina over one-fourth of the total primary power was rented electric power and in South Carolina nearly one-fifth.

Table 17 — COTTON GOODS, INCLUDING COTTON SMALL WARES: 1909

STATE.	Number of establishments reporting.	Total horsepower.	Primary horsepower. Owned by establishments reporting. Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Rented. Electric.	Other.	Electric horsepower. Total, rented and generated by establishment.	Generated in the establishment reporting.	Fuel used. Coal. Anthracite (long tons).	Bituminous (short tons).	Coke (short tons).	Wood (cords).	Oil, including gasoline, (barrels).	Gas (1,000 feet).
United States.	1,324	1,296,517	1,183,037	869,838	2,812	303,024	7,363	108,512	4,968	235,902	127,390	415,604	3,327,802	20,605	130,572	38,792	278,256
Alabama	51	42,637	42,637	31,775	.....	10,712	150	.....	.....	3,917	3,917	.....	190,686	.....	3,812	40	.....
Connecticut	52	58,137	57,975	31,628	36	26,311	.....	162	.....	3,882	3,720	26,603	83,617	.....	5,100	77	36
Georgia	116	92,979	84,967	63,023	.....	21,748	196	6,812	1,200	13,992	7,180	6	356,218	2,500	19,033	587	.....
Illinois	5	2,020	1,975	1,975	.....	.....	.....	45	.....	504	459	.....	13,171	.....	.....	.....	210,360
Indiana	7	5,315	5,315	5,315	.....	.....	.....	.....	.....	20	20	.....	43,828	.....	.....	.....	.....
Kentucky	4	3,159	3,159	3,000	.....	159	.....	.....	.....	.....	.....	.....	21,386	.....	.....	.....	.....
Maine	16	53,823	51,528	20,585	.....	30,943	.....	2,295	.....	10,070	7,775	796	61,531	.....	576	903	.....
Maryland	16	13,128	13,043	10,060	.....	2,983	.....	10	75	38	28	100	31,998	.....	78	.....	.....
Massachusetts	182	362,043	354,437	292,124	1,736	60,510	67	7,377	229	47,441	40,064	166,788	918,635	924	530	4,823	31,855
Mississippi	14	8,045	8,045	8,045	.....	.....	.....	.....	.....	421	421	.....	31,103	.....	9,990	.....	.....
New Hampshire	21	83,966	79,650	46,704	.....	32,946	.....	4,011	305	14,119	10,108	50	186,279	7,395	120	1,700	18,864
New Jersey	26	17,288	17,249	16,004	30	615	.....	29	10	1,197	1,168	48,596	29,905	.....	.....	1	1,365
New York	47	33,354	30,051	18,505	152	9,654	1,740	3,269	34	6,664	3,395	30,624	85,025	.....	13	43	3,953
North Carolina	281	164,609	120,907	90,521	115	29,411	860	43,239	463	54,066	10,827	6,075	420,455	9,759	66,640	320	5,500
Pennsylvania	175	24,589	21,707	21,143	74	490	.....	495	2,387	2,455	1,960	64,645	71,658	.....	.....	82	4,080
Rhode Island	106	95,278	92,314	70,001	146	22,167	.....	2,699	265	10,418	7,719	47,239	220,965	27	478	770	555
South Carolina	147	187,716	151,352	111,807	506	36,629	2,350	30,364	.....	58,460	22,096	7,270	428,523	.....	21,282	276	.....
Tennessee	17	11,129	9,672	9,487	5	180	.....	1,457	.....	1,809	352	831	46,599	.....	2,258	9	.....
Texas	13	4,835	4,050	4,050	.....	.....	.....	185	.....	262	77	.....	28,540	.....	.....	15,981	.....
Vermont	3	4,026	4,026	2,951	.....	1,075	.....	.....	.....	42	42	140	9,833	.....	.....	107	.....
Virginia	10	19,750	19,750	3,650	.....	16,100	.....	.....	.....	4,510	4,510	5,560	21,448	.....	.....	.....	.....
All other states	15	8,691	8,628	6,225	12	391	2,000	63	.....	1,615	1,552	1,281	26,399	.....	653	13,067	1,688

Fuel consumed.—Although a large proportion of the power used in this industry is either water power or rented electric power, the amount of fuel consumed is very large. Bituminous coal is the principal class of fuel used, 3,327,802 short tons being consumed in 1909. Massachusetts reported the largest quantity, 918,635 tons, or over one-fourth of the entire amount used in the industry. This state also reported the largest quantity of anthracite coal—166,788 long tons, or practically two-fifths of the total for the United States. Only three states, North Carolina, New Hampshire, and Georgia, used coke to any extent, the state first named using nearly one-half of that reported for the entire United States. The largest amount of oil (15,981 barrels) was reported for Texas, and the largest quantity of gas (210,360,000 cubic feet), for Illinois.

SPECIAL STATISTICS RELATING TO MATERIALS, PRODUCTS, EQUIPMENT, ETC.

MATERIALS.

Summary for the United States.—Table 18 gives statistics of the chief materials used in the industry as a whole for 1909, 1904, and 1899.

Table 18 — COTTON GOODS, INCLUDING COTTON SMALL WARES.

MATERIAL.	1909	1904	1899
Total cost	$371,009,470	$286,255,303	$176,551,527
Cotton:			
Pounds	2,335,344,906	1,876,437,150	1,817,643,390
Cost	$274,724,210	$222,212,749	$125,169,616
Domestic—			
Pounds	2,259,312,974	1,832,736,744	1,761,798,458
Cost	$261,547,820	$214,615,844	$119,098,443
Foreign—			
Pounds	76,031,932	43,700,406	55,844,932
Cost	$13,176,390	$7,596,905	$6,071,173
Cotton yarn:			
Pounds	126,707,003	105,411,516	94,692,864
Cost	$34,384,791	$24,611,200	$17,622,568
Cotton waste:			
Pounds	80,044,061	76,678,645	41,234,900
Cost	$4,225,790	$3,814,290	$1,515,591
Starch:			
Pounds	71,774,574	54,489,534	53,800,734
Cost	$2,114,756	$1,506,804	$1,227,010
Chemicals and dyestuffs	$4,886,514	$4,573,375	$5,718,107
All other materials	$50,673,409	$29,536,885	$25,208,635

The total cost of materials as reported for 1909, which, however, includes a considerable amount of duplication, was $371,009,470, an increase of $84,754,167, or 29.6 per cent, over 1904, and of $194,457,943, or 110.1 per cent, over 1899. Raw cotton is by far the most important material, the next in importance being cotton yarn, most of which is purchased from other mills in the industry, and is thus an important element in the duplication of value of products. The amount of cotton used by establishments in this industry increased from 1,817,643,390 pounds in 1899 to 2,335,344,906 pounds in 1909, or 28.5 per cent, and its cost from $125,169,616 to $274,724,210, or 119.5 per cent. The domestic cotton consumed increased 28.2 per cent in quantity and 119.6 per cent in value from 1899 to 1909, while foreign cotton increased 36.1 per cent in quantity and 117 per cent in value during the same period. Foreign cotton constituted 3.3 per cent of the total quantity in 1909 and 3.1 per cent in 1899.

A large amount of cotton is consumed in industries other than that designated "cotton goods, including cotton small wares." The total consumption of cotton by all manufacturing industries in the United States

for the year ending August 31, 1909, was, according to the annual report of the Census Bureau on the supply and distribution of cotton, 5,198,963 equivalent 500-pound bales, comprising 5,037,225 bales of domestic cotton, round bales being counted as half bales, and 161,738 bales of foreign cotton. The consumption reported by the cotton manufacturing industry (comprising cotton goods and cotton small wares) for the calendar year 1909 was equal to 92.9 per cent of the total consumption of domestic cotton above mentioned and to 94 per cent of the total consumption of the foreign cotton. The foreign cotton consumed is chiefly Egyptian, which is used largely in the manufacture of thread, knit goods, and machine lace, although some Peruvian cotton is used as a substitute for wool in the manufacture of woolen goods, and also some Chinese and Indian cotton.

Materials used, by states.—Table 19 gives, by states, the consumption of materials for the years 1909, 1904, and 1899, with the cost for 1909.

Table 19

MATERIAL AND STATE.	COTTON GOODS, INCLUDING COTTON SMALL WARES. Cost: 1909	Quantity (pounds). 1909	1904	1899
Raw cotton	$274,724,210	2,335,344,906	1,876,437,150	1,817,643,390
Domestic	261,547,820	2,259,312,974	1,832,736,744	1,761,798,458
Alabama	12,598,961	116,143,543	98,616,393	67,987,299
Connecticut	6,425,319	51,664,951	49,775,004	50,910,381
Georgia	27,684,309	249,741,617	197,240,356	145,608,115
Maine	9,384,474	78,302,022	67,023,278	79,212,256
Maryland	3,230,428	27,460,792	27,054,032	39,901,955
Massachusetts	70,495,332	578,315,382	467,110,958	525,601,880
Mississippi	1,797,222	16,371,192	13,007,625	10,363,458
New Hampshire	14,751,838	136,801,463	134,425,428	136,805,127
New Jersey	1,676,359	11,820,556	12,930,555	11,396,139
New York	8,020,811	68,314,158	50,653,472	51,124,370
North Carolina	40,605,341	348,979,258	240,937,988	190,138,759
Pennsylvania	2,540,885	23,607,952	24,810,154	35,083,214
Rhode Island	13,138,735	101,896,174	89,422,995	92,900,390
South Carolina	35,284,141	322,945,571	269,045,002	229,899,760
Tennessee	2,941,046	28,312,077	19,292,275	15,028,584
Texas	1,597,058	15,893,288	9,206,589	9,304,434
Virginia	4,322,388	37,160,966	23,018,074	17,832,465
All other states	5,053,173	45,582,012	39,166,566	52,609,872
Foreign	13,176,390	76,031,932	43,700,406	55,844,932
Connecticut	1,058,728	6,058,409	3,503,478	5,955,428
Massachusetts	7,242,983	44,052,645	22,878,627	35,292,324
New Hampshire	248,897	1,731,164	384,150	183,520
New Jersey	1,437,087	6,579,971	3,388,812	3,891,729
North Carolina	231,543	1,231,356	1,422,750	.....
Pennsylvania	336,765	2,080,645	1,063,566	1,466,319
Rhode Island	2,030,857	10,860,853	6,125,640	6,575,088
South Carolina	249,068	1,440,207	1,912,459	154,047
All other states	340,462	1,996,682	3,020,924	2,326,477
Dyed, bleached, and other treated cotton	21,591	191,779	(1)	(1)
Raw silk	987,177	257,102	(1)	(1)
Fibers, other than cotton and silk	189,272	1,370,087	(1)	(1)
Cotton yarn	34,384,791	126,707,003	105,411,516	94,692,864
Connecticut	1,430,813	3,671,011	3,958,978	[2] 4,868,512
Maine	305,638	1,266,512	1,515,472	1,417,213
Maryland	414,199	2,254,334	1,910,717	926,469
Massachusetts	8,279,665	27,175,076	18,048,019	16,537,776
New Hampshire	389,009	1,884,910	1,158,983	821,587
New Jersey	4,206,668	10,451,910	5,523,955	2,916,328
New York	1,472,313	5,843,677	5,583,162	4,297,684
North Carolina	1,789,555	9,738,724	10,656,597	10,284,488
Pennsylvania	10,852,298	46,787,905	41,262,481	39,937,206
Cotton yarn—Continued.				
Rhode Island	$4,051,301	13,263,003	13,033,803	7,031,251
All other states	1,193,332	4,369,941	2,759,349	5,654,350
Silk yarn	4,684,527	1,539,240	265,256	342,425
Massachusetts	2,854,181	872,303	129,206	142,249
Pennsylvania	331,372	96,241	66,350	92,061
Rhode Island	1,192,881	484,241	18,251	16,128
All other states	306,093	86,455	51,449	91,987
Spun silk yarn	1,560,822	522,766	147,333	218,255
Massachusetts	802,763	187,601	40,745	78,679
Pennsylvania	137,998	47,887	75,011	138,573
Rhode Island	85,947	32,082	6,967	.....
All other states	534,114	255,106	24,610	1,003
Yarns, other than cotton and silk	1,937,857	3,543,516	3,118,374	4,336,758
Cotton waste	4,225,790	80,044,061	76,678,645	41,234,900
Alabama	49,049	919,725	(3)	.....
Connecticut	149,267	2,224,582	1,049,150	[2] 2,067,674
Georgia	310,055	8,201,342	3,067,157	[2] 48,641
Maine	304,700	4,218,459	1,094,075	3,821,532
Maryland	50,917	952,245	916,992	.....
Massachusetts	1,100,785	20,024,977	15,185,313	22,366,384
New Hampshire	77,884	1,067,102	1,970,322	434,053
New York	245,848	2,617,141	2,056,638	124,628
North Carolina	335,595	6,041,351	1,399,977	777,101
Pennsylvania	80,421	1,310,239	2,140,344	2,266,614
Rhode Island	1,274,989	29,195,998	45,168,838	5,963,702
South Carolina	160,087	1,900,350	1,093,007	367,110
Tennessee	54,747	705,097	(3)	.....
All other states	31,446	605,453	996,958	2,964,461
Starch	2,114,756	71,774,574	54,489,534	53,800,734
Alabama	101,218	3,677,656	3,237,017	1,666,038
Connecticut	111,368	2,944,826	2,284,291	[2] 2,073,522
Georgia	167,828	6,083,644	5,169,567	[2] 3,413,851
Maine	93,783	3,327,490	3,008,652	3,026,423
Massachusetts	471,045	15,729,835	12,549,063	18,597,208
New Hampshire	205,768	7,293,256	3,374,958	4,719,505
New Jersey	33,040	1,091,083	649,681	1,396,068
New York	70,581	1,835,188	1,358,159	1,107,898
North Carolina	214,975	8,799,170	6,436,695	4,527,391
Pennsylvania	52,859	1,418,532	1,991,616	1,731,454
Rhode Island	116,401	3,584,542	2,778,192	2,487,648
South Carolina	359,679	11,655,200	8,334,606	6,038,638
Texas	19,516	712,422	437,750	356,000
Virginia	40,043	1,361,860	633,730	374,272
All other states	57,092	2,259,870	2,244,657	2,283,918

[1] Not reported.
[2] Consumption by cotton small wares branch of the industry included under "all other states."
[3] Included in totals, but amount not shown, to avoid disclosure of individual operations.

The comparative cost of cotton per pound in the different states is rather interesting. The average (domestic) for the whole country is about 11.6 cents. It is highest for New Jersey, owing to the character of its principal product—sewing thread—more than 14 cents. It is also higher in Massachusetts (12.9 cents) and Rhode Island (12.9 cents) because of the use of longer staple cotton in the manufacture of fine goods.

Foreign cotton constitutes but a very small proportion of the cotton consumed in the industry, and the use of such cotton is chiefly confined to a few states. In 1909 Massachusetts alone consumed 57.9 per cent of the total, and the New England states together, exclusive of Maine, about five-sixths of the total. In Massachusetts foreign cotton represented 7.1 per cent of all the cotton consumed, while in New Jersey, where the proportion was highest, it represented 35.8 per cent of the total.

In addition to raw cotton, the mills reported the consumption of small quantities of cotton which had been dyed, bleached, or otherwise treated by other establishments, and also of 257,102 pounds of raw silk and 1,370,087 pounds of other fibers—flax, wool, jute, ramie, mohair, etc.—more than four-fifths of this latter amount being flax.

Some cotton mills confine themselves to spinning, selling the yarn to other mills for weaving, while others do weaving only, or spin only part of the yarn they weave. The state of Pennsylvania is the largest user of purchased cotton yarn, reporting 36.9 per cent of the total quantity purchased by all mills in the industry in 1909, 39.1 per cent in 1904, and 42.2 per cent in 1899. Much of this yarn is of course made in other states. The cost of the purchased yarn used by the Pennsylvania mills in 1909 was nearly four times as great as that of the raw cotton used by them, while in no other state except New Jersey did the cost of yarn purchased equal that of raw cotton. Massachusetts, the second state in the use of this material, reported 27,175,076 pounds of purchased cotton yarn in 1909, or 21.4 per cent of the total. Rhode Island, New Jersey, and North Carolina were the states next in importance.

The consumption of silk yarn (organzine and tram) and spun silk yarn shows large gains, the total quantity of the two combined reported for 1909 being nearly four times the quantity used in the cotton manufacturing industry in 1899. Massachusetts reported more than half of the total quantity in 1909.

The mills in Rhode Island used 36.5 per cent of the entire amount of cotton waste reported for 1909 and 58.9 per cent of that reported for 1904, Massachusetts, Georgia, and North Carolina, in the order named, being the next largest users in 1909.

The cost of chemicals and dyestuffs, as reported at the census of 1909, was $4,886,514, as compared with $5,718,107 in 1899. The figures, however, do not cover the total cost of these materials, as in some cases their cost was not reported separately.

Consumption of cotton, by states.—Table 20 shows the consumption of foreign and domestic cotton in the industry designated "cotton goods, including cotton small wares" for the census years 1909, 1904, 1899, and 1889 (the reports of most establishments being for the calendar years). It shows also the total consumption of cotton in the two branches of the industry, in certain groups of states, and in the most important individual states.

Table 20 — COTTON CONSUMPTION IN COTTON MANUFACTURES AS A WHOLE.

	1909		1904		1899		1889	
	Bales.	Pounds.	Bales.	Pounds.	Bales.	Pounds.	Bales.	Pounds.
Total	**4,828,736**	**2,335,344,906**	**3,749,765**	**1,876,437,150**	**3,646,708**	**1,817,643,390**	**2,261,600**	**1,117,945,776**
Domestic	4,717,343	2,259,312,974	3,690,145	1,832,736,744	3,570,500	1,761,798,458	2,252,668	1,111,384,825
Other than sea island	[1] 4,649,594	[1] 2,233,038,701	3,635,761	1,810,874,712	3,523,293	1,743,355,824	2,231,385	1,103,492,910
Sea island	[1] 67,749	[1] 26,274,273	54,384	21,862,032	47,207	18,442,634	21,283	7,891,915
Foreign	111,393	76,031,932	59,620	43,700,406	76,208	55,844,932	8,932	6,560,951
BRANCHES OF THE INDUSTRY.								
Cotton goods	4,822,405	2,332,262,636	3,743,089	1,873,074,716	3,639,495	1,814,002,512	(2)	(2)
Cotton small wares	6,331	3,082,270	6,676	3,362,434	7,213	3,640,878	(2)	(2)
STATE GROUPS.								
Cotton-growing states	2,469,208	1,162,969,470	1,829,337	891,944,186	1,479,006	707,842,111	526,856	250,837,046
New England states	2,041,734	1,014,926,193	1,647,207	846,023,549	1,829,678	940,908,114	1,425,958	714,691,714
All other states	317,794	157,449,243	273,221	138,469,415	338,024	168,893,165	308,786	152,416,416
PRINCIPAL STATES.								
Alabama	241,073	116,232,495	199,806	99,100,678	134,371	67,987,299	29,962	14,726,454
Connecticut	117,189	57,723,360	104,025	53,278,482	109,111	56,865,809	104,655	52,257,968
Georgia	529,726	250,820,180	406,001	198,108,953	304,431	145,833,115	145,859	69,139,410
Maine	160,550	78,678,643	131,578	67,509,692	157,428	79,765,573	132,504	65,717,252
Maryland	57,358	27,460,792	53,794	27,054,032	80,954	39,901,955	55,026	27,265,667
Massachusetts	1,244,614	622,368,027	955,965	489,989,585	1,085,236	560,984,204	772,520	386,767,326
Mississippi	34,202	16,371,192	25,640	13,007,625	20,962	10,363,458	17,366	8,449,834
New Hampshire	285,659	138,532,627	262,894	134,809,578	271,629	136,988,647	214,034	107,319,124
New Jersey	34,354	18,400,527	33,358	16,319,367	29,644	15,287,868	25,723	12,301,151
New York	141,003	68,766,704	100,924	51,835,100	102,590	52,243,049	78,824	39,522,057
North Carolina	754,483	350,210,014	503,560	242,360,738	404,535	190,138,759	114,371	53,546,289
Pennsylvania	50,691	25,688,597	50,918	25,873,720	76,425	36,549,533	92,705	44,629,588
Rhode Island	223,670	112,757,027	183,132	95,548,635	193,226	99,475,478	193,291	97,982,155
South Carolina	690,834	324,385,778	558,100	270,957,461	485,234	230,053,807	133,342	64,000,600
Tennessee	58,574	28,312,077	38,332	19,292,275	30,273	15,040,336	33,114	15,779,360
Texas	32,686	15,893,288	18,055	9,206,589	18,045	9,304,434	(3)	(3)
Virginia	78,017	37,160,966	46,296	23,018,074	38,118	17,832,465	22,731	10,616,206
All other states [4]	94,053	45,582,012	77,387	39,166,566	104,496	53,027,601	95,573	47,925,335

[1] The figure given for sea-island cotton represents the total consumption in all industries during the year ending August 31, 1909, and that for "other than sea island" is obtained by subtracting this figure from the total for domestic cotton.
[2] Not reported separately.
[3] Included under "all other states."
[4] Includes the following:
1909—Arkansas, Delaware, Illinois, Indiana, Kansas, Kentucky, Louisiana, Missouri, Vermont, and Wisconsin.
1904—Arkansas, California, Delaware, Illinois, Indiana, Kentucky, Louisiana, Missouri, Vermont, and Wisconsin.
1899—Arkansas, California, Colorado, Delaware, Illinois, Indiana, Kentucky, Louisiana, Missouri, Nebraska, Vermont, West Virginia, and Wisconsin.
1889—Arkansas, California, Delaware, Illinois, Indiana, Iowa, Kentucky, Louisiana, Missouri, Ohio, Texas, Vermont, and Wisconsin.

The consumption of sea-island cotton in 1909 was not reported separately in connection with the census of manufactures, but the total consumption in the United States for the year ending August 31, 1909, was 67,749 bales, and presumably about the same amount was used during the year covered by the census of manufactures. Practically all of this kind of cotton was used in the manufacture of thread, lace, and other goods where strength and fineness are indispensable.

One of the most important points brought out by the table is the marked increase in cotton consumption in the cotton-growing states and the consequent

decrease in the relative importance of the older manufacturing sections. In 1889 the New England states reported 63.9 per cent of the total cotton consumption for the industry, but the proportion had decreased to 51.8 per cent in 1899, to 45.1 per cent in 1904, and to 43.5 per cent in 1909. In like manner the proportion for all states other than the New England states and the cotton growing states, which was 13.6 per cent in 1889, decreased to 9.3 per cent in 1899, to 7.4 per cent in 1904, and to 6.7 per cent in 1909. On the other hand, the cotton growing states, which comprise Virginia, Kentucky, Missouri, Kansas, Oklahoma, and the states south, reported 22.4 per cent of the total consumption in 1889, 38.9 per cent in 1899, 47.5 per cent in 1904, and 49.8 per cent in 1909.

The percentage of increase in the amount of cotton consumed in the cotton-growing states was 182.2 per cent for the decade 1889–1899 and 64.3 per cent for the decade 1899–1909. For the New England states the corresponding increases were 31.7 per cent and 7.9 per cent, respectively, while the consumption by all the remaining states taken as a group increased 10.8 per cent during the former period, but decreased 6.8 per cent during the latter. For the New England states the actual increase in cotton consumption during the decade 1899–1909 was about 74,000,000 pounds. For the separate states the largest actual increase, about 160,000,000 pounds, is shown for North Carolina, but Virginia shows the highest rate of increase among the states shown separately in Table 20—108.4 per cent.

Massachusetts was in 1909, as it had been in prior census years, the largest consumer of cotton, 1,244,614 bales, or 622,368,027 pounds, being used in the cotton manufacturing industry of the state during the year. This amount was 27 per cent greater than that reported in 1904. By reason of labor troubles, the year 1904 was one of low consumption of cotton in Fall River—the most important cotton manufacturing city in the country—and this accounted for the decrease in Massachusetts for the five-year period 1899–1904. For the decade 1899–1909 Massachusetts showed a gain of 10.9 per cent. North Carolina was the next largest user of cotton in 1909, having displaced South Carolina, which held second place in 1904 and 1899. The increase in consumption in this state from 1899 to 1909 was 84.2 per cent. South Carolina was third, Georgia fourth, and New Hampshire fifth in order in 1909, their consumption of cotton having increased during the decade 41 per cent, 72 per cent, and 1.1 per cent, respectively.

PRODUCTS.

Summary for the United States.—Table 21 gives in detail for the United States the quantity and value of the various products reported by establishments in the cotton manufacturing industry for 1909, 1904, and 1899.

Table 21

PRODUCT.	COTTON GOODS, INCLUDING COTTON SMALL WARES.		
	1909	1904	1899
Total value	[1] $628,391,813	$450,467,704	$339,200,320
Woven goods:			
Square yards	6,348,568,593	5,110,308,812	4,523,430,616
Value	$456,089,401	$324,747,837	$243,253,155
Plain cloths for printing or converting—			
Square yards	2,224,677,848	1,818,216,172	1,581,613,827
Value	$111,097,889	$80,311,612	$57,780,940
Brown or bleached sheetings and shirtings—			
Square yards	1,484,353,529	1,172,309,182	1,212,403,048
Value	$88,802,985	$61,253,376	$55,513,032
Twills and sateens—			
Square yards	388,314,961	366,142,513	235,860,518
Value	$34,274,107	$23,701,305	$14,301,302
Fancy woven fabrics—			
Square yards	426,710,359	306,254,685	237,841,603
Value	$47,498,713	$28,486,342	$21,066,310
Ginghams—			
Square yards	537,430,463	302,316,132	278,392,708
Value	$37,939,040	$22,471,867	$16,179,200
Duck—			
Square yards	162,476,322	122,601,212	129,234,076
Value	$27,485,892	$17,005,982	$14,263,008
Drills—			
Square yards	238,869,407	194,735,303	237,206,549
Value	$17,750,151	$12,596,063	$11,862,794
Ticks, denims, and stripes—			
Square yards	264,870,508	256,375,486	181,800,853
Value	$27,350,162	$23,797,578	$16,446,633
Cottonades—			
Square yards	25,676,286	25,362,346	26,323,947
Value	$3,343,533	$2,998,971	$2,791,431
Napped fabrics—			
Square yards	305,655,864	330,808,140	268,852,716
Value	$25,695,367	$26,108,315	$18,231,044
Corduroy, cotton velvet, and plush—			
Square yards	19,706,438	16,014,556	7,961,523
Value	$6,965,634	$4,790,573	$2,682,017
Woven goods—Continued.			
Mosquito and other netting—			
Square yards	59,100,819	36,232,918	41,885,023
Value	$2,103,560	$794,953	$875,868
Upholstery goods—			
Square yards	94,840,051	65,592,212	51,314,609
Value	$14,882,842	$12,111,698	$8,705,384
Tapestries (piece goods and curtains)—			
Square yards	10,657,385	9,605,006	10,166,538
Value	$4,723,907	$4,242,506	$4,158,600
Lace and lace curtains—			
Square yards	81,007,314	53,511,222	37,825,198
Value	$8,922,082	$7,208,211	$3,585,138
Other—			
Square yards	3,175,352	2,475,984	3,322,873
Value	$1,236,853	$660,981	$961,646
Bags and bagging—			
Square yards	63,107,568	57,067,663	32,739,616
Value	$4,862,451	$3,953,732	$2,554,192
Cotton towels and toweling—			
Square yards	52,778,170	40,280,292	([2])
Value	$6,037,075	$4,365,470	([2])
Tape and webbing	$5,531,674	$4,060,488	$2,521,402
Yarns for sale:			
Pounds	470,370,995	364,634,753	332,302,621
Value	$109,314,953	$79,939,687	$55,216,066
Thread:			
Pounds	23,700,957	17,163,741	15,907,058
Value	$20,516,269	$15,043,043	$11,908,671
Twine:			
Pounds	13,715,771	7,301,989	11,642,718
Value	$2,417,391	$1,428,994	$1,546,611
Cordage and rope:			
Pounds	7,663,907	([2])	([2])
Value	$1,164,526	([2])	([2])
Cotton waste for sale:			
Pounds	310,513,348	247,649,640	270,862,613
Value	$10,874,386	$10,062,057	$5,563,570
All other products	$22,483,213	$15,185,598	$10,190,845

[1] In addition, cotton goods to the value of $2,224,096 were made by establishments engaged primarily in the manufacture of products other than cotton goods.
[2] Not reported separately.

The total value of all products reported by establishments in the industry designated "cotton goods, including cotton small wares," in 1909 was $628,391,813, a gain of $177,924,109, or 39.5 per cent, over 1904, and $289,191,493, or 85.3 per cent, over 1899. The total value includes, as already stated, much duplica-

tion, and the increase shown is due in part to the higher prices prevailing in 1909. The total number of square yards of fabrics woven by establishments in the industry increased 24.2 per cent between 1904 and 1909 and 40.3 per cent between 1899 and 1909. The value of woven goods in 1909 represented a little less than three-fourths of the total value of all products.

Plain cloths for printing or converting comprise by far the most important class of woven goods, as measured by quantity, constituting, in 1909, 35 per cent of the total. Brown and bleached sheetings and shirtings ranked second, followed by ginghams, fancy woven fabrics, twills and sateens, and napped fabrics, in the order named, the production of each of these classes of cloths being more than 300,000,000 square yards in 1909.

The output of plain cloths for printing or converting increased 40.7 per cent between 1899 and 1909, and its value 92.3 per cent. The output of sheetings and shirtings increased 22.4 per cent, and their value 60 per cent. For these, as for practically all the other classes of products, the percentage of increase in value was much greater than that in quantity. The decrease in the production of sheetings and shirtings between 1899 and 1904 was largely attributable to the prolonged labor disturbances in the cotton mills of Massachusetts in the latter year.

With one exception—napped fabrics—all classes of woven goods show an increase in quantity of output from 1904 to 1909, although the output of several classes was less in 1904 than in 1899, and that of two classes—cottonades and "other" upholstering goods—was less in 1909 than in 1899. The highest relative increase during the decade was in corduroy, cotton velvet, and plush, the production of which in 1909 was 147.5 per cent greater than in 1899, and the value 159.7 per cent greater. The production of ginghams increased 93 per cent during the decade, that of upholstering goods 84.8 per cent, and that of fancy woven fabrics 79.4 per cent. The quantity of duck woven increased 25.7 per cent between 1899 and 1909, and the value increased 92.7 per cent. The total production of duck in 1909 included 8,658,111 square yards of sailcloth, valued at $1,710,631, as compared with 9,586,519 square yards, valued at $1,540,745, in 1904, and 11,750,151 square yards, valued at $2,216,371, in 1899—the decrease for sailcloth during the decade being 26.3 per cent in quantity and 22.8 per cent in value.

The most important products of the industry, other than woven fabrics, are yarns, thread, and cotton waste. The value of the yarns made for sale as such in 1909 was $109,314,953, or more than one-sixth of the total value of products of the industry. A considerable part of this yarn was sold to other establishments in the same industry. The quantity of yarn reported as produced for sale in 1909 was 470,370,995 pounds, while the quantity of yarn reported as purchased by cotton mills was 126,707,003 pounds. Much of the yarn made by the cotton mills is sold to hosiery and knit goods factories, the consumption of purchased cotton yarn by such factories in 1909 being 216,987,611 pounds, and some is sold to factories in still other textile industries. The quantity of yarn reported as manufactured for sale increased 138,068,374 pounds, or 41.5 per cent, during the decade, while the value increased 98 per cent. The amount of thread manufactured increased 49 per cent, and its value 72.3 per cent.

In addition to the products shown in Table 21 for cotton manufacturing industry, cotton manufactures of similar character to the value of $2,224,096 were reported for 1909 by establishments engaged primarily in other industries. On the other hand, the total value of products reported for 1909 for the cotton manufacturing industry proper covered products other than cotton goods and cotton small wares to the value of $7,688,866.

Table 22 shows the total value of all cotton manufactures, and the total quantity and value of certain specific classes of goods, including all of those which were reported as secondary products by establishments engaged primarily in industries other than cotton manufacturing, except that the total production of cotton twine and cotton cordage and rope is shown in Table 23. The quantities and values of the cotton goods and cotton small wares produced by establishments in other industries, which are included in Table 22, do not enter into the statistics presented in any subsequent tables.

Table 22	PRODUCTION: 1909	
	Quantity.	Value.
All products of the cotton manufacturing industry—"Cotton goods, including cotton small wares"		$628,391,813
Products other than cotton goods and cotton small wares [1]		7,688,866
Cotton goods and cotton small wares made in establishments in the cotton manufacturing industry		620,702,947
Cotton goods and cotton small wares made in establishments in other industries [2]		2,224,096
Total production of cotton goods and cotton small wares		622,927,043
	Square yards.	
Plain cloths for printing or converting	2,224,806,423	111,123,604
Brown or bleached sheetings and shirtings	1,485,813,885	88,890,888
Fancy woven fabrics	427,409,747	47,650,030
Duck	162,823,644	27,590,089
Cottonades	25,965,026	3,411,736
Upholstery goods:		
Tapestry	11,008,869	4,821,096
Lace and lace curtains	86,447,827	10,010,185
Other	3,281,363	1,264,546
Cotton towels and toweling	52,807,543	6,066,449
	Pounds.	
Tape and webbing	9,711,482	5,559,099
Yarns for sale	470,958,108	109,400,376
Thread	24,095,154	20,650,616
All other		186,488,329

[1] Includes products manufactured primarily in the following industries: Bags, other than paper; carpets and rugs, other than rag; cordage and twine and jute and linen goods; dyeing and finishing textiles; foundry and machine-shop products; furnishing goods, men's; gas, illuminating and heating; hammocks; hosiery and knit goods; house-furnishing goods; ice, manufactured; mattresses and spring beds; millinery and lace goods; shoddy; silk and silk goods, including throwsters; woolen, worsted, and felt goods, and wool hats.

[2] Includes products made by establishments in the following industries: Carpets and rugs, other than rag; clothing, men's, including shirts; cordage and twine and jute and linen goods; furnishing goods, men's; gas and electric fixtures and lamps and reflectors; haircloth; oil, castor; patent medicines and compounds and druggists' preparations; rubber goods, not elsewhere specified; upholstering materials; woolen, worsted, and felt goods, and wool hats.

Cordage and twine are the most important of the secondary products of the cotton manufacturing industry, cotton twine and cotton cordage and rope to the amount of 21,319,678 pounds having been reported for 1909 by establishments engaged primarily in this industry. The value of these products, $3,581,917, constituted almost half of the value of "products other than cotton goods and cotton small wares" reported by the cotton mills, and more than one-third of the total value of cotton twine and cotton cordage and rope reported by establishments in all industries together. The total quantity of these products reported for 1909 was 58,493,072 pounds, and the total value was $10,111,566, most of the production outside the cotton mills being reported by establishments in the industry designated "cordage and twine and jute and linen goods." The total output and value of the cotton twine and the cotton cordage and rope produced in 1909 are shown, by states, in Table 23.

Table 23

PRODUCT AND STATE.	TOTAL PRODUCTION IN ALL INDUSTRIES: 1909	
	Quantity (pounds).	Value.
Cotton twine	**34,128,402**	**$5,935,427**
Alabama	3,867,888	586,351
Connecticut	2,360,172	478,855
Georgia	5,161,778	918,824
Kentucky	2,100,857	356,181
Massachusetts	2,426,686	378,729
North Carolina	3,690,437	586,162
South Carolina	2,635,798	440,595
All other states	11,984,786	2,189,730
Cotton cordage and rope	**24,364,670**	**4,176,139**
Alabama	2,897,768	437,749
Georgia	2,091,581	319,312
Massachusetts	7,872,695	1,535,936
North Carolina	1,919,290	344,111
Pennsylvania	4,078,343	566,492
All other states	5,504,993	972,539

Products, by states.—Table 24 gives, by states, the quantities of the principal products of the cotton manufacturing industry for 1909, 1904, and 1899, with the values for 1909.

Table 24

PRODUCT AND STATE.	COTTON GOODS, INCLUDING COTTON SMALL WARES.			
	Value: 1909	Quantity.		
		1909	1904	1899
		Sq. yds.	*Sq. yds.*	*Sq. yds.*
Woven goods	**$458,089,401**	**6,348,568,593**	**5,110,308,812**	**4,523,430,616**
Alabama	16,423,719	213,195,840	219,746,574	119,328,587
Connecticut	15,084,224	186,690,012	174,376,394	164,265,504
Georgia	33,435,737	489,225,528	377,921,674	263,913,404
Indiana	2,212,510	46,018,961	37,717,483	36,803,771
Maine	20,684,419	250,188,405	198,501,318	227,136,731
Maryland	4,436,448	21,428,788	22,801,376	33,910,582
Massachusetts	138,026,795	1,989,578,059	1,586,267,624	1,634,251,238
Mississippi	2,778,213	45,596,264	36,924,725	20,034,983
New Hampshire	30,985,291	404,831,223	347,846,266	333,498,532
New Jersey	5,319,995	40,196,447	30,305,545	28,267,384
New York	11,063,423	147,069,542	112,527,732	130,911,878
North Carolina	42,192,107	625,876,309	472,596,102	290,772,125
Pennsylvania	25,357,474	160,702,325	121,871,582	126,065,666
Rhode Island	31,523,150	363,133,635	299,672,676	300,756,605
South Carolina	57,508,154	1,079,066,885	872,190,168	613,217,602
Tennessee	3,683,512	63,029,001	37,804,774	29,655,984
Texas	2,731,932	37,127,223	20,685,247	16,280,101
Virginia	6,967,544	103,045,596	66,457,082	55,894,104
All other states	5,074,754	82,568,550	74,094,470	98,465,835
Plain cloths for printing or converting	**111,097,839**	**2,224,677,848**	**1,818,216,172**	**1,581,613,827**
Alabama	2,187,301	48,108,666	40,226,106	10,460,526
Connecticut	4,571,087	59,730,700	66,974,935	60,560,820
Georgia	1,685,182	48,989,335	29,036,228	6,213,595
Maine	2,283,441	35,857,441	30,024,961	39,019,808
Massachusetts	51,541,620	1,054,755,770	846,308,546	927,405,189
New Hampshire	1,575,583	32,381,275	76,052,718	83,298,801
New York	3,537,860	86,800,075	70,321,095	80,123,110
North Carolina	4,998,695	104,895,423	93,273,990	51,244,944
Rhode Island	8,008,079	111,665,838	93,355,183	99,272,574
South Carolina	26,848,377	561,861,267	414,491,743	175,191,634
Tennessee	1,907,859	41,468,485	16,453,814	.....
All other states	1,952,805	38,103,573	41,696,853	48,822,826
Brown or bleached sheetings and shirtings	**88,802,985**	**1,484,353,529**	**1,172,309,182**	**1,212,403,048**
Alabama	4,818,284	75,130,788	108,518,564	72,432,173
Connecticut	2,249,623	33,411,424	29,917,468	17,367,180
Georgia	11,442,365	214,520,588	189,503,361	131,739,917
Indiana	2,078,480	43,864,976	37,452,564	28,076,438
Maine	6,839,398	100,591,496	83,465,950	94,416,781
Massachusetts	11,486,548	175,923,550	138,199,541	176,283,924
Mississippi	908,094	17,225,461	7,740,785	3,797,382
New Hampshire	2,012,789	29,818,914	29,075,111	64,953,520
North Carolina	8,286,984	164,707,838	105,598,908	88,085,411
Rhode Island	10,204,180	135,165,530	90,133,798	128,276,782
South Carolina	15,914,158	302,763,414	248,777,474	283,105,383
Virginia	6,656,609	97,332,899	38,308,557	18,206,054
All other states	5,905,473	93,896,651	65,617,101	105,602,103
Twills and sateens	**34,274,107**	**388,314,961**	**366,142,513**	**235,860,518**
Alabama	1,184,798	15,155,601	.....	1,397,609
Connecticut	3,152,078	40,827,992	24,594,276	19,724,407
Maine	2,452,673	27,617,061	19,136,858	25,188,579
Massachusetts	14,889,807	159,658,540	136,315,041	86,668,240
New Hampshire	4,372,001	47,921,784	39,229,377	23,926,221
New Jersey	1,311,827	5,213,309	5,533,592	4,540,034

PRODUCT AND STATE.	COTTON GOODS, INCLUDING COTTON SMALL WARES.			
	Value: 1909	Quantity.		
		1909	1904	1899
		Sq. yds.	*Sq. yds.*	*Sq. yds.*
Twills and sateens—Contd.				
North Carolina	814,767	12,473,668	15,735,124	114,166
Rhode Island	4,139,572	53,871,689	56,095,899	43,308,277
South Carolina	797,624	12,910,370	45,220,488	11,379,712
All other states	1,158,960	12,664,947	24,231,858	19,613,273
Fancy woven fabrics	**47,498,713**	**426,710,359**	**306,254,685**	**237,841,603**
Connecticut	1,747,789	17,222,224	14,316,168	20,518,759
Georgia	843,803	12,449,694	5,976,261	965,038
Maine	2,016,453	13,228,293	9,359,611	6,922,390
Massachusetts	22,378,381	197,402,265	130,960,271	137,064,111
North Carolina	3,638,379	38,513,689	22,434,783	7,770,704
Pennsylvania	5,119,822	32,806,629	30,398,352	30,981,363
Rhode Island	7,108,434	49,309,098	51,009,828	21,554,243
South Carolina	2,981,306	50,893,070	17,781,844	213,068
All other states	1,664,286	14,885,397	24,017,567	11,851,927
Ginghams	**37,939,040**	**537,430,463**	**302,316,132**	**278,392,708**
Maine	4,350,538	43,424,412	25,793,707	9,835,356
Massachusetts	10,753,018	139,552,491	70,831,304	53,932,358
North Carolina	7,103,532	111,994,426	79,056,081	79,531,131
Pennsylvania	1,654,746	13,671,537	8,211,240	11,702,638
South Carolina	1,525,286	29,417,246	26,212,195	16,752,808
All other states	12,551,920	199,370,351	92,211,605	106,548,417
Duck	**27,485,802**	**162,476,322**	**122,601,212**	**129,234,076**
Alabama	4,234,763	29,435,832	25,645,853	15,614,278
Georgia	6,640,339	49,484,921	30,429,272	31,673,022
Maryland	3,478,113	13,872,204	14,148,404	25,139,042
Massachusetts	5,988,828	29,169,491	14,486,473	17,903,967
New Jersey	2,318,134	5,747,008	2,991,048	1,369,127
Texas	1,534,588	13,660,253	7,670,619	7,655,784
All other states	3,291,127	21,106,523	27,229,543	29,878,266
Drills	**17,750,151**	**238,869,407**	**194,735,303**	**237,206,549**
Alabama	1,865,822	21,790,807	11,602,266	14,867,094
Georgia	4,378,103	64,075,402	41,727,888	36,378,866
Massachusetts	1,998,819	17,088,244	9,238,099	20,475,203
Mississippi	437,721	7,705,349	8,883,605	4,436,078
North Carolina	1,119,822	18,940,774	5,270,874	2,821,238
South Carolina	5,062,204	75,828,918	88,551,709	116,467,224
All other states	2,887,660	33,439,853	29,460,772	41,760,846
Ticks, denims, and stripes	**27,350,182**	**204,870,508**	**256,375,486**	**181,800,853**
Connecticut	1,612,636	14,888,985	19,479,607	17,180,813
Georgia	2,585,817	35,219,627	33,766,527	16,971,764
Massachusetts	6,897,895	58,716,976	65,639,919	63,794,395
Mississippi	226,838	3,000,420	4,611,710	.....
New Hampshire	2,455,764	21,324,650	22,796,522	32,201,176
North Carolina	9,801,356	97,997,821	70,499,429	23,228,007
Pennsylvania	1,209,330	10,007,237	7,934,820	12,262,848
South Carolina	808,407	8,582,717	6,533,888	1,802,138
All other states	1,752,119	15,132,075	25,113,058	14,359,712
Cottonades	**3,343,533**	**25,676,286**	**25,862,346**	**26,323,947**
Georgia	1,209,678	11,051,565	13,316,815	4,173,815
North Carolina	497,013	6,502,752	540,587	6,289,031
Pennsylvania	1,150,291	4,530,286	8,127,997	7,904,759
All other states	486,551	3,591,683	3,376,947	8,856,342

Table 24—Continued.

PRODUCT AND STATE.	COTTON GOODS, INCLUDING COTTON SMALL WARES. Value: 1909	Quantity. 1909	1904	1899
		Sq. yds.	*Sq. yds.*	*Sq. yds.*
Napped fabrics	$25,695,367	305,655,864	330,808,140	268,852,716
Georgia	1,700,757	20,472,753	6,797,117	6,044,140
Massachusetts	9,470,477	123,982,755	144,456,099	137,199,384
New Hampshire	6,567,134	71,473,313	87,666,996	62,253,909
North Carolina	5,389,195	64,627,668	62,053,042	30,175,177
All other states	2,567,804	25,099,375	29,834,886	33,180,106
Corduroy, cotton velvet, and plush	6,965,634	19,706,438	16,014,556	7,961,523
Massachusetts	1,707,507	6,109,238	4,149,619	1,687,597
New York	1,982,421	3,876,399	3,748,163	36,000
Pennsylvania	1,515,405	3,038,945	2,944,944	3,945,504
Rhode Island	1,135,767	3,106,639	3,422,296	1,965,422
All other states	624,534	3,575,217	1,749,534	327,000
Mosquito and other netting	2,103,560	59,100,819	36,232,918	41,885,023
Upholstery goods:				
Tapestries	4,723,907	10,657,385	9,605,006	10,166,538
Pennsylvania	4,163,683	8,783,867	8,691,354	9,586,606
All other states	560,224	1,873,518	913,652	579,932
Chenille curtains	24,757	92,919	268,168	805,414
Lace and lace curtains	8,922,082	81,007,314	53,511,222	37,825,198
New York	1,398,461	13,041,455	10,601,500	5,850,000
Pennsylvania	7,238,321	66,867,709	41,374,259	30,925,198
All other states	285,300	1,098,150	1,535,463	1,050,000
Other upholstery goods	1,212,096	3,082,433	2,207,816	2,517,459
Pennsylvania	1,054,591	2,423,143	1,180,573	1,655,011
All other states	157,505	659,290	1,027,243	862,448
Bags and bagging	4,862,451	63,107,568	57,067,663	32,739,616
Georgia	588,647	8,056,804	7,313,137	4,030,293
Maine	764,110	9,512,876	2,522,430	6,142,221
Massachusetts	505,904	6,105,288	16,402,821	8,240,942
New Hampshire	690,769	4,588,550	3,831,493	5,591,681
North Carolina	261,704	2,460,729	3,230,278	1,285,365
South Carolina	1,120,825	19,792,444	14,250,913	229,109
All other states	924,492	12,590,877	9,516,591	7,220,005
Cotton towels and toweling	6,037,075	52,778,170	40,280,292	(1)
Georgia	1,374,772	12,264,366	4,057,247	.....
Massachusetts	413,532	4,155,909	7,774,515	.....
New Hampshire	678,230	7,432,672	5,415,070	.....
New Jersey	630,614	10,103,237	2,849,854	.....
New York	430,393	1,955,625	1,255,460	.....
North Carolina	279,390	2,740,348	8,661,799	.....
Pennsylvania	1,749,813	10,501,557	5,408,582	.....
All other states	480,331	3,624,456	4,857,765	.....

PRODUCT AND STATE.	COTTON GOODS, INCLUDING COTTON SMALL WARES. Value: 1909	Quantity. 1909	1904	1899
		Pounds.	*Pounds.*	*Pounds.*
Tape and webbing	$5,531,674	9,663,482	(1)	(1)
Massachusetts	884,444	1,233,078	.....	.....
Pennsylvania	2,141,821	3,971,976	.....	.....
Rhode Island	2,214,178	3,791,553	.....	.....
All other states	291,231	666,875	.....	.....
Yarns for sale	109,314,953	470,370,995	364,634,753	332,302,621
Alabama	5,100,971	25,560,583	18,413,437	14,432,028
Connecticut	2,846,742	7,914,873	6,385,473	6,010,562
Georgia	11,971,488	61,956,708	45,356,389	35,748,694
Massachusetts	31,725,674	108,930,860	83,399,133	87,656,177
New Jersey	1,810,075	4,926,844	[2] 4,230,629	3,727,805
New York	6,745,518	31,765,481	24,943,995	17,922,997
North Carolina	28,312,873	142,213,450	95,481,949	86,970,599
Pennsylvania	2,591,458	11,448,343	14,303,093	18,718,490
Rhode Island	6,666,271	19,752,920	16,462,391	14,482,710
South Carolina	6,759,913	32,709,732	31,645,397	24,859,616
Tennessee	1,378,695	7,443,170	5,062,494	2,000,083
All other states	3,405,275	15,748,031	18,950,373	19,772,800
Thread	20,516,269	23,700,957	17,163,741	15,907,058
Connecticut	5,199,313	5,263,776	4,038,361	3,432,159
Massachusetts	5,285,750	6,563,216	4,717,974	3,390,883
New Jersey	5,440,068	5,848,927	3,990,863	3,634,795
New York	234,296	594,542	68,088	330,000
Pennsylvania	355,440	471,457	511,080	258,719
Rhode Island	3,516,713	3,715,469	2,934,660	3,943,840
All other states	484,689	1,243,570	902,715	916,662
Twine	[3] 2,417,391	[3] 13,715,771	7,301,589	11,642,718
Cordage and rope	[4] 1,164,526	[4] 7,603,907	(1)	(1)
Cotton waste (mill waste)	10,874,386	310,513,348	247,649,640	270,862,613
Alabama	219,872	10,405,797	6,873,474	6,764,490
Connecticut	469,811	11,315,800	9,923,878	10,153,771
Georgia	510,168	19,684,927	[2] 16,162,249	15,310,595
Massachusetts	4,650,374	115,907,265	82,270,060	114,597,274
New Hampshire	263,256	12,366,641	9,651,117	18,748,350
North Carolina	836,652	34,861,543	22,235,597	22,039,030
Rhode Island	1,984,192	42,158,042	49,352,389	19,159,895
South Carolina	850,246	29,621,480	24,199,029	25,582,434
All other states	1,089,815	34,191,853	26,981,847	38,506,774

[1] Figures not available.
[2] Excluding statistics for one establishment, to avoid disclosure of individual operations.
[3] In addition, 20,412,631 pounds, valued at $3,518,036, were made by establishments manufacturing cotton cordage and twine as primary products.
[4] In addition, 16,700,763 pounds, valued at $3,011,613, were made by establishments manufacturing cotton cordage and twine as primary products.

Massachusetts, the most important state in the industry as a whole, produced 47.4 per cent of the total output of plain cloths for printing or converting in 1909, as compared with 58.6 per cent in 1899. South Carolina ranked second, with 25.3 per cent of the total quantity in 1909 and 11.1 per cent in 1899, followed by Rhode Island, North Carolina, New York, and Connecticut.

South Carolina was the largest producer of sheetings and shirtings, reporting 20.4 per cent of the total output in 1909 and 23.4 per cent in 1899. Georgia ranked second in this respect, and Massachusetts third (though the latter state ranked second on the basis of value), while North Carolina and Rhode Island were fourth and fifth. The average value per yard of the sheetings and shirtings manufactured in North Carolina was $0.0503, in South Carolina $0.0526, in Georgia $0.0533, in Massachusetts $0.0653, and in Rhode Island $0.0755.

Twills and sateens, whose manufacture involves fine spinning and complicated weaving, are produced for the most part in the Northern states. Massachusetts reported 41.1 per cent of the total quantity of these goods in 1909 and Rhode Island 13.9 per cent. The proportions reported by these states in 1899 were 36.7 per cent and 18.4 per cent, respectively.

Of the total production of fancy woven fabrics, Massachusetts reported 46.3 per cent in 1909 and 57.6 per cent in 1899. The table shows a large increase in the manufacture of this class of goods in the Southern states, Georgia, North Carolina, and South Carolina reporting a combined production of over 100,000,000 square yards in 1909, as compared with less than 10,000,000 in 1899.

Of the total output of ginghams, Massachusetts produced 26 per cent and North Carolina 20.8 per cent in 1909, as compared with 19.4 and 28.6 per cent, respectively, in 1899.

Of the total quantity of duck woven, Georgia furnished 30.5 per cent in 1909, and Massachusetts 18 per cent, the corresponding proportions in 1899 being 24.5 per cent and 13.9 per cent, respectively.

South Carolina and Georgia, with 31.7 per cent and 26.8 per cent of the total, respectively, were the lead-

ing states in the production of drills in 1909. The former state, however, shows a smaller percentage of the total production for 1909 than for 1899. North Carolina and Massachusetts were the leading states in the production of ticks, denims, and stripes, the former reporting 37 per cent and the latter 22.2 per cent of the total production for the year 1909, as compared with 12.8 per cent and 35.1 per cent, respectively, for 1899. Of cottonades, Georgia reported the largest production in 1909 and 1904, and Pennsylvania in 1899. Massachusetts, New Hampshire, and North Carolina were the leading states in the manufacture of napped fabrics at all three censuses.

The state of Pennsylvania produces the great bulk of the tapestries manufactured in the United States, as well as of the lace and lace curtains. Chenille curtains were reported from Pennsylvania and New Jersey.

Of the total production of bags and bagging, in 1909, South Carolina reported 19,792,444 square yards, or 31.4 per cent while Maine contributed 15.1 per cent. The production of tape and webbing was confined almost exclusively to Pennsylvania, Rhode Island, and Massachusetts.

Though the state of North Carolina spun more pounds of yarn for sale in 1904 and 1909 than any other state, the value in 1909 was less than that of the yarns produced in Massachusetts. The average reported value per pound of the yarn produced in the former state was 19.4 cents in 1904 and 19.9 cents in 1909, as compared with 25.6 cents and 29.1 cents, respectively, in the latter state.

In production of thread or sewing cotton, Massachusetts, New Jersey, Connecticut, and Rhode Island were the leading states.

Production of yarns.—Table 25 gives, by states, for 1909, 1904, and 1899, the production of cotton yarn, classified according to grade or fineness. Yarns made for use in further manufacture in the same establishments are included, as well as yarns made for sale.

Table 25 — PRODUCTION OF COTTON YARN IN THE COTTON GOODS BRANCH OF THE INDUSTRY (POUNDS).

STATE.	Total.			No. 20 and under, coarse.			No. 21 to 40, medium.			No. 41 and over, fine.		
	1909	1904	1899	1909	1904	1899	1909	1904	1899	1909	1904	1899
United States	2,037,653,722	1,529,483,718	1,467,565,971	1,014,069,688	803,764,679	850,203,953	866,328,605	601,971,584	540,166,147	157,255,429	123,747,455	77,195,871
Alabama	104,311,123	84,595,024	57,866,762	71,581,923	64,938,634	51,325,723	28,268,986	18,698,617	6,541,039	4,460,214	957,773	.....
Connecticut	48,241,048	43,622,529	44,808,803	11,780,876	13,068,506	15,634,079	20,407,387	18,368,951	19,280,451	16,052,785	12,185,072	9,894,273
Georgia	230,771,195	161,516,603	116,967,671	188,303,084	136,058,017	108,276,364	42,102,121	24,864,304	8,691,307	365,990	694,282	.....
Indiana	10,871,116	6,151,356	8,666,072	4,731,055	3,065,950	8,666,072	6,140,061	3,085,406	.....	.....	.....	.....
Kentucky	8,796,515	7,305,440	9,071,044	4,623,076	5,403,458	5,818,514	4,173,439	1,901,982	3,252,530	.....	.....	.....
Louisiana[1]	7,547,631	5,561,703	7,891,495	7,547,631	5,082,790	7,891,495	.....	478,913	.....	.....	.....	.....
Maine	73,887,722	55,988,081	67,003,387	23,826,696	18,715,275	40,530,149	45,282,841	32,694,111	23,608,965	4,778,185	4,578,695	2,864,273
Maryland[2]	24,449,126	23,550,570	31,143,023	24,390,580	23,414,644	30,215,181	58,546	135,926	927,842	.....	.....	.....
Massachusetts	523,523,228	381,108,770	442,538,758	175,150,251	141,986,900	164,190,352	283,053,920	178,143,116	235,617,217	65,319,057	60,978,754	42,731,189
Mississippi	12,678,372	10,904,221	7,909,625	9,589,216	8,144,612	7,909,625	3,089,156	2,586,463	.....	.....	173,146	.....
New Hampshire	122,469,975	108,439,062	108,968,243	68,370,303	66,579,541	79,300,869	51,389,977	39,680,978	29,667,374	2,709,695	2,178,543	.....
New Jersey	14,658,395	12,550,060	12,230,347	7,223,907	5,242,201	5,366,044	3,818,197	3,581,390	2,079,499	3,616,291	3,726,469	3,884,804
New York	60,403,324	43,797,990	42,014,730	31,215,894	21,667,253	25,241,091	28,391,604	21,500,176	16,443,639	795,826	630,561	330,000
North Carolina	308,604,753	202,362,469	156,435,539	175,683,089	122,105,707	99,021,341	116,466,984	74,691,014	56,527,998	16,454,680	5,565,748	886,200
Pennsylvania	22,636,781	23,157,717	32,468,390	18,131,579	18,445,420	25,344,251	3,745,849	4,434,282	6,754,139	759,353	278,015	370,000
Rhode Island	93,406,528	74,990,890	77,238,360	11,007,274	8,775,161	3,661,667	57,301,949	44,925,924	57,341,561	25,097,305	21,289,805	16,235,132
South Carolina	284,657,472	230,516,645	195,930,440	125,098,888	108,230,002	132,903,687	143,722,335	112,001,986	63,026,753	15,836,249	10,284,657	.....
Tennessee	26,311,310	16,005,737	11,152,567	15,825,402	11,975,474	11,152,567	10,435,908	3,847,416	.....	50,000	182,847	.....
Texas	14,373,419	7,630,050	8,210,626	11,796,929	5,378,825	8,210,626	2,576,490	2,251,225	.....	.....	.....	.....
Vermont	4,359,021	3,799,474	5,432,983	.....	92,675	1,525,033	3,594,842	3,663,711	3,907,950	764,179	43,088	.....
Virginia	32,927,615	18,921,483	15,110,233	22,891,774	9,576,561	13,457,870	10,035,841	9,344,922	1,652,363	.....	.....	.....
All other states[3]	7,768,053	6,907,844	8,506,873	5,300,261	5,817,073	4,561,353	2,272,172	1,090,771	3,945,520	195,620	.....	.....

[1] Includes Arkansas.
[2] Includes Delaware.
[3] Includes states as follows: For 1909, Illinois, Kansas, Missouri, and Wisconsin; for 1904, California, Illinois, Missouri, and Wisconsin; and for 1899, California Illinois, Missouri, and Wisconsin.

The increase in the total amount of yarn made in the establishments of the cotton manufacturing industry from 1904 to 1909 was 33.2 per cent; from 1899 to 1904, 4.2 per cent; and for the decade 1899–1909, 38.8 per cent. Each of the three grades of yarn for which statistics are presented shows a considerable increase for the decade, but there has been considerable variation from census to census in the proportions which the several grades formed of the total production.

Table 26 shows, in percentages, the distribution of the yarn production, by grades, for the census years from 1889 to 1909.

Table 26 — PER CENT OF TOTAL YARN PRODUCTION IN THE COTTON MANUFACTURING INDUSTRY.

GRADE OR SIZE.	1909	1904	1899	1889
Coarse (No. 20 and under)	49.8	52.6	57.9	53.3
Medium (No. 21 to No. 40)	42.5	39.4	36.8	42.9
Fine (No. 41 and over)	7.7	8.1	5.3	3.9

This table shows that, in the country as a whole, coarse yarn formed a considerably smaller proportion of the total production in 1909 than in 1899, and both medium and fine yarns a considerably larger proportion.

The New England states reported nearly three-fourths of all the fine yarn produced in 1909, Massachusetts alone reporting 41.5 per cent of the total. Rhode Island ranked second in the production of fine yarn, North Carolina third, and Connecticut fourth. The total quantity reported in 1909 was 103.7 per cent greater than in 1899. The rapid increase in the production of yarn of this grade in North Carolina and some of the other Southern states is noteworthy.

The production of medium yarn (No. 21 to No. 40) shows an increase of 60.4 per cent for the decade 1899–1909. Massachusetts led in the production of this grade as well as of fine yarn, reporting nearly one-third of the total for the United States in 1909. South Carolina ranked second, North Carolina third, and Rhode Island fourth, these four states together furnishing about seven-tenths of the total quantity reported.

The output of coarse yarn (No. 20 and under) increased 26.2 per cent between 1904 and 1909, but a decrease took place during the five-year period 1899–1904, and the net increase for the decade was only 19.3 per cent. Georgia led in the amount of coarse yarn spun in 1909, with North Carolina second, Massachusetts third, and South Carolina fourth.

EQUIPMENT.

Spindles.—Although the number of spindles reported is not a strictly accurate index of the growth of the cotton industry, because of their different speeds and their use upon different grades of yarn, it is one of the best standards available and is the most generally accepted measure of progress. "Producing" spindles are those which are used in the production of yarn as distinguished from "doubling" and "twisting" spindles, which, as the name implies, twist two or more yarns together into a single strand. A spindle is termed "active" if it has been in operation at any time during the census year.

Table 27 gives, by geographic divisions, for 1909, 1904, and 1899, the number of active producing spindles in the cotton mills, exclusive of mills in the cotton small wares branch of the industry.

Table 27

DIVISION.	ACTIVE PRODUCING SPINDLES IN COTTON MILLS.[1]				
	1909	1904	1899	Increase.[2]	
				1904–1909	1899–1904
United States	27,395,800	23,155,613	19,008,352	4,240,187	4,147,261
New England	15,383,909	13,911,241	12,850,987	1,472,668	1,060,254
Middle Atlantic	1,451,323	1,407,495	1,458,635	43,828	−51,140
East North Central	150,336	164,388	155,472	−14,052	8,916
South Atlantic	8,867,749	6,395,901	3,695,769	2,471,848	2,700,132
East South Central	1,338,201	1,113,006	676,979	225,195	436,027
West South Central	170,938	141,066	114,056	29,872	27,010
All other	33,344	22,516	56,454	10,828	−33,938

[1] Not including mills in the cotton small wares branch of the industry.
[2] A minus sign (−) denotes decrease.

The New England division reported 56.2 per cent of the entire number of active producing spindles in the cotton mills of the United States in 1909, as compared with 67.6 per cent in 1899, showing a considerable decrease in relative importance in this respect, notwithstanding an increase of 19.7 per cent in the total number of producing spindles during the decade. The South Atlantic division reported 32.4 per cent of the total number of active producing spindles in 1909 and 19.4 per cent in 1899 the increase during the decade being 139.9 per cent. The numerical gain in the South Atlantic division during the decade was 5,171,980, as compared with 2,532,922 in the New England division. The number of active producing spindles in the East South Central division increased 97.7 per cent from 1899 to 1909, but in the Middle Atlantic division the number in 1909 was slightly less than that in 1899.

Table 28 shows the number of active producing cotton spindles in the several textile industries, by geographic divisions and states, for 1909 and 1899, with the total for all textile industries for 1889 also.

The total number of cotton spindles in the principal textile industries in 1909 was 28,178,862, of which 27,425,608 were in the cotton mills, including a comparatively small number in mills making cotton small wares. The increase in the number of spindles from 1889 to 1899 was 5,079,804, or 35.3 per cent, and from 1899 to 1909, 8,714,878, or 44.8 per cent. The greatest percentage of increase in any industry from 1899 to 1909 was in the hosiery and knit-goods industry—134.8 per cent. A decrease is shown in the number of cotton spindles in the woolen and worsted mills and the carpet and rug factories combined.

Eight states—Georgia, the two Carolinas, and all the New England states except Vermont—reported over 1,000,000 active producing spindles in 1909. Massachusetts, the leading state, with 9,637,601 spindles, shows a gain of 1,705,930, or 21.5 per cent, for the 10-year period 1899–1909. South Carolina reported the greatest absolute and relative increase during the decade, the gain being 2,323,922 spindles, or 161.7 per cent. In North Carolina the increase was 1,820,907 spindles, or 160.1 per cent. The percentages of gain for the decade for the other states which reported a million or more spindles in 1909 are as follows: Georgia, 113.3 per cent; Maine, 21.3 per cent; Connecticut and Rhode Island, 20.3 per cent each, and New Hampshire, 6.1 per cent. Six states shown in the table reported fewer spindles in 1909 than in 1899, namely, Delaware, Maryland, New Jersey, Pennsylvania, Vermont, and Wisconsin.

Of the total number of cotton spindles in the hosiery and knit-goods industry, 195,089, or 40.4 per cent, were reported from the Middle Atlantic states, most of these being in the state of New York.

Table 28

DIVISION AND STATE.	ACTIVE PRODUCING COTTON SPINDLES IN THE TEXTILE INDUSTRIES.										
	Total.			In cotton mills.[1]		In hosiery and knitting mills.		In woolen, worsted, and carpet mills.		In cordage and twine factories.	
	1909	1899	1889	1909	1899	1909	1899	1909	1899	1909	1899
United States	**28,178,862**	**19,463,984**	**14,384,180**	**27,425,608**	**19,050,952**	**483,117**	**205,742**	**131,717**	**147,524**	**138,420**	**59,766**
New England	15,735,086	13,165,809	10,934,297	15,411,549	12,891,787	179,288	136,600	104,397	117,908	39,852	19,514
Maine	1,028,680	848,377	892,762	1,020,688	841,521	.....	.....	4,096	3,584	3,896	3,272
New Hampshire	1,325,900	1,249,875	1,198,643	1,318,932	1,243,555	3,992	6,320	336	.....	2,640	.....
Vermont	91,712	100,028	71,591	91,712	100,028	.....	.....	.....	.....	.....	.....
Massachusetts	9,637,601	7,931,671	5,872,852	9,375,004	7,784,687	151,160	90,780	98,813	53,204	12,624	3,000
Rhode Island	2,371,777	1,972,042	1,959,294	2,363,689	1,920,522	.....	.....	1,152	51,120	6,936	400
Connecticut	1,279,416	1,063,816	939,155	1,241,524	1,001,474	24,136	39,500	.....	10,000	13,756	12,842
Middle Atlantic	1,661,932	1,530,051	1,500,317	1,451,491	1,458,635	195,089	52,532	10,152	17,684	5,200	1,200
New York	962,841	762,896	629,324	778,036	720,268	176,753	38,404	7,352	4,224	700	.....
New Jersey	420,784	431,730	374,442	420,784	431,730	.....	.....	.....	.....	.....	.....
Pennsylvania	278,307	335,425	496,551	252,671	306,637	18,336	14,128	2,800	13,460	4,500	1,200
North Central	215,084	177,642	141,686	183,680	169,126	24,468	.....	.....	6,500	6,936	2,016
Indiana	124,104	108,988	80,604	119,568	102,488	.....	.....	.....	6,500	4,536	.....
Illinois	39,240	31,488	21,800	28,656	31,488	10,584	.....	.....	.....	.....	.....
Michigan	13,884	.....	.....	.....	.....	13,884	.....	.....	.....	.....	.....
Wisconsin	2,112	21,496	32,592	2,112	21,496	.....	.....	.....	.....	.....	.....
Missouri	30,744	13,654	6,690	28,344	13,654	.....	.....	.....	.....	2,400	.....
Kansas	5,000	2,016	.....	5,000	.....	.....	.....	.....	.....	.....	2,016
South Atlantic	8,959,297	3,727,941	1,432,838	8,869,749	3,697,569	56,948	14,360	6,992	.....	25,608	16,012
Delaware	7,360	34,552	53,916	7,360	34,552	.....	.....	.....	.....	.....	.....
Maryland	133,302	154,064	161,786	133,302	154,064	.....	.....	.....	.....	.....	.....
Virginia	324,542	132,707	94,294	316,970	126,827	7,572	5,880	.....	.....	.....	.....
North Carolina	2,958,235	1,137,328	344,606	2,908,383	1,133,432	24,944	2,860	2,000	.....	22,608	1,036
South Carolina	3,760,891	1,436,969	332,784	3,754,251	1,431,349	6,640	5,620	.....	.....	.....	.....
Georgia	1,774,967	832,321	445,452	1,749,483	817,345	17,792	.....	4,992	.....	2,700	14,976
South Central	1,594,331	811,349	346,462	1,509,139	791,035	27,324	2,250	10,176	5,000	47,742	13,064
Kentucky	85,044	66,633	42,942	72,956	66,633	.....	.....	.....	.....	12,088	.....
Tennessee	247,530	130,296	98,324	225,638	123,896	11,892	.....	10,000	5,000	.....	1,400
Alabama	913,503	419,968	79,362	885,803	411,328	10,932	.....	176	.....	16,592	8,640
Mississippi	159,904	78,146	57,004	153,804	75,122	.....	.....	.....	.....	6,100	3,024
Arkansas	17,114	9,700	5,780	13,754	9,700	.....	.....	.....	.....	3,360	.....
Louisiana	67,902	57,850	47,050	59,556	55,600	4,500	2,250	.....	.....	3,846	.....
Oklahoma	5,756	.....	.....	.....	.....	.....	.....	.....	.....	5,756	.....
Texas	97,628	48,756	16,000	97,628	48,756	.....	.....	.....	.....	.....	.....
All other	13,082	51,192	28,580	.....	42,800	.....	.....	.....	432	13,082	7,960

[1] Including mills in the cotton small wares branch of the industry.

Table 29 shows the number of active producing ring and mule spindles in cotton mills, by states, for the years 1909, 1904, 1899, and 1889. It does not include spindles in establishments engaged in the cotton small wares branch of the industry except for the year 1889.

Table 29

STATE.	ACTIVE RING AND MULE SPINDLES IN COTTON MILLS.											
	1909			1904			1899			1889[1]		
	Total.	Ring.	Mule.	Total.	Ring.	Mule.	Total.	Ring.	Mule.	Total.	Ring.	Mule.
United States	**27,395,800**	**22,679,006**	**4,716,794**	**23,155,613**	**17,933,756**	**5,221,857**	**19,008,352**	**13,444,872**	**5,563,480**	**14,188,103**	**8,824,617**	**5,363,486**
Alabama	885,803	882,803	3,000	758,087	751,087	7,000	411,328	403,328	8,000	79,234	69,774	9,460
Connecticut	1,241,524	818,074	423,450	1,149,915	702,439	447,476	1,000,574	607,448	393,126	934,155	536,514	397,641
Georgia	1,747,483	1,677,987	69,496	1,316,573	1,247,301	69,272	815,545	730,619	84,926	445,452	424,928	20,524
Indiana	119,568	110,616	8,952	119,252	101,184	18,068	102,488	86,168	16,320	74,604	58,284	16,320
Kentucky	72,956	62,036	10,920	76,192	55,072	21,120	66,633	48,234	18,399	42,942	34,158	8,784
Louisiana	59,556	59,556	.....	59,052	56,552	2,500	55,600	55,600	.....	46,200	46,200	.....
Maine	1,020,688	859,372	161,316	891,246	667,522	223,724	841,521	584,573	256,948	885,762	541,065	344,697
Maryland	133,302	133,302	.....	133,672	133,672	.....	154,064	154,064	.....	158,930	153,574	5,356
Massachusetts	9,372,364	7,282,153	2,090,211	8,411,249	6,082,189	2,329,060	7,784,687	5,228,371	2,556,316	5,824,518	3,393,799	2,430,719
Mississippi	153,804	153,004	800	125,352	125,352	.....	75,122	75,122	.....	57,004	57,004	.....
New Hampshire	1,318,932	1,164,386	154,546	1,301,281	1,032,205	269,076	1,243,555	956,390	287,165	1,195,643	831,409	364,234
New Jersey	420,784	107,381	313,403	436,764	87,960	348,804	431,730	64,638	367,092	374,442	69,962	304,480
New York	777,980	417,978	360,002	704,634	328,132	376,502	720,268	353,132	367,136	606,796	272,586	334,210
North Carolina	2,908,383	2,849,865	58,518	1,880,950	1,814,190	66,760	1,133,432	1,098,080	35,352	337,786	306,866	30,920
Pennsylvania	252,559	131,214	121,345	266,097	145,756	120,341	306,637	182,190	124,447	439,638	263,951	175,687
Rhode Island	2,338,689	1,463,346	875,343	2,049,522	1,199,284	850,238	1,880,622	940,294	940,328	1,924,486	1,112,617	811,869
South Carolina	3,754,251	3,731,039	23,212	2,864,092	2,848,980	15,112	1,431,349	1,420,597	10,752	332,784	328,784	4,000
Tennessee	225,638	215,638	10,000	153,375	143,375	10,000	123,896	103,116	20,780	97,524	75,936	21,588
Texas	97,628	97,628	.....	68,170	68,170	.....	48,756	48,756	.....	15,000	15,000	.....
Vermont	91,712	75,872	15,840	108,028	80,312	27,716	100,028	56,712	43,316	71,591	28,856	42,735
Virginia	316,970	316,970	.....	193,062	189,974	3,088	126,827	124,502	2,325	94,294	81,096	13,198
All other states	85,226	68,786	16,440	89,048	73,048	16,000	153,690	122,938	30,752	149,318	122,254	27,064

[1] Includes mills in the cotton small wares branch of the industry.

While the number of ring spindles has increased rapidly from census to census, the number of mule spindles reported decreased steadily from 1899 to 1909. In 1889 mule spindles formed 37.8 per cent of the total; in 1899, 29.3 per cent; in 1904, 22.6 per cent; and in 1909, only 17.2 per cent. Most of the individual states

show decreases in the number of mule spindles reported for 1909, as compared with the number in 1899.

The use of mule spindles is confined chiefly to the Northern states. In 1909 the number in Massachusetts, 2,090,211, represented more than two-fifths of the total number of mule spindles in the United States and more than one-fifth of the total number of all spindles in that state. The proportion of mule spindles, however, was considerably higher in some of the other states, including Connecticut, New Jersey, New York, Pennsylvania, and Rhode Island, about three-fourths of the spindles in New Jersey in 1909 being mule spindles. Apparently, however, the purchase and installation of mule spindles have practically ceased, for in the states where most of the cotton mills are comparatively new the number of mule spindles is relatively insignificant. In South Carolina, which has more spindles than any other state except Massachusetts, mule spindles constituted in 1909 less than 1 per cent of the total number of spindles.

In addition to the active spindles reported there were 523,911 idle "producing" spindles in active cotton mills in 1909, statistics for which are given in Table 30.

Table 30

STATE.	IDLE SPINDLES IN THE COTTON MANUFACTURING INDUSTRY: 1909		
	Total.	Ring.	Mule.
United States	**523,911**	**433,312**	**90,599**
Alabama	18,844	18,844	.....
Connecticut	2,816	1,344	1,472
Georgia	30,477	30,477	.....
Indiana	1,248	1,248	.....
Louisiana	19,168	19,168	.....
Maine	8,496	8,496	.....
Maryland	3,660	3,660	.....
Massachusetts	65,972	51,165	14,807
Mississippi	7,544	.....	7,544
New Hampshire	114,273	113,803	470
New Jersey	8,995	8,139	856
New York	7,104	7,104	.....
North Carolina	80,626	64,690	15,936
Pennsylvania	14,620	6,120	8,500
Rhode Island	40,495	10,457	30,038
South Carolina	73,010	73,010	.....
Tennessee	3,150	3,150	.....
Texas	224	224	.....
Vermont	13,472	2,496	10,976
Virginia	600	600	.....
All other states	9,117	9,117	.....

In addition to the active producing cotton spindles, the cotton mills reported, in 1909, 2,061,603 doubling and twisting spindles, and 5,044 producing spindles using fibers other than cotton. Table 31 shows the doubling and twisting spindles distributed by geographic divisions and states.

Table 31

DIVISION AND STATE.	Doubling and twisting spindles in the cotton manufacturing industry: 1909	DIVISION AND STATE.	Doubling and twisting spindles in the cotton manufacturing industry: 1909
United States	**2,061,603**	South Atlantic	707,109
New England	985,648	Maryland	42,444
Maine	24,570	Virginia	300
New Hampshire	42,162	North Carolina	358,415
Vermont	220	South Carolina	139,224
Massachusetts	548,957	Georgia	166,726
Rhode Island	226,373	South Central	115,468
Connecticut	143,366	Kentucky	1,792
Middle Atlantic	249,410	Tennessee	22,588
New York	33,110	Alabama	75,484
New Jersey	192,676	Mississippi	7,680
Pennsylvania	23,624	Arkansas	3,000
North Central	3,968	Louisiana	192
Ohio	1,600	Texas	4,732
Indiana	560		
Wisconsin	1,000		
Missouri	808		

Looms.—Table 32 gives, by geographic divisions, for 1909, 1904, and 1899, the total number of looms employed in the cotton mills (exclusive of the mills in the cotton small wares branch of the industry), classified according to the character of the fabrics on which used.

Of the total number of looms in 1909, 74.8 per cent were employed on plain cloths, 12.4 per cent on twills and sateens, 11.8 per cent on fancy weaves, and only 1 per cent on all other fabrics.

The total number of looms increased 182,281, or 40.4 per cent, during the decade. The rate of increase in the number of looms in each five-year period was a little lower than that in the number of spindles. The greatest increase for the decade in any geographic division was 96,879, or 101.3 per cent, in the South Atlantic division. The New England division shows an increase of 74,675, or 25 per cent, the Middle Atlantic a slight decrease, and the East South Central an increase of 11,343, or 75.6 per cent.

Of the several classes of looms employed on the different widths of plain cloth, the one showing the greatest percentage of gain is that comprising looms over 36 inches wide, which increased 59 per cent in number during the decade 1899–1909, as compared with an increase of only 39.2 per cent in the total number of looms used on plain cloth. This means that the capacity of the looms employed on plain cloth increased more rapidly than their total number.

The number of looms on twills and sateens increased 19,453, or 33.1 per cent, most of this gain having been in the New England states. An actual loss was reported by the Middle Atlantic division. The number of looms on fancy weaves increased 29,204, or 63.9 per cent. The largest absolute gain in number of looms reported was in the New England states, but the relative increase in these states was less than that in the South Atlantic division, which amounted to 256.9 per cent.

Table 32

DIVISION.	Census.	LOOMS IN COTTON MILLS.[1] Aggregate.	On plain cloths. Total.	Less than 28 inches wide.	28 to 31 inches wide, inclusive.	32 to 36 inches wide, inclusive.	Over 36 inches wide.	On twills and sateens.	On fancy weaves.	On tapes and other narrow goods.	On bagging and other special fabrics.
United States	[2] 1909	632,963	473,373	40,934	129,543	102,401	200,495	78,292	74,890	1,332	5,076
	1904	540,910	402,747	31,901	115,966	94,649	160,231	68,038	62,214	1,439	6,472
	1899	450,682	340,027	35,601	98,995	79,349	126,082	58,839	45,686	1,709	4,421
New England	[2] 1909	373,560	255,792	18,557	76,875	47,261	113,099	63 940	50,699	381	2,748
	1904	324,058	223,291	11,228	81,742	40,343	89,978	55,093	41,443	711	3,520
	1899	298,885	216,729	16,765	77,326	37,722	84,916	47,080	31,635	1,586	1,855
Middle Atlantic	[2] 1909	30,805	19,494	4,907	1,940	1,913	10,728	1,550	8,302	270	1,090
	1904	28,784	16,051	5,381	492	2,150	8,028	1,915	9,494	64	1,200
	1899	32,586	18,297	6,160	2,499	2,733	6,905	3,366	9,287	84	1,552
East North Central	[2] 1909	4,399	3,686	.....	350	2,784	552	152	55	500	6
	1904	4,696	4,277	430	55	2,709	1,083	.....	19	394	6
	1899	3,461	3,256	.....	523	2,571	202	.....	.....	.....	165
South Atlantic	[2] 1909	192,560	166,818	15,956	44,233	39,783	66,846	9,330	15,131	181	1,100
	1904	155,559	134,158	13,763	26,195	40,334	53,866	9,700	9,923	270	1,508
	1899	95,631	84,098	12,208	14,059	27,516	30,255	6,817	4,240	39	487
East South Central	[2] 1909	26,342	22,442	1,454	5,343	8,769	6,876	3,221	609	.....	70
	1904	23,431	21,176	1,097	6,922	7,397	5,760	1,280	901	.....	74
	1899	14,999	13,336	388	3,568	6,457	2,923	1,132	360	.....	171
West South Central	[2] 1909	4,501	4,345	60	676	1,508	2,106	90	4	.....	62
	1904	3,726	3,288	.....	560	1,466	1,262	50	384	.....	4
	1899	1,018	702	.....	498	204	.....	244	.....	.....	72
All other states [3]	[2] 1909	796	796	.....	120	388	288	.....	.....	.....	.....
	1904	656	506	2	.....	250	254	.....	50	.....	100
	1899	4,052	3,569	20	522	2,146	881	200	104	.....	119

[1] Not including mills in the cotton small wares branch of the industry.
[2] In addition, establishments engaged primarily in the manufacture of products other than cotton goods reported cotton looms as follows:

Total number	540
On plain cloths	85
28 to 32 inches wide	19
36 inches wide and over	66
On twills and sateens	40
On fancy weaves	415

[3] Includes the following states, with establishments as indicated: For 1909, Kansas, 1, and Missouri, 2; for 1904, California, 1, and Missouri, 1; for 1899, Arkansas, 2; California, 1; Colorado, 1; Illinois, 1; Louisiana, 2; Missouri, 2; Nebraska, 1; and West Virginia, 1.

Relation of spindles and looms to wage earners and cotton consumption.—Table 33 shows the average number of wage earners in cotton mills (including the mills in the cotton small wares branch of the industry), the amount of wages paid, the total number of active producing spindles, the number of such spindles per wage earner, and the amount of wages paid per spindle, for each census year from 1879 to 1909.

Table 33

YEAR.	COTTON GOODS, INCLUDING COTTON SMALL WARES. Wage earners (average number).	Wages.	Number of active producing spindles.	Number of spindles per wage earner.	Wages per spindle.
1909	378,880	$132,859,145	27,425,608	72.39	$4.84
1904	315,874	95,205,796	23,195,143	73.43	4.15
1899	302,861	86,689,752	19,050,952	62.90	4.55
1889	218,876	66,024,538	14,188,103	64.82	4.65
1879	172,544	42,040,510	10,653,435	61.74	3.95

While there is little necessary relation between the number of spindles in a single establishment, or even in a single state or division, and the number of wage earners employed, by reason of variations in the character of the products turned out, the grade of labor employed, and other factors which would affect either the proportion of spinners in the total number of wage earners or the nominal efficiency of the labor, the average number of spindles per wage earner for the United States as a whole is not without significance. It shows the relation, at least, between two statistical elements which are widely used as standards for measuring the growth of industries; and the industry as a whole is not subject to the rapid and radical changes which sometimes affect the mills of a limited section. Temporary labor troubles in New England in 1904 somewhat reduced the average number of wage earners without making any corresponding reduction in the number of spindles reported, thus rendering the average number of spindles per wage earner for that year somewhat higher than it would otherwise have been; but this case is exceptional. Increasing rates of wages must be taken into account, of course, in considering the wage cost per spindle, and also the fact that salaries were to some extent included with wages at the earlier consuses.

Of somewhat more significance, perhaps, than the figures given in the preceding table, are statistics

showing the average number of spindles per spinner and the average number of looms per weaver. Such statistics are presented in Table 34.

Table 34 — STATE.	COTTON GOODS, INCLUDING COTTON SMALL WARES. Average number of spindles per spinner.	Average number of looms per weaver.
United States:		
1909	407	6.5
1904	384	5.5
Leading states, 1909:		
New England—		
Massachusetts	718	6.9
New Hampshire	553	8.8
Rhode Island	582	7.6
Southern—		
Alabama	245	5.7
Georgia	219	5.8
North Carolina	228	5.4
South Carolina	297	7.5

The several states differ greatly in the number of spindles per spinner, the figures for the Southern states being very much lower than those for the New England states. These differences are doubtless mainly attributable to differences in the efficiency of labor, to the fact that relatively more children are employed as spinners in the South than in the North, and to differences in the grade of yarn made. The difference between the South and the North with respect to the number of looms per weaver is less conspicuous; in fact, the average number of looms per weaver was higher in South Carolina than in Massachusetts.

Table 35 shows the amount of cotton used per spindle in the United States during each census year from 1879 to 1909, and in the leading states during 1909.

Table 35 — STATE.	Cotton consumed per spindle in the cotton manufacturing industry (pounds).
United States:	
1909	85.15
1904	80.90
1899	95.41
1889	78.79
1879	70.43
Leading states, 1909:	
New England—	
Massachusetts	66.39
New Hampshire	105.03
Rhode Island	47.70
Southern—	
Alabama	131.22
Georgia	143.37
North Carolina	120.41
South Carolina	86.40

The consumption of cotton per spindle in the country as a whole was considerably greater in 1909 than in 1879, though much less than in 1899. The changes are doubtless due in large measure to the increasing importance of the Southern states in cotton manufacturing and to changing conditions in the South. The consumption of cotton per spindle was lower in the New England states than in the Southern states, which is partly attributable to differences in the grade of yarn made.

Dyeing and finishing and contract work.—Table 36 shows, by states, the number of establishments bleaching, dyeing, or printing their own products in 1909, the number performing these processes for others, and the number doing custom spinning or weaving.

Table 36 — STATE.	ESTABLISHMENTS IN THE COTTON MANUFACTURING INDUSTRY: 1909. Total number.	Bleaching, dyeing, or printing— Their own goods.	For others.	Doing custom spinning or weaving.
United States	1,324	315	27	19
Alabama	51	4	.....	.....
Connecticut	52	14	1	1
Georgia	116	31	.....	.....
Illinois	5	3	1	.....
Indiana	7	2	.....	.....
Kentucky	4	2	.....	.....
Maine	16	3	.....	.....
Maryland	16	2	.....	.....
Massachusetts	182	48	9	4
Mississippi	14	5	.....	.....
New Hampshire	21	9	2	.....
New Jersey	26	8	2	.....
New York	47	21	3	.....
North Carolina	281	70	3	.....
Ohio	4	1	.....	.....
Pennsylvania	175	49	3	8
Rhode Island	106	19	3	5
South Carolina	147	19	.....	.....
Virginia	10	2	.....	.....
All other states	44	3	.....	1

Of the 1,324 establishments in the cotton manufacturing industry in 1909, 315 reported that they bleached, dyed, or printed their own goods, 27 that they performed these processes for others as well as upon their own products, and 19 that they did custom spinning or weaving. Of the other establishments, some made only products requiring no bleaching, dyeing, or printing, while others had the work done under contract, either by other establishments in the industry or by establishments in other industries, particularly in the industry designated "dyeing and finishing textiles."

The total expenditure of the cotton mills for contract work of all kinds in 1909 was $2,157,069. This expenditure is distributed, by states, in Table 46.

SPECIAL STATISTICS FOR THE COTTON SMALL WARES BRANCH OF THE INDUSTRY.

Table 37 summarizes the statistics of the cotton small wares branch of the industry for 1909, 1904, and 1899.

Table 37

	COTTON SMALL WARES BRANCH OF THE INDUSTRY.					
	Number or amount.			Per cent of increase.[1]		
	1909	1904	1899	1899-1909	1904-1909	1899-1904
Number of establishments	116	77	82	41.5	50.6	−6.1
Persons engaged in the industry	8,233	5,724	5,206	58.1	43.8	10.0
Proprietors and firm members	74	65	85	−12.9	13.8	−23.5
Salaried employees	461	243	189	143.9	89.7	28.6
Wage earners (average number)	7,698	5,416	4,932	56.1	42.1	9.8
Primary horsepower	10,412	7,495	5,976	74.2	38.9	25.4
Capital	$13,824,772	$8,010,491	$6,397,385	116.1	72.6	25.2
Expenses	11,768,684	6,918,456	5,302,738	119.5	70.1	29.0
Services	3,765,968	2,154,224	1,790,067	110.4	74.8	20.3
Salaries	696,540	326,124	226,625	207.4	113.6	43.9
Wages	3,069,428	1,828,100	1,563,442	96.3	67.9	16.9
Materials	6,995,966	4,207,655	3,110,137	124.9	66.3	35.3
Miscellaneous	1,006,750	556,577	462,534	117.7	80.9	20.3
Value of products	13,174,111	8,016,486	6,394,164	106.0	64.3	25.4
Value added by manufacture (value of products less cost of materials)	6,178,145	3,808,831	3,284,027	88.1	62.2	16.0

[1] A minus sign (−) denotes decrease.

A considerable number of establishments which use cotton or cotton yarn as their chief material do not make piece goods, but confine their operations mainly to the manufacture of narrow fabrics, such as braids, tapes, binding, shoe laces, and corset laces, incidentally spinning small quantities of yarn for sale.

These establishments constitute the cotton small wares branch of the cotton manufacturing industry. Except as otherwise noted, the data relating to these establishments have been included with those for the other cotton mills in the statistics heretofore presented, but they are shown separately for 1909, 1904, and 1899 in Table 37. It should be borne in mind that large quantities of cotton small wares are also manufactured by establishments making piece goods as well.

From 1899 to 1904 the number of establishments in the cotton small wares branch of the industry decreased from 82 to 77, but in 1909 these establishments numbered 116. The average number of wage earners increased 56.1 per cent during the decade, and the value of products increased 106 per cent during the same period.

Summary, by states.—Table 38 summarizes, by states, the important statistics relating to the cotton small wares branch of the cotton manufacturing industry for 1909, 1904, and 1899.

COTTON SMALL WARES—COMPARATIVE STATISTICS, BY STATES: 1909, 1904, AND 1899.

Table 38

STATE.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY. Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).	Primary horsepower.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
								Expressed in thousands.					
United States	1909	116	8,233	74	461	7,698	10,412	$13,825	$697	$3,069	$6,996	$13,174	$6,178
	1904	77	5,724	65	243	5,416	7,495	8,010	326	1,828	4,208	8,016	3,808
	1899	82	5,206	85	189	4,932	5,976	6,397	227	1,563	3,110	6,394	3,284
Connecticut	1909	4	84	4	9	71	74	98	9	25	29	89	60
	1904	3	53	1	8	44	339	70	12	16	133	186	53
	[1] 1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts	1909	24	986	20	70	896	1,626	1,391	94	365	989	1,711	722
	1904	19	668	13	48	607	1,177	883	55	203	501	898	397
	1899	14	465	11	24	430	800	528	32	151	321	647	326
New Jersey	1909	8	164	6	16	142	299	440	16	54	122	272	150
	[1] 1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1899	5	180	1	16	163	264	410	19	44	231	390	159
New York	1909	9	342	12	26	304	288	556	47	134	304	603	299
	1904	3	236	1	24	211	350	548	33	71	242	416	174
	1899	18	664	22	42	600	290	551	36	163	461	840	379
Pennsylvania	1909	33	2,477	24	148	2,305	1,775	4,105	222	818	2,406	4,232	1,826
	1904	21	1,565	27	64	1,474	1,041	2,169	85	488	1,110	2,163	1,053
	1899	24	1,528	34	50	1,444	969	1,946	65	455	938	2,026	1,088
Rhode Island	1909	29	3,567	8	138	3,421	5,307	6,306	221	1,456	2,578	5,191	2,613
	1904	26	2,939	13	85	2,841	4,082	3,950	130	1,000	1,996	3,945	1,949
	1899	16	2,270	13	48	2,209	3,313	2,877	68	736	1,096	2,380	1,284
All other states	1909	9	613	.....	54	559	1,043	929	88	217	568	1,076	508
	1904	5	263	10	14	239	506	390	11	50	226	408	182
	1899	5	99	4	9	86	340	85	7	14	63	111	48

[1] Included under "all other states."

In 1909 the largest number of establishments was reported for Pennsylvania, with Rhode Island ranking next, but in value of products the latter state ranked first. Three states show a very considerable increase in value of products between 1899 and 1909, namely, Massachusetts (164.5 per cent), Rhode Island (118.1 per cent), and Pennsylvania (108.9 per cent).

Materials.—Table 39 shows statistics of the materials used by establishments in the cotton small wares branch of the industry for 1909, 1904, and 1899.

Table 39 — MATERIAL.	MATERIALS USED IN THE COTTON SMALL WARES BRANCH OF THE INDUSTRY. 1909	1904	1899
Total cost	$6,995,966	$4,207,655	$3,110,137
Cotton:			
Domestic—			
Bales	6,331	6,676	7,213
Pounds	3,082,270	3,362,434	3,040,878
Cost	$359,106	$390,805	$264,541
Yarns:			
Cotton—			
Pounds	18,346,525	13,816,858	10,860,648
Cost	$4,700,513	$3,009,717	$1,873,032
Silk—			
Pounds	100,662	23,924	43,709
Cost	$350,834	$98,617	$134,296
Spun silk—			
Pounds	37,617	19,090	9,852
Cost	$112,912	$58,624	$25,394
Other yarns—			
Pounds	480,013	380,148	1,040,103
Cost	$252,385	$66,975	$204,331
Waste:			
Pounds	625,526	156,000	399,500
Cost	$59,138	$12,480	$2,310
Starch	$18,681	$15,565	$3,908
Chemicals and dyestuffs	$77,337	$36,032	$46,339
All other materials	$1,065,060	$518,840	$495,986

The total cost of materials used increased from $3,110,137 in 1899 to $4,207,655 in 1904 and to $6,995,966 in 1909, an increase of 124.9 per cent for the decade. The most important of the materials is cotton yarn purchased as such, the consumption of which increased from 10,860,648 pounds in 1899 to 18,346,525 pounds in 1909, or 68.9 per cent. During the same period the cost increased 151 per cent, forming 60.2 per cent of the total cost of materials in 1899 and 67.2 per cent in 1909. The consumption of silk yarn and spun silk yarn also increased greatly from 1899 to 1909, but the quantity of raw cotton used shows a steady decrease for the decade.

Products.—Table 40 gives, so far as possible without the disclosure of individual operations, the quantity and value of the principal products of the cotton small wares branch of the cotton manufacturing industry for 1909, 1904, and 1899. It shows also the total quantity of yarn spun (including that used in further processes of manufacture), classified according to degree of fineness.

Table 40 — PRODUCT.	PRODUCTS OF THE COTTON SMALL WARES BRANCH OF THE INDUSTRY. 1909	1904	1899
Total value	$13,174,111	$8,016,436	$6,394,164
Tape and webbing	$5,338,468	$4,010,942	$2,192,601
Yarns for sale:			
Pounds	150,428	162,000	116,009
Value	$90,270	$54,300	$27,403
Waste for sale:			
Pounds	643,701	314,538	761,857
Value	$15,306	$13,020	$11,336
Other cotton products	$7,661,037	$3,637,316	$2,901,186
All other products	$63,021	$300,908	$1,261,638
Yarn produced [2] ..... pounds	2,637,021	2,410,268	(1)
No. 20 and under (coarse)	1,127,514	344,135	(1)
No. 21 to No. 40 (medium)	1,432,464	2,066,133	(1)
No. 41 to No. 60 (fine)	77,043	.....	(1)

[1] Not reported. [2] Including that used in the further processes of manufacture.

The value of tape and webbing constituted 40.5 per cent of the total value of products in 1909 and 34.3 per cent in 1899. The total quantity of yarn spun increased from 2,410,268 pounds in 1904 to 2,637,021 pounds in 1909, or 9.4 per cent, the quantity of coarse yarn made in 1909 being more than three times as great as in 1904, while the quantity of medium yarn decreased 30.7 per cent. No fine yarn was reported for 1904 and only a small quantity for 1909.

Spindles and looms.—Table 41 shows the number of spindles and of looms (including braiders) employed in the cotton small wares branch of the cotton manufacturing industry in 1909, 1904, and 1899, for the United States and for selected states.

Table 41 — STATE.	Census.	COTTON SMALL WARES BRANCH OF THE INDUSTRY. Spindles.	Looms (including braiders).
United States	**1909**	**29,808**	**32,086**
	1904	**39,530**	**18,386**
	1899	**42,600**	**5,070**
Massachusetts	1909	2,640	5,501
	1904	.....	5,506
	1899	.....	302
Pennsylvania	1909	112	5,275
	1904	250	3,167
	1899	.....	1,684
Rhode Island	1909	25,000	18,492
	1904	36,280	8,288
	1899	39,900	2,826
All other states	1909	2,056	2,818
	1904	3,000	1,425
	1899	2,700	258

The total number of spindles in 1909 was 29,808, as compared with 42,600 in 1899, a decrease of 30 per cent during the decade. Rhode Island reported 25,000 spindles in 1909, or 83.9 per cent of the total. The exceedingly small number of spindles reported by Pennsylvania is worthy of note, as indicating the use of purchased yarns in most of the cotton small wares mills of that state. While there was a considerable decrease during the decade in the total number of spindles reported, a great gain is shown in the number of looms and braiders, which was 32,086 in 1909; of this number, 26,382 were braiders. Of the total number of looms and braiders reported for 1909, 57.6 per cent were in Rhode Island. Of the 26,382 braiders in 1909, Rhode Island reported 16,871, Massachusetts 4,905, Pennsylvania 2,130, and all other states 2,476.

The spinning of the yarn has apparently become less and less a factor in this branch of the industry, the manufacturers preferring to buy the yarn of other establishments.

IMPORTS AND EXPORTS OF COTTON AND COTTON GOODS.

Table 42 shows, for each census year from 1850 to 1900, and for each year from 1905 to 1909, the production, net imports, consumption, and exports of raw cotton.

Table 42

YEAR.	QUANTITY (EQUIVALENT 500-POUND BALES).				YEAR.	QUANTITY (EQUIVALENT 500-POUND BALES).			
	Production.[1]	Net imports.[2]	Consumption.[2]	Exports.[2]		Production.[1]	Net imports.[2]	Consumption.[2]	Exports.[2]
1909	13,587,306	165,451	5,198,963	8,889,724	1900	9,459,935	134,778	3,687,253	6,167,623
1908	11,375,461	140,869	4,493,028	7,779,508	1890	7,472,511	18,334	2,518,409	4,928,921
1907	13,595,498	202,733	4,974,199	8,825,236	1880	5,466,387	7,578	1,500,688	3,742,752
1906	10,804,556	133,464	4,877,465	6,975,494	1870	2,409,597	3,026	706,616	1,937,708
1905	13,679,954	130,182	4,523,208	9,057,397	1860	4,309,642	.....	845,410	3,535,373
					1850	1,975,274	485	575,506	1,270,763

[1] Figures represent the crop grown in the preceding year.

[2] Statistics relate to year ending August 31.

Table 43 shows, for selected years, the imports of cotton manufactures, while Table 44 presents statistics of exports of cotton manufactures corresponding to the statistics of imports given in Table 43.

Table 43

YEAR ENDING JUNE 30—	IMPORTS OF COTTON MANUFACTURES, NOT INCLUDING WEARING APPAREL OR KNIT GOODS: 1869-1909								
	Total value.	Cloths.				Embroideries, lace, insertion, trimmings, lace curtains, cords, and gimps (value).	Thread (not on spools), yarns, warps, and warp yarn.		All other manufactures (value).
		Not bleached, dyed, colored, stained, painted, or printed.		Bleached, dyed, colored, stained, painted, or printed.					
		Quantity (square yards).	Value.	Quantity (square yards).	Value.		Quantity (pounds).	Value.	
1909	$51,949,866	2,535,251	$289,843	65,841,357	$9,900,294	$34,368,580	6,026,295	$3,306,172	$4,084,977
1908	54,126,327	3,609,469	344,941	75,876,055	12,079,919	33,611,010	7,036,442	3,921,111	4,169,346
1907	60,297,885	2,406,910	280,298	80,233,421	12,727,769	39,756,502	6,940,261	3,583,627	3,949,689
1906	52,909,043	1,878,528	216,711	72,778,701	11,719,880	34,022,469	5,111,644	2,598,724	4,351,259
1905	40,388,794	1,309,358	155,695	46,210,012	7,794,179	25,911,684	5,025,331	2,204,154	4,323,082
1904	40,974,520	1,415,512	159,102	50,032,691	8,144,383	24,848,764	5,060,533	2,261,924	5,500,347
1903	44,057,108	1,322,007	156,545	59,998,185	9,013,092	25,110,081	5,764,937	2,421,729	7,355,661
1902	37,440,098	772,011	86,386	45,440,314	6,934,393	22,449,314	5,096,190	1,921,748	6,048,257
1901	33,254,762	1,612,267	196,949	39,150,760	5,928,653	20,235,299	3,725,256	1,746,723	5,147,138
1900	35,349,246	3,061,790	357,604	61,986,063	8,156,301	19,208,105	5,272,491	2,098,958	5,528,218
1899	26,691,859	1,250,932	107,023	51,196,236	6,649,014	14,550,015	2,325,974	840,810	4,535,988
1889	20,033,005	2,577,230	203,100	27,808,959	3,696,194	9,591,943	1,744,852	860,703	5,081,065
1879	14,930,975	[1] 6,673,088	[1] 789,359	5,195,126	707,064	.....	.....	.....	[2] 13,434,552
1869	16,474,036	[1] 26,860,638	[1] 3,533,132	21,480,786	2,960,918	.....	.....	.....	[3] 9,979,986

[1] Includes bleached goods. [2] Includes jeans, denims, and drillings to the value of $141,066. [3] Includes jeans, denims, and drillings to the value of $991,051.

Table 44

YEAR ENDING JUNE 30—	EXPORTS OF DOMESTIC MANUFACTURES OF COTTON, NOT INCLUDING WEARING APPAREL OR KNIT GOODS: 1869-1909						
	Total value.	Cloths.				Yarn (value).	All other manufactures (value).
		Uncolored.		Dyed, colored, or printed.			
		Quantity (square yards).	Value.	Quantity (square yards).	Value.		
1909	$27,631,809	246,123,197	$14,527,501	121,508,345	$7,165,579	$551,062	$5,387,757
1908	20,476,279	125,729,841	8,459,064	80,264,971	5,809,019	400,600	5,807,596
1907	27,511,186	206,054,287	13,737,165	120,286,042	7,502,082	328,638	5,943,301
1906	48,605,458	594,517,108	36,252,553	116,975,946	6,929,307	365,452	5,058,146
1905	46,188,428	566,584,218	33,995,134	127,916,497	7,325,408	310,237	4,557,649
1904	19,703,293	156,060,758	9,256,922	91,319,979	5,430,277	172,286	4,834,808
1903	29,616,168	325,867,530	16,909,436	169,511,667	8,443,148	(1)	4,263,584
1902	30,017,770	358,004,521	18,501,908	146,769,202	7,359,288	(1)	4,156,574
1901	18,617,882	135,554,132	7,581,812	115,949,219	6,554,225	(1)	4,481,845
1900	22,400,479	264,314,474	13,229,443	87,880,515	4,839,491	(1)	4,331,545
1899	22,291,075	303,063,083	13,748,619	108,940,972	5,221,278	(1)	3,321,178
1889	9,910,841	77,596,862	5,577,401	40,856,329	2,885,373	(1)	1,448,067
1879	10,853,950	84,081,319	6,288,131	45,116,058	3,209,285	(1)	1,356,534
1869	5,874,222	(2)	(2)	(2)	(2)	(2)	(2)

[1] Included under "all other manufactures."

[2] Not reported separately.

DETAILED STATE TABLES.

The principal statistics secured concerning the cotton manufacturing industry as a whole are presented, by states, in Tables 45 and 46.

Table 45 shows, for 1909, 1904, and 1899, the number of establishments, number of persons engaged in the industry, primary horsepower, capital invested, salaries, wages, cost of materials, value of products, and value added by manufacture.

Table 46 gives more detailed statistics for the industry for 1909 only.

COTTON GOODS, INCLUDING COTTON SMALL WARES—COMPARATIVE STATISTICS, BY STATES, 1909, 1904, AND 1899.

Table 45 STATE.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY. Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).	Primary horsepower.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture (value of products less cost of materials).
								Expressed in thousands.					
United States	1909	1,324	387,771	377	8,514	378,880	1,296,517	$822,238	$14,412	$132,859	$371,009	$628,392	$257,383
	1904	1,154	323,287	432	6,981	315,874	986,604	613,111	10,238	96,206	286,255	450,468	164,213
	1899	1,055	308,237	474	4,902	302,861	795,634	467,240	7,350	86,690	176,552	339,200	162,648
Alabama	1909	51	13,041	.....	310	12,731	42,637	30,954	460	3,454	14,373	22,212	7,839
	1904	46	11,740	1	259	11,480	27,505	24,758	343	2,458	12,011	16,760	4,749
	1899	31	8,491	.....	159	8,332	22,997	11,639	198	1,482	4,826	8,153	3,327
Connecticut	1909	52	14,887	26	501	14,360	58,137	39,243	778	5,666	11,960	24,232	12,272
	1904	52	13,479	18	350	13,111	47,950	31,159	516	4,053	10,203	18,425	8,222
	1899	[1] 55	13,494	19	281	13,194	41,134	27,352	396	4,394	7,536	15,489	7,953
Georgia	1909	116	28,495	12	680	27,803	92,979	64,651	1,005	7,721	32,049	48,037	15,988
	1904	[2] 103	24,701	13	558	24,130	77,435	42,350	726	5,313	23,832	35,174	11,342
	1899	[2] 67	18,625	10	332	18,283	39,307	24,158	431	3,567	11,113	18,458	7,345
Illinois	1909	5	1,397	.....	78	1,319	2,020	1,979	105	522	1,102	2,111	1,009
	1904	3	548	2	25	521	1,666	1,869	27	187	295	613	318
	[3] 1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indiana	1909	7	1,621	.....	39	1,582	5,315	2,473	105	478	1,670	2,502	832
	1904	5	1,208	.....	34	1,174	5,250	2,277	51	302	1,140	1,484	344
	1899	[2] 4	1,442	3	18	1,421	3,994	1,678	34	324	701	1,335	634
Kentucky	1909	4	1,066	1	21	1,044	3,159	1,917	36	307	1,188	1,902	714
	1904	4	1,056	.....	25	1,031	3,085	2,156	25	243	1,165	1,565	400
	1899	6	1,375	.....	24	1,351	3,605	1,868	34	280	972	1,664	692
Maine	1909	16	14,783	.....	149	14,634	53,823	25,653	357	5,718	11,390	21,932	10,542
	1904	15	12,582	.....	200	12,382	37,236	21,643	342	4,037	9,173	15,406	6,233
	1899	15	13,824	1	100	13,723	39,608	21,087	232	4,330	7,036	14,631	7,595
Maryland	1909	16	4,077	3	108	3,966	13,128	9,024	152	1,139	4,012	5,522	1,510
	1904	12	4,101	8	100	3,993	11,995	6,955	93	934	3,873	5,245	1,372
	1899	14	4,818	7	84	4,727	10,864	7,709	133	1,186	3,039	5,423	2,384
Massachusetts	1909	182	110,086	43	1,729	108,914	362,043	214,017	3,450	45,117	105,157	186,462	81,305
	1904	161	90,239	47	1,552	88,640	296,244	174,552	2,714	32,555	80,268	130,069	49,801
	1899	177	93,667	48	1,104	92,515	276,161	156,289	2,046	32,479	54,389	111,125	56,736
Mississippi	1909	14	2,720	.....	75	2,645	8,045	5,336	105	695	2,042	3,102	1,060
	1904	14	2,225	.....	64	2,161	5,867	4,520	79	518	1,649	2,463	814
	1899	6	1,723	2	46	1,675	3,365	2,210	60	340	767	1,473	706
New Hampshire	1909	21	22,504	3	211	22,290	83,966	29,176	411	8,938	19,124	33,602	14,478
	1904	[2] 25	20,044	4	309	19,731	75,540	31,176	516	7,373	18,497	29,541	11,044
	1899	23	20,629	.....	175	20,454	68,473	29,262	371	6,759	11,960	22,998	11,038
New Jersey	1909	26	6,894	13	243	6,638	17,288	17,824	392	2,577	8,565	13,729	5,164
	1904	[2] 17	5,501	4	135	5,362	15,518	14,290	230	2,022	5,143	8,579	3,436
	1899	25	5,849	11	157	5,681	14,317	14,399	269	1,931	3,158	6,931	3,773
New York	1909	47	11,032	23	346	10,663	33,354	23,137	592	4,166	11,726	20,352	8,626
	1904	33	9,031	13	218	8,800	25,812	18,474	314	3,071	8,645	13,434	4,789
	1899	52	9,504	47	198	9,259	24,044	15,060	263	2,746	5,718	10,788	5,070
North Carolina	1909	281	48,525	42	1,252	47,231	164,609	96,993	1,610	12,131	48,688	72,680	23,992
	1904	212	37,292	33	903	36,356	92,215	57,413	973	7,504	33,025	47,254	14,229
	1899	177	30,973	41	659	30,273	56,980	33,012	587	5,127	17,387	28,373	10,986
Ohio	1909	4	195	1	17	177	446	301	24	52	234	395	161
	1904	[2] 3	117	4	6	107	365	190	14	27	89	154	65
	1899	[2] 3	119	1	12	106	345	168	11	28	142	231	89
Pennsylvania	1909	175	17,386	156	937	16,293	24,589	33,692	1,612	7,034	18,757	33,917	15,160
	1904	165	16,099	209	627	15,263	22,611	27,174	918	5,943	14,322	26,300	11,978
	1899	178	17,817	241	565	17,011	23,403	24,332	742	6,057	13,177	25,448	12,271
Rhode Island	1909	106	29,488	46	656	28,786	95,278	67,679	1,330	11,797	25,401	50,313	24,912
	1904	99	25,425	56	611	24,758	75,607	47,477	1,021	8,890	19,666	34,573	14,907
	1899	87	24,440	28	380	24,032	67,309	40,151	734	8,033	11,697	26,436	14,739
South Carolina	1909	147	46,342	3	885	45,454	187,716	125,549	1,460	11,661	41,303	65,930	24,627
	1904	127	38,038	6	761	37,271	133,397	82,337	1,008	7,702	34,308	49,438	15,130
	1899	80	30,621	5	415	30,201	73,042	39,259	537	5,067	17,264	29,724	12,460
Tennessee	1909	17	3,164	3	83	3,078	11,129	7,454	105	857	3,344	5,201	1,857
	1904	16	2,362	2	66	2,294	8,301	5,113	80	531	2,241	3,561	1,320
	1899	17	2,158	3	47	2,108	5,525	3,768	54	423	1,143	1,995	852
Texas	1909	13	1,633	.....	43	1,590	4,835	4,283	61	501	1,793	2,815	1,022
	1904	13	1,029	.....	36	993	3,452	2,729	36	270	1,018	1,587	569
	1899	4	1,005	.....	21	984	2,950	2,227	31	254	641	1,200	559
Virginia	1909	10	5,123	.....	66	5,057	19,750	14,070	130	1,480	4,699	7,490	2,791
	1904	10	3,501	.....	45	3,456	9,340	7,067	65	884	2,802	4,484	1,682
	1899	7	2,963	.....	32	2,931	5,020	4,403	50	669	1,412	2,655	1,243
All other states	1909	14	2,712	2	85	2,625	12,271	6,833	132	848	2,432	3,954	1,522
	1904	19	2,969	12	97	2,860	10,213	7,432	138	789	2,890	4,359	1,469
	1899	27	4,700	7	93	4,600	13,385	7,209	137	1,214	2,474	4,670	2,196

[1] Excluding statistics for two establishments, to avoid disclosure of individual operations.
[2] Excluding statistics for one establishment, to avoid disclosure of individual operations.
[3] Figures can not be shown without disclosing individual operations.

COTTON GOODS, INCLUDING COTTON SMALL WARES—DETAILED STATISTICS, BY STATES: 1909.

Table 46

STATE.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY. Total.	Proprietors and firm members.	Salaried officers, superintendents and managers.	Clerks. Male.	Clerks. Female.	Wage earners. Average number.	Wage earners. Number, 15th day of— Maximum month.	Wage earners. Number, 15th day of— Minimum month.	WAGE EARNERS—DEC. 15, OR NEAREST REPRESENTATIVE DAY. Total.	16 and over. Male.	16 and over. Female.	Under 16. Male.	Under 16. Female.	Primary horsepower.
United States.	**1,324**	**387,771**	**377**	**4,084**	**3,413**	**1,017**	**378,880**	**De 383,529**	**Ja 374,433**	**387,698**	**197,420**	**150,057**	**21,024**	**19,197**	**1,296,517**
Alabama	51	13,041	.....	184	110	16	12,731	De 13,061	My 12,539	13,282	6,668	4,125	1,281	1,208	42,637
Connecticut	52	14,887	26	193	202	106	14,360	De 14,556	Jy 14,199	14,760	8,238	5,810	331	381	58,137
Georgia	116	28,495	12	375	252	53	27,803	No 28,218	Jy 26,990	28,495	14,993	9,219	2,333	1,950	92,979
Illinois	5	1,397	.....	33	26	19	1,319	De 1,454	Ja 1,212	1,454	445	911	43	55	2,020
Indiana	7	1,621	.....	24	12	3	1,582	Fe 1,636	De 1,518	1,522	438	957	43	84	5,315
Kentucky	4	1,066	1	13	5	3	1,044	Je 1,069	Au 976	1,058	419	557	39	43	3,159
Maine	16	14,783	.....	84	55	10	14,634	Au 14,922	Ja 14,474	14,626	6,957	6,819	477	373	53,823
Maryland	16	4,077	3	37	58	13	3,966	No 4,110	My 3,652	4,133	1,720	1,755	357	301	13,128
Massachusetts	182	110,686	43	750	711	268	108,914	De 110,781	Ja 106,670	111,253	56,914	47,992	3,101	3,246	362,043
Mississippi	14	2,720	.....	44	25	6	2,645	Mh 2,792	De 2,506	2,716	1,031	1,134	201	350	8,045
New Hampshire	21	22,504	3	60	112	39	22,290	Oc 22,466	De 21,941	22,016	10,935	10,643	265	173	83,966
New Jersey	26	6,894	13	83	136	24	6,638	No 6,826	Jy 6,500	6,816	2,600	3,607	270	339	17,288
New York	47	11,032	23	126	175	45	10,663	Fe 10,881	Oc 10,502	10,848	5,995	4,553	216	84	33,354
North Carolina	281	48,525	42	865	324	63	47,231	De 49,034	Ja 46,184	49,171	25,137	14,731	4,982	4,321	164,609
Ohio	4	195	1	10	4	3	177	Oc 183	Se 172	181	42	135	.....	4	446
Pennsylvania	175	17,386	156	348	449	140	16,293	No[1] 16,709	Fe 15,817	16,866	7,405	8,318	424	719	24,589
Rhode Island	106	29,488	46	279	262	115	28,786	De 29,192	Au 28,342	29,786	15,091	12,894	900	901	95,278
South Carolina	147	46,342	3	443	370	72	45,454	Jy 46,300	Ja 44,609	46,065	26,063	11,386	4,843	3,773	187,716
Tennessee	17	3,164	3	48	31	4	3,078	My 3,120	Se 3,042	3,123	1,389	1,183	277	274	11,129
Texas	13	1,633	.....	24	18	1	1,590	Ja 1,636	No 1,516	1,659	881	543	130	105	4,835
Virginia	10	5,123	.....	26	39	1	5,057	Fe 5,240	Se 4,901	5,098	2,910	1,504	364	320	19,750
All other states[2]	14	2,712	2	35	37	13	2,625	.....	.....	2,770	1,149	1,281	147	193	12,271

STATE.	Capital.	EXPENSES. Total.	Services. Officials.	Services. Clerks.	Services. Wage earners.	Materials. Fuel and rent of power.	Materials. Other.	Miscellaneous. Rent of factory.	Miscellaneous. Taxes, including internal revenue.	Miscellaneous. Contract work.	Miscellaneous. Other.	Value of products.	Value added by manufacture (value of products less cost of materials).
United States	**$822,237,529**	**$554,221,688**	**$10,417,443**	**$3,994,315**	**$132,859,145**	**$13,985,896**	**$357,023,574**	**$442,284**	**$5,754,208**	**$2,157,069**	**$27,587,754**	**$628,391,813**	**$257,382,343**
Alabama	30,954,016	19,829,579	362,070	97,488	3,454,147	445,568	13,927,679	.....	126,735	13,176	1,402,716	22,211,748	7,838,501
Connecticut	39,243,161	19,908,236	530,394	247,399	5,665,836	478,710	11,481,012	37,286	180,927	2,268	1,284,404	24,231,881	12,272,159
Georgia	64,650,706	43,621,506	754,733	250,398	7,721,245	1,020,216	31,028,523	2,736	394,083	107,206	2,342,276	48,036,817	15,988,078
Illinois	1,979,075	1,896,952	60,860	44,043	522,073	30,720	1,071,294	18,800	9,620	.....	139,542	2,111,208	1,009,194
Indiana	2,473,185	2,424,187	91,670	13,156	478,443	51,361	1,618,636	1,200	14,249	.....	155,472	2,501,598	831,601
Kentucky	1,916,512	1,657,054	28,018	7,657	307,479	29,311	1,158,624	1,000	19,985	.....	104,980	1,902,467	714,532
Maine	25,653,089	18,914,496	258,205	98,549	5,717,776	341,762	11,048,717	600	267,037	271,753	910,097	21,932,225	10,541,746
Maryland	9,024,145	5,519,730	96,291	55,988	1,138,766	86,911	3,924,830	4,451	30,259	6,681	175,553	5,522,293	1,510,552
Massachusetts	214,017,247	164,686,952	2,614,677	835,114	45,117,069	4,041,092	101,115,702	32,045	2,539,622	375,846	8,015,785	186,462,313	81,305,519
Mississippi	5,336,477	2,949,375	69,456	35,975	695,456	101,557	1,940,593	.....	24,701	250	81,387	3,102,398	1,060,248
New Hampshire	29,176,121	30,176,118	253,490	157,430	8,938,317	712,663	18,411,187	4,282	295,624	198	1,402,927	33,601,830	14,477,980
New Jersey	17,823,899	12,377,650	247,104	144,568	2,577,121	199,252	8,365,481	8,117	67,522	123,804	644,681	13,728,874	5,164,141
New York	23,136,944	18,331,670	368,722	223,542	4,166,333	407,128	11,319,361	29,415	182,024	269,789	1,365,356	20,351,555	8,625,066
North Carolina	96,993,125	65,676,383	1,333,803	276,025	12,130,608	2,170,315	46,517,257	20,192	438,471	423,684	2,366,028	72,680,385	23,992,813
Ohio	300,858	337,519	19,850	4,256	52,411	4,621	229,011	4,662	3,137	.....	19,571	395,175	161,543
Pennsylvania	33,692,380	29,927,595	937,664	674,348	7,034,407	450,989	18,306,036	243,547	71,857	220,998	1,987,740	33,917,033	15,160,008
Rhode Island	67,678,645	40,585,017	991,129	339,263	11,796,733	1,045,147	24,356,092	22,491	350,511	187,046	1,496,605	50,312,597	24,911,358
South Carolina	125,549,218	57,614,650	1,124,211	335,851	11,660,658	1,977,599	39,325,839	.....	599,693	148,186	2,442,613	65,929,585	24,626,147
Tennessee	7,453,807	4,816,321	81,409	23,957	856,837	103,111	3,240,561	.....	32,270	444	477,732	5,200,791	1,857,119
Texas	4,282,742	2,505,607	40,810	19,845	500,694	93,834	1,699,462	.....	13,491	5,650	131,821	2,814,581	1,021,285
Virginia	14,069,606	6,879,766	80,330	49,482	1,479,867	84,418	4,614,605	200	68,291	.....	502,573	7,480,653	2,790,630
All other states[2]	6,832,481	3,585,325	72,547	59,981	846,869	109,611	2,323,072	11,260	24,090	.....	137,886	3,954,806	1,522,123

[1] Same number reported for one or more other months.
[2] All other states embrace: Arkansas, 2 establishments; Delaware, 1; Kansas, 1; Louisiana, 2; Missouri, 2; Vermont, 3; Wisconsin, 3.

HOSIERY AND KNIT GOODS

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THE HOSIERY AND KNIT GOODS INDUSTRY.

GENERAL STATISTICS.

Scope of the industry.—The classification "hosiery and knit goods" covers all establishments engaged primarily in the manufacture of knit goods, irrespective of the kind of materials used. Formerly a distinction was made between those employing power in the operation of the knitting machines and those using hand machines, the statistics for the latter class of establishments being presented under the designation "hand knit goods." The distinction between the two classes of establishments, however, has lost most of its significance because the use of power-driven machines has become almost universal, and the present report covers both classes of establishments. In 1909, 110 establishments were reported as using hand machines, these establishments manufacturing products valued at $1,571,939, giving employment to an average of 567 wage earners, and paying out $213,568 in wages and $824,991 for materials. The relatively small importance of this class of establishments is indicated by the fact that they formed only 8 per cent of the total number of establishments in the industry in the United States, employed only four-tenths of 1 per cent of the total number of wage earners, and reported only eight-tenths of 1 per cent of the total value of products.

Comparison with earlier censuses.—Statistics for the hosiery and knit goods industry were first obtained at the census of 1849, when 85 establishments were reported, with products valued at $1,028,102. In 1859, 197 establishments were reported, with products valued at $7,280,606. Table 1 summarizes the statistics of the industry for each census from 1869 to 1909, inclusive. The financial figures for 1869 are given in currency, which at that time was worth only about 80 cents, gold, to the dollar. For strict comparison, therefore, these figures should be reduced about 20 per cent.

Table 1 — HOSIERY AND KNIT GOODS INDUSTRY.

	Number or amount.						Per cent of increase.[1]					
	1909	1904	1899	1889	1879	1869	1899-1909	1904-1909	1899-1904	1889-1899	1879-1889	1869-1879
Number of establishments	1,374	1,144	1,006	824	398	248	36.6	20.1	13.7	22.1	107.0	60.5
Persons engaged in the industry	136,130	109,489	(2)	(2)	(2)	(2)	.....	24.3	.....	.....	.....	.....
Proprietors and firm members	1,134	1,067	(2)	(2)	(2)	(2)	.....	6.3	.....	.....	.....	.....
Salaried employees	5,721	4,330	2,831	(2)	(2)	(2)	102.1	32.1	52.9	.....	.....	.....
Wage earners (average number)	129,275	104,092	83,691	59,774	30,699	14,788	54.5	24.2	24.4	(3)	(3)	(3)
Primary horsepower	103,709	78,769	57,346	34,564	11,561	6,498	80.8	31.7	37.4	65.9	199.0	77.9
Capital	$163,641,171	$106,943,072	$82,065,517	$50,086,206	$15,732,201	$10,931,260	99.4	53.0	30.3	61.9	222.2	43.9
Expenses	175,729,583	123,276,675	85,395,367	57,922,723	(2)	(2)	105.8	42.5	44.4	47.4	.....	.....
Services	52,431,680	36,069,758	27,572,657	18,325,261	6,839,195	4,429,085	90.2	45.4	30.8	50.5	167.9	54.4
Salaries	7,691,457	4,455,151	3,138,160	(2)	(2)	(2)	145.1	72.6	42.0	.....	.....	.....
Wages	44,740,223	31,614,607	24,434,497	(2)	(2)	(2)	83.1	41.5	29.4	.....	.....	.....
Materials	110,241,053	76,780,348	51,195,330	35,949,865	15,449,991	9,855,823	115.3	43.6	50.0	42.4	132.7	57.1
Miscellaneous	13,056,850	10,417,569	6,627,380	3,647,597	(2)	(2)	97.0	25.3	57.2	81.7	.....	.....
Value of products	200,143,527	137,076,454	95,833,692	67,446,788	29,613,581	18,411,564	108.8	46.0	43.0	42.1	127.8	60.8
Value added by manufacture (value of products less cost of materials)	89,902,474	60,287,106	44,638,362	31,496,923	14,163,590	8,575,741	101.4	49.1	35.1	41.7	122.4	65.2

[1] Where percentages are omitted, comparable figures are not available. [2] Comparable figures not available. [3] Figures not strictly comparable.

There were in 1909, 1,374 establishments in the hosiery and knit goods industry, in which 136,130 persons were engaged, of whom 129,275 were wage earners. The amount paid in salaries and wages was $52,431,680. The value of products was $200,143,527; the cost of materials, $110,241,053, equal to 55.1 per cent of the value of products; and the value added by manufacture $89,902,474. Between 1899 and 1909 the number of wage earners increased 54.5 per cent, while the cost of materials, value of products, and value added by manufacture more than doubled. At least part of the increase shown in cost of materials and value of products, however, is doubtless attributable to increased prices.

The growth of the industry has been continuous throughout the period covered by Table 1, each census showing substantial increases as compared with that preceding. The number of establishments reported for 1909 was more than five times as great as in 1869 and the value of products nearly eleven times as great. The greatest relative growth took place during the decade 1879-1889, each item for which comparable

figures can be presented showing a greater percentage of increase for this decade than for any other covered by the table.

As the proprietors and firm members were not reported separately prior to 1899, it is probable that, in the case of small establishments, a considerable number were included with the wage earners. Salaried employees were also included to some extent with wage earners at the earlier censuses. The statistics of wage earners for the censuses of 1899, 1904, and 1909 are therefore more exactly comparable than are those for earlier censuses.

Summary, by states.—Table 2 summarizes, by states, the more important statistics of the industry, the states being arranged according to the value of products reported for 1909. In determining the rank of the states, all states are considered, whether or not they are shown separately in the table; hence some omissions occur in the several series of numbers indicating rank, as certain states included under "all other states" held a higher rank than some of the states for which separate figures are given.

The hosiery and knit goods industry is widely distributed throughout the United States, one or more establishments being reported from 38 of the 48 states. New York is the most important state, ranking first in value of products and value added by manufacture at the censuses of both 1909 and 1904. In the number of wage earners employed, however, New York ranked second in 1909, although it ranked first in 1904. The number of wage earners employed in the industry in the state increased 35 per cent during the decade ending with 1909, and the value of products increased 86.3 per cent. In 1909 the value of products for New York represented more than one-third of the total for the industry in the United States.

Pennsylvania ranked first in the number of wage earners employed in 1909 and second in value of products and value added by manufacture. Massachusetts ranked third in all three items.

Table 2 — HOSIERY AND KNIT GOODS INDUSTRY.

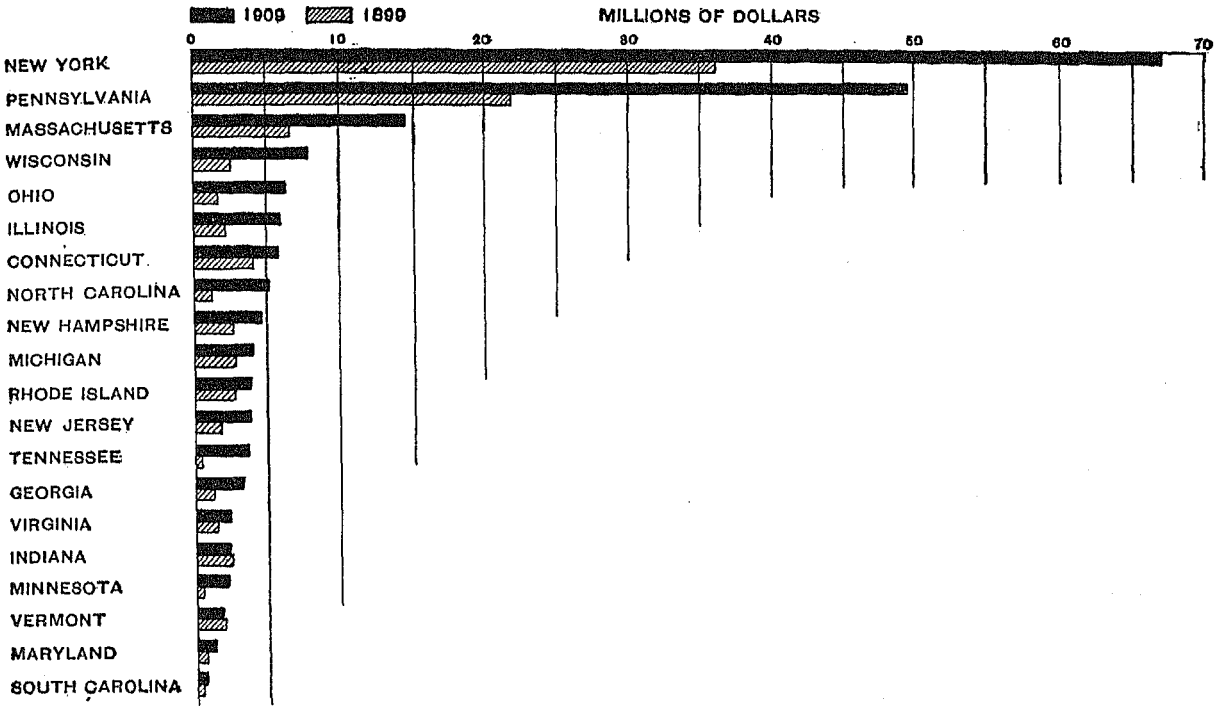
STATE.	Number of establishments: 1909	Wage earners.				Value of products.				Value added by manufacture.				Per cent of increase.[1]								
		Average number: 1909	Per cent of total: 1909	Rank.		Amount: 1909	Per cent of total: 1909	Rank.		Amount: 1909	Per cent of total: 1909	Rank.		Wage earners.			Value of products.			Value added by manufacture.		
				1909	1904			1909	1904			1909	1904	1899-1909	1904-1909	1899-1904	1899-1909	1904-1909	1899-1904	1899-1909	1904-1909	1899-1904
United States.	1,374	129,275	100.0	.....	.....	$200,143,527	100.0	.....	.....	$89,902,474	100.0	.....	.....	54.5	24.2	24.4	108.8	46.0	43.0	101.4	49.1	35.1
New York	360	35,950	27.8	2	1	67,130,296	33.5	1	1	28,452,925	31.6	1	1	35.0	22.4	10.3	86.3	44.9	28.0	80.5	57.1	14.9
Pennsylvania	464	38,206	29.6	1	2	49,657,506	24.8	2	2	22,439,555	25.0	2	2	77.0	35.6	30.5	126.4	61.2	40.5	104.1	51.9	34.4
Massachusetts	65	9,941	7.7	3	3	14,736,025	7.4	3	3	7,764,419	8.6	3	3	48.8	22.4	21.0	121.9	46.0	52.0	108.5	53.0	36.3
Wisconsin	61	4,282	3.3	5	4	7,843,389	3.9	4	5	3,956,193	4.4	4	4	56.8	0.7	55.8	212.7	57.5	98.5	199.2	47.6	102.8
Ohio	39	3,149	2.4	7	9	6,433,431	3.2	5	6	2,582,012	2.9	7	6	121.8	26.5	75.4	305.9	60.9	152.2	233.2	41.9	134.8
Illinois	43	2,913	2.3	10	10	5,946,737	3.0	6	8	2,714,372	3.0	6	9	59.0	24.4	27.8	169.7	59.4	69.2	195.4	73.5	70.3
Connecticut	21	3,340	2.6	6	5	5,800,092	2.9	7	4	2,752,145	3.1	5	5	3.0	−7.1	10.8	43.4	8.0	32.8	49.5	8.1	38.3
North Carolina	62	5,151	4.0	4	7	5,151,692	2.6	8	12	2,139,397	2.4	8	11	244.5	75.0	96.9	403.6	107.4	142.8	312.3	96.5	109.8
New Hampshire	21	3,129	2.4	8	8	4,764,119	2.4	9	7	2,128,446	2.4	9	8	25.6	12.2	12.0	83.7	19.9	53.3	67.0	21.9	37.0
Michigan	35	2,545	2.0	12	6	4,029,105	2.0	10	9	1,982,499	2.2	11	7	1.4	−17.5	23.0	44.4	11.2	29.8	48.8	11.3	33.6
Rhode Island	17	1,774	1.4	15	15	3,865,792	1.9	11	10	1,421,335	1.6	14	12	11.2	3.1	7.8	41.9	15.6	22.8	49.1	32.4	12.6
New Jersey	37	2,506	1.9	13	14	3,810,241	1.9	12	11	1,984,363	2.2	10	10	34.7	42.5	−5.5	113.8	49.5	43.0	157.3	70.0	51.4
Tennessee	22	3,117	2.4	9	13	3,565,436	1.8	13	17	1,445,211	1.6	13	17	510.0	72.2	254.2	802.5	119.0	312.2	889.7	119.3	351.4
Georgia	22	2,743	2.1	11	11	3,232,623	1.6	14	13	1,360,187	1.5	15	14	127.1	41.8	60.2	162.6	39.0	89.0	187.1	49.7	91.8
Virginia	11	1,715	1.3	16	12	2,462,787	1.2	15	14	995,651	1.1	17	15	−7.0	−6.9	−0.2	64.4	16.8	40.7	42.3	27.4	11.7
Indiana	5	1,933	1.5	14	16	2,381,219	1.2	16	15	1,466,586	1.6	12	13	−4.1	12.4	−14.7	−1.8	13.1	−13.2	19.8	46.6	−18.3
Minnesota	10	1,052	0.8	17	21	2,242,694	1.1	17	18	1,156,624	1.3	16	18	259.0	71.1	109.9	447.1	86.4	193.4	443.2	100.5	170.9
Vermont	8	946	0.7	19	18	1,745,670	0.9	18	16	656,622	0.7	18	16	−9.1	3.3	−12.0	−4.9	−12.2	8.4	−8.8	−15.0	7.4
Maryland	11	1,022	0.8	18	19	1,172,325	0.6	19	20	475,170	0.5	19	20	49.9	16.7	28.4	128.0	23.1	85.2	184.4	12.8	152.1
South Carolina	7	839	0.6	20	17	655,340	0.3	20	19	321,470	0.4	21	19	133.7	−20.7	194.7	67.1	−39.3	175.3	108.4	−34.9	220.1
Alabama	6	611	0.5	22	22	591,000	0.3	22	21	277,345	0.3	22	22	.....	21.0	.....	.....	28.5	.....	.....	34.5	.....
California	6	268	0.2	25	24	451,970	0.2	23	22	252,338	0.3	23	21	.....	20.7	.....	229.9	26.6	160.6	.....	19.4	.....
Delaware	4	492	0.4	23	23	448,987	0.2	24	25	166,887	0.2	26	25	−15.5	52.3	−44.5	4.7	51.7	−31.0	−24.1	26.5	−40.0
Utah	11	174	0.1	27	26	419,229	0.2	25	24	126,856	0.1	27	24	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iowa	4	251	0.2	26	29	325,500	0.2	26	26	169,865	0.2	25	26	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maine	5	45	(2)	29	30	78,586	(2)	29	30	46,041	0.1	29	30	.....	.....	.....	.....	.....	.....	.....	.....	.....
All other states	17	1,181	0.9	.....	.....	1,201,136	0.6	.....	.....	667,960	0.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

[1] Percentages are based on figures in Table 30. A minus sign (−) denotes decrease. Percentage not shown where base is less than 100 for wage earners or less than $100,000 for value of products or value added by manufacture, or where comparable figures can not be given without disclosing individual operations.
[2] Less than one-tenth of 1 per cent.

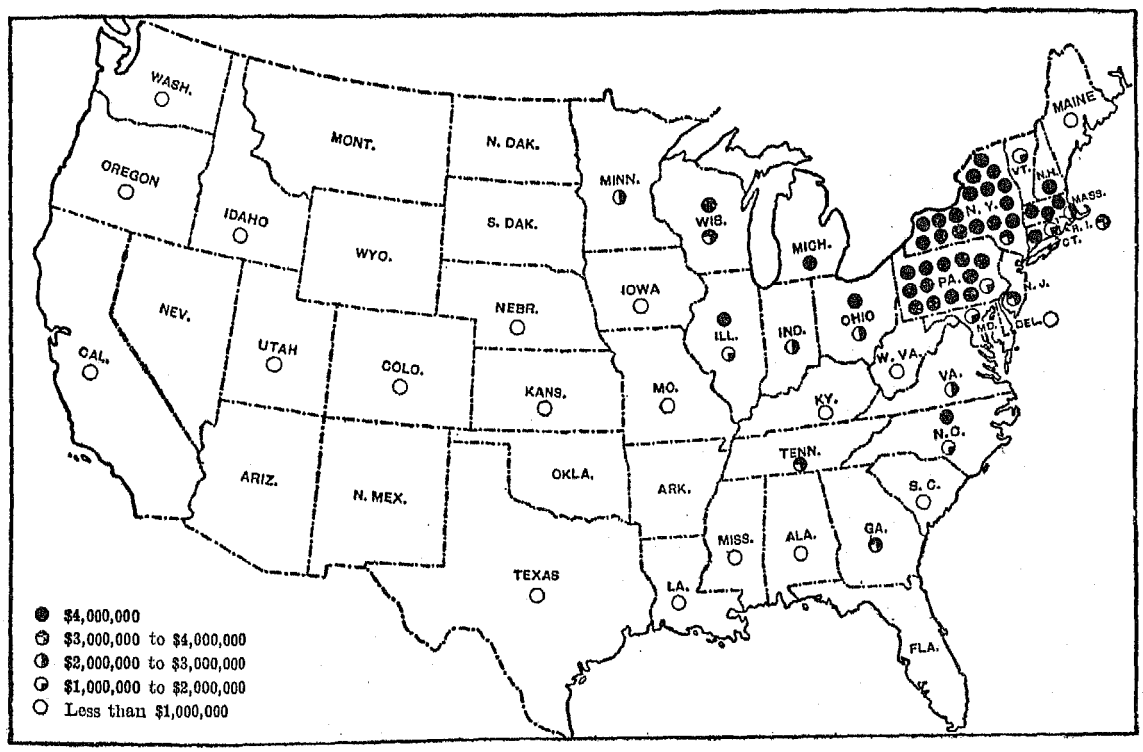
Of the 10 leading states in 1909 on the basis of value of products the 1 showing the largest percentage of increase from 1899 to 1909 (403.6) was North Carolina. Still higher percentages of increase, however, are shown for Tennessee and Minnesota. Vermont and South Carolina are the only states which show a decrease in value of products between 1904 and 1909.

The diagram shows graphically the value of products reported for the most important states in the industry in 1909 and 1899, and the map shows the distribution of the value of products, by states, for 1909.

VALUE OF PRODUCTS FOR THE MOST IMPORTANT STATES: 1909 AND 1899.



DISTRIBUTION OF THE VALUE OF PRODUCTS, BY STATES: 1909.



PERSONS ENGAGED IN THE INDUSTRY.

Summary: 1909.—Table 3 shows for 1909 the number of persons engaged in the industry classified according to occupational status and sex, and in the case of wage earners according to age also. It should be borne in mind that the sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

Table 3 — CLASS.	PERSONS ENGAGED IN THE HOSIERY AND KNIT GOODS INDUSTRY: 1909		
	Total.	Male.	Female.
All classes	**136,130**	**43,950**	**92,180**
Proprietors and officials	3,308	3,125	183
Proprietors and firm members	1,134	1,067	67
Salaried officers of corporations	799	781	18
Superintendents and managers	1,375	1,277	98
Clerks	3,547	2,398	1,149
Wage earners (average number)	129,275	38,427	90,848
16 years of age and over	118,769	35,383	83,386
Under 16 years of age	10,506	3,044	7,462

The average number of persons engaged in the industry during 1909 was 136,130, of whom 129,275, or 95 per cent, were wage earners; 3,308, or 2.4 per cent, proprietors and officials; and 3,547, or 2.6 per cent, clerks, this class including other subordinate salaried employees. Of the total number of persons engaged in the industry, 43,950, or 32.3 per cent, were males, and 92,180, or 67.7 per cent, females. Of the wage earners, 70.3 per cent were females. This is the highest percentage of female wage earners reported for any of the textile industries, the percentage in the silk manufacturing industry being 62.6; in the woolen industry 44.5; and in the cotton goods industry, 43.7. Children under 16 years of age constituted 8.1 per cent of the wage earners in the hosiery and knit goods industry, as compared with 8 per cent in the silk manufacturing industry, 5.7 per cent in the woolen industry, and 10.4 per cent in the cotton goods industry.

The average number of wage earners employed in each state in 1909, 1904, and 1899 is given in Table 30. The distribution of the average number by sex and age is not shown for the individual states, but Table 31 gives such a distribution of the number employed on December 15, or the nearest representative day. The largest number of female wage earners 16 years of age and over (28,045) was employed in Pennsylvania, and the next largest number (24,424) in New York. The largest number of wage earners under 16 years of age (4,515) was also reported from Pennsylvania, but the next largest (1,501) was in North Carolina.

Of the states in which more than 2,000 wage earners were employed in the hosiery and knit goods industry in 1909, Ohio reported the highest proportion of women 16 years of age and over in the total number of wage earners (76.5 per cent). In the other states of this class the percentages were as follows: Michigan, 76.4; Wisconsin, 71.7; Pennsylvania, 69.5; New Hampshire, 66.7; Connecticut, 66.1; New York, 63.6; Illinois, 63.3; New Jersey, 58; Tennessee, 57.6; Georgia, 55.1; Indiana, 54.4; Massachusetts, 53.9; and North Carolina, 49.7.

The proportion of children under 16 years of age was higher in North Carolina (27.7 per cent) than in any other state employing 2,000 or more wage earners in this industry. In the other states of this class the percentages were as follows: Indiana, 19.3; Tennessee, 16.6; Georgia, 16.1; Pennsylvania, 11.2; Wisconsin, 10.6; Ohio, 7; Illinois, 6.8; New Jersey, 4.9; Massachusetts, 4.4; Connecticut, 3.1; Michigan, 2.7; New Hampshire, 1.9; and New York, 1.8.

In order to compare the distribution of the persons engaged in the industry according to occupational status in 1909 with that in 1904, it is necessary to use the classification employed at the earlier census. (See Introduction.) Such a comparison is made in Table 4.

Table 4 — CLASS.	PERSONS ENGAGED IN THE HOSIERY AND KNIT GOODS INDUSTRY.				
	1909		1904		Per cent of increase: 1904-1909
	Number.	Per cent distribution.	Number.	Per cent distribution.	
Total	**136,130**	**100.0**	**109,489**	**100.0**	**24.3**
Proprietors and firm members	1,134	0.8	1,067	1.0	6.3
Salaried employees	5,721	4.2	4,330	4.0	32.1
Wage earners (average number)	129,275	95.0	104,092	95.1	24.2

Salaried employees show the highest percentage of increase for the five-year period and proprietors and firm members the lowest.

Table 5 shows the average number of wage earners in the industry, distributed according to age, and in the case of those 16 years of age and over, according to sex, for 1909, 1904, and 1899.

Table 5 — CLASS.	AVERAGE NUMBER OF WAGE EARNERS IN THE HOSIERY AND KNIT GOODS INDUSTRY.					
	1909		1904		1899	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total	**129,275**	**100.0**	**104,092**	**100.0**	**83,691**	**100.0**
16 years of age and over	118,769	91.9	94,405	90.7	75,022	89.6
Male	35,383	27.4	25,212	24.2	21,197	25.3
Female	83,386	64.5	69,193	66.5	53,825	64.3
Under 16 years of age	10,506	8.1	9,687	9.3	8,669	10.4

Although the actual number of children reported as employed in the hosiery and knit goods industry has shown an increase at each succeeding census, the percentage which they have formed of the total number of wage earners has decreased. The percentage of females 16 years of age and over was approximately the same for 1899 and 1909, though that for 1904 was a little higher.

Wage earners classified according to nature of employment.—Table 6 gives for the United States the number of wage earners employed as spinners, knitters, and finishers, respectively, in 1909 and 1904, classified according to age and sex, with similar statistics for New York and Pennsylvania for 1909 only. It should be noted that the absolute figures for the two censuses are not strictly comparable, owing to the fact that the numbers shown for 1904 are computed averages for the entire year, while those for 1909 are the numbers reported for December 15, or the nearest representative day. The difference between the number of wage earners on this day and the average number for the year 1909, however, was only 7,438, or about 5 per cent of the total; and since there is little variation from month to month in the proportion of the different classes of employees, the figures representing the per cent distribution may be taken as fairly comparable.

In 1909, of the 136,713 wage earners employed on December 15, or the nearest representative day, 2.3 per cent were employed as spinners, 26.5 per cent as knitters, and 39.4 per cent as finishers. In Pennsylvania, where, as shown by Table 21, hosiery constitutes the chief product of the industry, the distribution of the wage earners, according to occupation, is very different from that in New York, where the products are largely shirts and drawers, sweaters, cardigan jackets, etc.

Among the knitters and finishers women 16 years of age and over predominate, constituting, in 1909, 63.5 per cent of all knitters and 81.1 per cent of all finishers, but of the spinners men formed 66.3 per cent. The proportion of children under 16 years of age among spinners was 6.9 per cent, among knitters 8.9 per cent, among finishers 5.9 per cent, and among all other wage earners 10.3 per cent.

Table 6

CLASS.	WAGE EARNERS IN THE HOSIERY AND KNIT GOODS INDUSTRY.[1]				
	Total.	16 years of age and over.		Under 16 years of age.	
		Male.	Female.	Male.	Female.
Total:					
1909	136,713	37,419	88,183	3,219	7,892
1904	[2] 103,715	25,167	68,867	9,681	
Spinners:					
1909	3,133	2,078	839	116	100
1904	2,909	2,011	662	236	
Knitters:					
1909	36,193	9,994	22,973	829	2,397
1904	[2] 28,697	7,783	18,012	2,902	
Finishers:					
1909	53,818	6,991	43,627	857	2,343
1904	[2] 40,362	4,302	33,746	2,320	
All other:					
1909	43,569	18,356	20,744	1,417	3,052
1904	31,747	11,071	16,453	4,223	
Per cent of total:					
Spinners:					
1909	2.3	5.6	1.0	3.6	1.3
1904	2.8	8.0	1.0	2.4	
Knitters:					
1909	26.5	26.7	26.1	25.8	30.4
1904	27.7	30.9	26.2	30.0	
Finishers:					
1909	39.4	18.7	49.5	26.6	29.7
1904	38.9	17.1	49.0	24.0	
All other:					
1909	31.9	49.1	23.5	44.0	38.7
1904	30.6	44.0	23.9	43.6	

CLASS.	WAGE EARNERS IN THE HOSIERY AND KNIT GOODS INDUSTRY.				
	Total.	16 years of age and over.		Under 16 years of age.	
		Male.	Female.	Male.	Female.
NEW YORK, 1909:					
Total	38,419	13,289	24,424	165	541
Spinners	1,288	1,060	222	3	3
Knitters	4,087	2,800	1,246	9	32
Finishers	18,879	1,500	17,102	50	227
All other	14,165	7,929	5,854	103	279
Per cent of total—					
Spinners	3.4	8.0	0.9	1.8	0.6
Knitters	10.6	21.1	5.1	5.5	5.9
Finishers	49.1	11.3	70.0	30.3	42.0
All other	36.9	59.7	24.0	62.4	51.6
PENNSYLVANIA, 1909:					
Total	40,326	7,766	28,045	1,124	3,391
Spinners	357	236	81	27	13
Knitters	16,272	2,897	11,817	338	1,220
Finishers	13,387	2,365	9,609	381	1,032
All other	10,310	2,268	6,538	378	1,126
Per cent of total—					
Spinners	0.9	3.0	0.3	2.4	0.4
Knitters	40.4	37.3	42.1	30.1	36.0
Finishers	33.2	30.5	34.3	33.9	30.4
All other	25.6	29.2	23.3	33.6	33.2

[1] For 1909, the figures are those reported for December 15, or the nearest representative day; for 1904, the average number for the year is given.
[2] Not including the few operatives of this class in establishments using hand machines, for which figures are not available.

Wage earners employed, by months.—Table 7 gives the number of wage earners employed in the hosiery and knit goods industry on the 15th (or the nearest representative day) of each month during the year 1909 for 21 states in which an average of 500 or more wage earners were employed during the year.

The largest number of wage earners reported as employed in the hosiery and knit goods industry during any month of 1909 was 134,540, in November, and the smallest number, 123,308, in January, the minimum number being equal to 91.7 per cent of the maximum. This industry is not subject to any material changes from one part of the year to another, the statistics for 1904 showing even less variation from month to month than those for 1909. The maximum number in 1904, 106,203, was reported for October and the minimum number, 101,212, which was equal to 95.3 per cent of the maximum, for January.

Table 7 shows further that in each of the three principal states in the industry—New York, Pennsylvania, and Massachusetts—the greatest activity in 1909 occurred during the fall and early winter. The months of maximum and minimum employment for 1909 and the number of wage earners reported for these months are given for a larger number of states in Table 31.

Table 7

WAGE EARNERS EMPLOYED IN THE HOSIERY AND KNIT GOODS INDUSTRY: 1909[1]

STATE.	Average number during the year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
United States	**129,275**	**123,308**	**125,181**	**128,052**	**129,317**	**129,270**	**128,899**	**127,845**	**128,231**	**130,329**	**132,997**	**134,540**	**133,340**
Alabama	611	586	581	576	593	599	*560*	575	623	650	661	658	**667**
Connecticut	3,340	3,433	3,418	3,450	3,452	3,483	**3,501**	3,030	*2,918*	3,282	3,442	3,481	3,192
Georgia	2,743	*2,626*	2,656	2,674	2,691	2,706	2,700	2,782	2,777	2,741	2,809	2,852	**2,897**
Illinois	2,913	*2,678*	2,767	2,829	2,852	2,890	2,941	2,943	2,950	3,012	2,960	**3,091**	3,041
Indiana	1,933	*1,782*	1,797	1,828	1,860	1,876	1,896	1,919	1,947	2,021	2,076	**2,100**	2,094
Maryland	1,022	**1,046**	1,029	1,029	1,015	1,016	1,013	1,040	1,021	1,008	*1,002*	1,021	1,021
Massachusetts	9,941	*9,625*	9,677	9,809	9,880	10,028	9,920	9,759	9,752	9,934	10,265	**10,399**	10,234
Michigan	2,545	*2,237*	2,451	2,636	2,608	2,561	2,557	2,390	2,570	2,638	2,655	**2,671**	2,567
Minnesota	1,052	*835*	1,001	1,028	1,040	1,039	1,120	1,058	1,104	1,153	**1,173**	1,131	949
New Hampshire	3,129	3,061	3,085	3,117	3,177	3,141	3,105	3,075	*3,011*	3,093	3,198	**3,246**	3,240
New Jersey	2,506	*2,256*	2,301	2,331	2,432	2,424	2,397	2,452	2,552	2,658	2,775	**2,780**	2,722
New York	35,950	*33,712*	34,894	35,793	36,055	36,428	36,235	35,850	35,746	36,030	36,669	**37,244**	36,745
North Carolina	5,151	*4,980*	5,115	5,111	5,150	5,161	5,161	5,095	5,083	5,210	5,233	5,221	**5,292**
Ohio	3,149	*2,682*	2,718	2,889	3,025	3,114	3,237	3,321	3,427	3,377	3,330	3,350	3,300
Pennsylvania	38,206	37,163	*36,957*	38,131	38,372	37,879	37,136	37,408	37,674	38,472	39,530	**39,911**	39,839
Rhode Island	1,774	1,805	1,810	1,741	1,778	1,782	1,773	1,730	*1,711*	1,745	1,785	1,803	1,825
South Carolina	839	863	853	847	858	849	856	840	830	819	825	*807*	822
Tennessee	3,117	3,097	3,087	*3,088*	**3,191**	3,156	3,171	3,105	3,097	3,157	3,076	3,115	3,119
Vermont	946	952	991	991	967	946	956	895	*863*	893	925	**1,000**	977
Virginia	1,715	*1,633*	1,706	1,694	1,685	1,675	1,735	1,742	1,731	1,716	1,750	1,748	**1,764**
Wisconsin	4,282	*3,938*	4,038	4,179	4,245	4,292	4,316	4,335	4,393	4,321	4,370	4,444	**4,513**

[1] The month of maximum employment for each state is indicated by boldface figures and that of minimum employment by italic figures.

Prevailing hours of labor.—In Table 8 the wage earners in the hosiery and knit goods industry have been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. In making this classification the average number of wage earners employed during the year in each establishment has been classified as a total according to the hours prevailing in that establishment, even though a few employees worked a greater or smaller number of hours.

Table 8

AVERAGE NUMBER OF WAGE EARNERS IN THE HOSIERY AND KNIT GOODS INDUSTRY: 1909

STATE.	Total.	In establishments with prevailing hours— 48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.
United States	**129,275**	**908**	**3,331**	**4,753**	**65,422**	**49,934**	**4,927**
Alabama	611	.....	.....	.....	.....	493	118
Connecticut	3,340	2	.....	441	2,622	275	.....
Georgia	2,743	.....	.....	.....	1,120	658	965
Illinois	2,913	83	553	78	1,320	879	.....
Indiana	1,933	.....	.....	.....	1,690	243	.....
Maryland	1,022	.....	.....	1	41	980	.....
Massachusetts	9,941	12	245	86	9,598	.....	.....
Michigan	2,545	8	308	807	758	666	.....
Minnesota	1,052	.....	.....	48	866	138	.....
New Hampshire	3,129	.....	.....	6	3,123	.....	.....
New Jersey	2,506	24	109	107	2,140	126	.....
New York	35,950	427	1,312	454	7,945	24,934	878
North Carolina	5,151	.....	.....	.....	689	2,524	1,938
Ohio	3,149	10	45	921	1,019	1,154	.....
Pennsylvania	38,206	275	381	496	24,508	12,472	74
Rhode Island	1,774	.....	1	.....	1,702	71	.....
South Carolina	839	.....	.....	.....	.....	839	.....
Tennessee	3,117	.....	.....	.....	840	1,323	954
Vermont	946	.....	.....	.....	.....	946	.....
Virginia	1,715	.....	.....	.....	1,241	474	.....
Wisconsin	4,282	24	96	920	2,876	366	.....

Of the wage earners employed in the hosiery and knit goods industry in 1909, 92.9 per cent were in establishments where the prevailing hours of labor were from 54 to 60, inclusive, per week, and 50.6 per cent were in establishments where the prevailing hours were more than 54 but less than 60 per week. In 12 of the states for which figures are given, a larger number of wage earners worked in establishments where the prevailing hours were between 54 and 60 per week than in any other group, but in 8 of the states shown the most common hours were 60 per week.

CHARACTER OF OWNERSHIP.

Table 9 presents statistics with respect to the character of ownership of the hosiery and knitting mills.

Table 9

HOSIERY AND KNIT GOODS INDUSTRY.

CHARACTER OF OWNERSHIP.	Number of establishments. 1909	Number of establishments. 1904	Value of products. 1909	Value of products. 1904
Total	**1,374**	**1,144**	**$200,143,527**	**$137,076,454**
Individual	443	391	24,852,520	21,311,190
Firm	[1] 280	[2] 275	33,269,175	29,451,418
Corporation	651	475	142,021,832	86,303,316
Other	.....	3	.....	10,521
Per cent of total	**100.0**	**100.0**	**100.0**	**100.0**
Individual	32.2	34.2	12.4	15.5
Firm	20.4	24.0	16.6	21.5
Corporation	47.4	41.5	71.0	63.0
Other	.....	0.3	.....	(3)

[1] Includes one establishment under cooperative ownership, to avoid disclosure of individual operations.
[2] Includes one establishment under corporate ownership, to avoid disclosure of individual operations.
[3] Less than one-tenth of 1 per cent.

In 1909, of the total number of establishments reported for the industry, 47.4 per cent were under corporate ownership, as compared with 41.5 per cent in 1904. There was an appreciable increase during the five-year period in the relative importance, as measured by value of products, of establishments under corporate ownership, such establishments contributing 71 per cent of the total value of products in 1909, as compared with 63 per cent in 1904.

Of the total number of wage earners reported for the industry in 1909, as shown by Table 10, 12.7 per cent were employed in establishments under individual ownership, 15.2 per cent in those under firm ownership (including the one establishment under "other" ownership), and 72.1 per cent in those owned by corporations. The table also gives statistics for the hosiery and knitting mills classified according to form of ownership for 21 states in which an average of more than 500 wage earners were employed in 1909.

Table 10 — HOSIERY AND KNIT GOODS INDUSTRY: 1909

STATE.	Number of establishments owned by—			Wage earners in establishments owned by—			Value of products of establishments owned by—			Value added by manufacture in establishments owned by—		
	Individuals.	Firms.	Corporations.	Individuals.	Firms.	Corporations.	Individuals.	Firms.	Corporations.	Individuals.	Firms.	Corporations.
United States	**443**	**280**	**651**	**16,453**	**19,648**	**93,174**	**$24,852,520**	**$33,269,175**	**$142,021,832**	**$10,469,747**	**$14,657,706**	**$64,775,021**
Alabama	.....	.....	6	.....	.....	611	.....	.....	591,000	.....	.....	277,345
Connecticut	2	.....	19	(X)	.....	*3,840*	(X)	.....	*5,800,692*	(X)	.....	*2,752,145*
Georgia	.....	1	21	.....	(X)	*2,743*	.....	(X)	*3,232,623*	.....	(X)	*1,300,187*
Illinois	15	10	18	144	576	2,193	241,370	968,465	4,736,902	118,686	443,598	2,152,088
Indiana	.....	.....	5	.....	.....	1,933	.....	.....	2,381,219	.....	.....	1,466,586
Maryland	5	2	4	*522*	(X)	500	*539,454*	(X)	582,871	*213,403*	(X)	261,762
Massachusetts	20	7	38	215	1,001	8,725	474,926	2,549,024	11,712,075	190,521	1,130,605	6,443,293
Michigan	8	4	23	244	61	2,240	332,168	104,798	3,592,139	190,609	48,407	1,743,483
Minnesota	5	1	4	*93*	(X)	959	*182,857*	(X)	2,059,837	*90,292*	(X)	1,060,332
New Hampshire	3	4	14	12	691	2,426	26,460	1,143,838	3,593,821	13,373	581,630	1,533,443
New Jersey	14	9	14	330	304	1,863	522,759	486,455	2,801,027	227,411	226,185	1,530,767
New York	131	73	156	3,634	7,231	25,085	7,360,501	13,969,732	45,800,063	3,012,405	6,087,870	19,352,650
North Carolina	5	13	44	240	521	4,390	185,322	558,912	4,407,458	58,648	202,359	1,878,390
Ohio	8	8	23	236	493	2,420	360,992	1,046,149	5,017,290	201,970	411,163	1,968,870
Pennsylvania	185	130	149	9,363	7,714	21,129	12,160,619	10,952,157	26,544,730	5,059,341	4,868,638	12,511,576
Rhode Island	4	2	11	*488*	(X)	1,286	*836,126*	(X)	3,029,666	*487,794*	(X)	983,541
South Carolina	1	1	5	(X)	(X)	*839*	(X)	(X)	*655,340*	(X)	(X)	*821,470*
Tennessee	2	.....	20	(X)	.....	*3,117*	(X)	.....	*3,605,456*	(X)	.....	*1,445,211*
Vermont	1	2	5	(X)	*223*	723	(X)	*479,850*	1,265,820	(X)	*218,074*	438,548
Virginia	5	1	5	*1,231*	(X)	484	*1,833,726*	(X)	629,061	*743,603*	(X)	252,048
Wisconsin	22	3	36	97	19	4,166	110,081	61,709	7,662,599	56,949	26,684	3,872,560

NOTE.—In some states, in order to avoid disclosing the returns for individual establishments, the figures for one group have been consolidated with those for establishments under some other form of ownership. In such cases an (X) is placed in the column from which the figures have been omitted and the figures for the group with which they have been combined are printed in italics. The figures for establishments under firm ownership include those for one establishment under cooperative ownership.

There was little variation in the several states with respect to the relative importance of establishments operated under the different forms of ownership. In the majority of the states establishments owned by corporations constituted the most important class, as measured by number of wage earners employed and value of products, those owned by firms ranking second, and those under individual ownership third. In Pennsylvania, New Jersey, and Michigan, however, the number of wage earners and the value of products for establishments under individual ownership were greater than those for establishments controlled by firms. Of the leading states in the industry, Pennsylvania had the largest proportion of establishments under individual ownership, namely, 39.9 per cent.

SIZE OF ESTABLISHMENTS.

Classification by value of products.—Table 11 presents statistics for 1909 and 1904 for hosiery and knitting mills grouped according to the value of their products.

In comparing the figures shown for 1909 and 1904 in the foregoing table, it should be noted that by reason of advance in prices of materials and products an establishment might pass from a lower to a higher class without a corresponding increase in the quantity of its output.

Table 11 — HOSIERY AND KNIT GOODS INDUSTRY.

VALUE OF PRODUCTS PER ESTABLISHMENT.	Number of establishments.		Value of products.	
	1909	1904	1909	1904
Total	**1,374**	**1,144**	**$200,143,527**	**$137,076,454**
Less than $5,000	129	121	319,050	313,493
$5,000 and less than $20,000	221	197	2,627,769	2,288,270
$20,000 and less than $100,000	534	[1] 450	27,241,283	[1] 22,809,014
$100,000 and less than $1,000,000	465	365	132,829,875	96,646,967
$1,000,000 and over	25	11	37,125,550	15,018,710
Per cent of total	**100.0**	**100.0**	**100.0**	**100.0**
Less than $5,000	9.4	10.6	0.2	0.2
$5,000 and less than $20,000	16.1	17.2	1.3	1.7
$20,000 and less than $100,000	38.9	[1] 39.3	13.6	[1] 16.6
$100,000 and less than $1,000,000	33.8	31.9	66.4	70.5
$1,000,000 and over	1.8	1.0	18.5	11.0

[1] Includes one establishment with products valued at $100,000 and less than $1,000,000 to avoid disclosure of individual operations.

Of the 1,374 hosiery and knitting mills reported for 1909, 25, or 1.8 per cent, manufactured products valued at $1,000,000 or over. In 1904 there were 11 establishments of this class out of a total of 1,144. While such establishments represented an insignificant proportion of the total number at both censuses, they reported 18.5 per cent of the total value of products of the industry in 1909 and 11 per cent in 1904. On the other hand, the small establishments—that is, those manufacturing products valued at less than $20,000—constituted more than one-quarter (25.5 per

cent) of the total number of establishments in 1909, but the value of their products amounted to only 1.5 per cent of the total. Both in 1909 and 1904 the greater part of the products of the industry were manufactured in establishments with products valued at from $100,000 to $1,000,000, such establishments reporting 66.4 per cent of the total value of products for the industry in 1909 and 70.5 per cent in 1904.

The average value of products per establishment increased from $119,822 in 1904 to $145,665 in 1909, and the average value added by manufacture, as computed from the figures in Table 1, from $52,699 to $65,431. The increase in these averages was due, in part, to the increase in the prices of materials and products. The average number of wage earners per establishment increased from 91 in 1904 to 94.1 in 1909.

Classification by number of wage earners.—Table 12 gives a classification, according to the number of wage earners employed, in the hosiery and knitting mills in 21 states in which an average of more than 500 wage earners were employed in 1909.

Table 12 HOSIERY AND KNIT GOODS INDUSTRY: 1909

STATE.	Total.		Establishments employing—																
			No wage earners.	1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
	Establishments.	Wage earners (average number).	Establishments.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.
United States	**1,374**	**129,275**	**31**	**168**	**479**	**298**	**3,907**	**288**	**9,780**	**233**	**16,840**	**234**	**36,105**	**89**	**31,954**	**26**	**17,669**	**7**	**12,541**
Alabama	6	611	.....	.....	.....	.....	.....	2	77	1	92	3	442	.....	.....	.....	.....	.....	.....
Connecticut	21	3,340	.....	2	6	1	15	1	40	2	141	11	1,749	4	1,389	.....	.....	.....	.....
Georgia	22	2,743	.....	.....	.....	.....	.....	2	87	11	752	6	935	3	969	.....	.....	.....	.....
Illinois	43	2,913	4	11	37	11	144	7	201	2	179	3	453	5	1,899	.....	.....	.....	.....
Indiana	5	1,933	.....	.....	.....	1	12	1	28	.....	.....	2	371	.....	.....	.....	.....	1	1,522
Maryland	11	1,022	3	2	4	.....	.....	1	33	1	72	2	288	2	620	.....	.....	.....	.....
Massachusetts	65	9,941	3	12	26	10	116	17	569	10	749	6	1,017	3	944	2	1,457	2	5,063
Michigan	35	2,545	.....	3	8	12	161	5	165	8	556	5	764	2	891	.....	.....	.....	.....
Minnesota	10	1,052	.....	1	5	3	36	3	87	.....	.....	2	265	.....	.....	1	659	.....	.....
New Hampshire	21	3,129	1	2	6	3	32	.....	.....	3	207	7	1,119	4	1,224	1	541	.....	.....
New Jersey	37	2,506	.....	3	8	11	150	14	454	5	365	1	116	2	675	1	738	.....	.....
New York	360	35,950	7	44	133	107	1,409	57	1,912	44	3,298	68	10,326	21	8,167	9	6,451	3	4,254
North Carolina	62	5,151	.....	6	23	12	176	9	316	20	1,377	11	1,512	3	840	1	907	.....	.....
Ohio	39	3,149	.....	10	25	2	29	7	229	9	672	9	1,550	2	644	.....	.....	.....	.....
Pennsylvania	464	38,206	7	39	108	90	1,181	137	4,738	95	6,796	62	9,584	25	9,299	8	4,798	1	1,702
Rhode Island	17	1,774	.....	1	1	3	32	3	96	3	191	5	875	2	579	.....	.....	.....	.....
South Carolina	7	839	.....	.....	.....	1	19	2	53	1	87	2	286	1	394	.....	.....	.....	.....
Tennessee	22	3,117	.....	1	5	3	48	2	70	4	258	9	1,385	2	688	1	663	.....	.....
Vermont	8	946	.....	1	5	.....	.....	2	79	3	213	1	151	1	498	.....	.....	.....	.....
Virginia	11	1,715	.....	.....	.....	.....	.....	1	21	3	262	5	827	2	605	.....	.....	.....	.....
Wisconsin	61	4,282	5	15	34	13	161	8	307	7	513	9	1,379	3	1,072	1	816	.....	.....

Of the 1,374 establishments reported for 1909, 31, or 2.3 per cent, employed no wage earners, 33.9 per cent employed from 1 to 20 wage earners, 37.9 per cent from 21 to 100, 23.5 per cent from 101 to 500, and 2.4 per cent more than 500.

Of the total number of wage earners employed, 3.4 per cent were reported by establishments employing from 1 to 20 wage earners, 20.6 per cent by establishments employing from 21 to 100, 52.6 per cent by establishments employing from 101 to 500, and 23.4 per cent by establishments employing more than 500 wage earners. Most of the establishments employing over 500 wage earners were situated in New York, Pennsylvania, and Massachusetts.

EXPENSES.

As stated in the Introduction, the census figures for expenses do not purport to represent the total cost of manufacture, since they take no account of interest or depreciation; hence they can not properly be used for determining profits. Facts of interest can be brought out, however, concerning the relative importance of the different classes of expenses which were reported. Table 1 shows the total expenses reported for hosiery and knitting mills in 1909 to have been $175,729,583, distributed as follows: Cost of materials, $110,241,053, or 62.7 per cent; wages, $44,740,223, or 25.5 per cent; salaries, $7,691,457, or 4.4 per cent; and miscellaneous expenses, made up of advertising, ordinary repairs of buildings and machinery, insurance, traveling expenses, and other sundry expenses, $13,056,850, or 7.4 per cent.

Table 13 shows, by states, for 1909, the per cent distribution of the expenses reported for the hosiery and knit goods industry.

The differences among the states with respect to the proportions which the cost of materials and wages, respectively, formed of the total reported expenses are attributable largely to differences in the character of materials used and to differences in the degree of fineness and elaboration of the products. The cost of materials is likely to form a smaller proportion and

wages a higher proportion of the total expenses in establishments which do their own spinning than in establishments that buy the yarn which they use for knitting.

Table 13.

STATE.	PER CENT OF TOTAL EXPENSES REPORTED FOR THE HOSIERY AND KNIT GOODS INDUSTRY: 1909			
	Salaries.	Wages.	Cost of materials.	Miscellaneous expenses.
United States	**4.4**	**25.5**	**62.7**	**7.4**
Alabama	5.5	24.4	61.7	8.3
California	14.5	25.7	45.8	14.0
Connecticut	6.2	26.1	58.3	9.4
Delaware	3.0	28.6	66.0	2.5
Georgia	5.2	24.2	62.9	7.7
Illinois	4.5	22.6	65.4	7.5
Indiana	9.3	36.0	48.0	6.7
Iowa	8.1	25.8	51.1	15.1
Maine	9.9	22.4	49.8	17.9
Maryland	2.8	22.4	66.7	8.2
Massachusetts	4.2	31.4	56.7	7.7
Michigan	9.3	22.1	58.8	9.8
Minnesota	10.4	19.4	60.6	9.5
New Hampshire	2.3	27.5	63.4	6.8
New Jersey	6.9	29.6	59.9	3.6
New York	3.4	24.8	64.7	7.0
North Carolina	4.1	24.0	67.0	4.9
Ohio	6.8	18.6	66.8	7.8
Pennsylvania	3.8	26.8	62.0	7.4
Rhode Island	4.4	18.8	72.3	4.6
South Carolina	4.5	26.3	57.9	11.3
Tennessee	3.8	22.2	64.9	9.1
Utah	7.2	13.5	74.9	4.4
Vermont	2.7	24.8	65.9	6.6
Virginia	3.9	22.7	66.1	7.3
Wisconsin	7.6	23.6	58.0	10.8
All other states	7.1	34.1	51.4	7.4

The percentage that the cost of materials formed of the total expenses reported varies considerably in the different states, being highest in Utah (74.9) and Rhode Island (72.3) and lowest in California (45.8), Indiana (48), and Maine (49.8). For New York the percentage was 64.7; for Pennsylvania, 62; and for Massachusetts, 56.7. In Massachusetts the mills use relatively more raw cotton and less purchased cotton yarn than in Pennsylvania and New York.

ENGINES, POWER, AND FUEL.

Engines and power.—As shown by Table 1, the amount of power used in the industry increased from 6,498 horsepower in 1869 to 103,709 in 1909. Table 14 shows the statistics of power as reported at the censuses of 1909, 1904, and 1899.

The total primary power used in the hosiery and knitting mills increased from 57,346 horsepower in 1899 to 103,709 horsepower in 1909, or 80.8 per cent. In 1909, as in 1904 and 1899, the power of steam engines constituted by far the larger part of the total primary power. Water power, which formed 25.8 per cent of the total primary power in 1899, constituted only 11.6 per cent of the total in 1909. There was a marked increase during the decade, on the other hand, in the relative importance of electric motors operated by purchased current (rented electric power), the total horsepower of such motors increasing from 1,304, or 2.3 per cent of the total primary power, in 1899, to 13,286, or 12.8 per cent of the total, in 1909. The number and horsepower of electric motors used for applying power by means of current generated in the establishments reporting also show very large increases.

Table 14

KIND.	HOSIERY AND KNIT GOODS INDUSTRY.								
	Number of engines or motors.			Horsepower.			Per cent distribution of horsepower.		
	1909	1904	1899	1909	1904	1899	1909	1904	1899
Primary power, total	**2,736**	**1,414**	**932**	**103,709**	**78,769**	**57,346**	**100.0**	**100.0**	**100.0**
Owned	1,085	1,049	932	88,033	71,660	54,727	84.9	91.0	95.4
Steam	811	795	697	74,560	57,460	39,693	71.9	72.9	69.2
Gas	113	76	29	1,235	668	206	1.2	0.8	0.4
Water wheels	158	176	206	12,015	13,522	14,824	11.6	17.2	25.8
Water motors	3	2	(1)	23	10	(1)	(2)	(2)	.....
Other	.....	.....	.....	200	.....	4	0.2	.....	(2)
Rented	1,651	365	.....	15,676	7,109	2,619	15.1	9.0	4.6
Electric motors	1,651	365	(1)	13,286	4,648	1,304	12.8	5.9	2.3
Other	.....	.....	.....	2,390	2,461	1,315	2.3	3.1	2.3
Electric motors.	**2,839**	**779**	**71**	**25,485**	**9,724**	**2,049**	**100.0**	**100.0**	**100.0**
Run by current generated by establishment	1,188	414	71	12,199	5,076	745	47.9	52.2	36.4
Run by rented power	1,651	365	(2)	13,286	4,648	1,304	52.1	47.8	63.6

[1] Not reported. [2] Less than one-tenth of 1 per cent.

Table 15 shows for 1909 the amount of each of the several kinds of power and of the different kinds of fuel used in the industry in the 21 states for which statistics have been presented in previous tables.

The states which ranked highest with respect to the amount of power used were New York, Pennsylvania, and Massachusetts, the total horsepower reported for these states in 1909 being 66,792, or 64.4 per cent of the aggregate for all hosiery and knitting mills in the United States. Steam was the most important form of power in all of the states shown separately with the exception of New Hampshire, where water power formed 65.1 per cent of the total primary power. New York exceeds any other state in the horsepower of steam engines, water wheels, electric motors, and gas and other internal-combustion engines.

Table 15 — HOSIERY AND KNIT GOODS INDUSTRY: 1909

STATE.	Primary horsepower.									Electric horsepower.		Fuel used.					
	Number of establishments reporting.	Total horsepower.	Owned by establishments reporting.					Rented.		Total, rented and generated by establishment.	Generated in the establishment reporting.	Coal.		Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Electric.	Other.			Anthracite (long tons).	Bituminous (short tons).				
United States	1,255	103,709	88,033	74,560	1,235	12,038	200	13,286	2,390	25,485	12,199	124,420	411,187	1,080	6,845	2,182	33,861
Alabama	6	750	750	750						55	55		5,086				
Connecticut	19	3,540	3,510	2,675	35	800		30		444	414	110	14,414		27	88	1,515
Georgia	22	2,948	2,023	2,023				925		1,042	117	232	23,537	26	895		
Illinois	37	3,452	3,146	2,980	66	100		276	30	504	228	6,302	19,225			277	615
Indiana	5	1,393	1,363	1,060		303		30		405	375		7,704				
Maryland	7	460	392	392				68		188	120	5	4,353				
Massachusetts	58	9,113	7,989	7,739	90	160		839	285	1,401	562	3,212	35,196	785		22	1,040
Michigan	33	3,291	2,348	2,034	39	275		943		1,539	596	69	13,203		90	120	625
Minnesota	10	853	824	815	9			29		30	10	37	11,845		15	18	
New Hampshire	19	2,315	2,155	645	4	1,506		65	95	104	39	623	5,849		401	87	24
New Jersey	32	1,477	1,357	1,160	47	150		85	35	352	267	1,898	8,757			42	1,117
New York	307	35,882	31,241	22,968	316	7,757	200	4,377	264	7,931	3,554	36,435	139,576	265	15	220	18,373
North Carolina	62	4,024	3,397	3,185	62	150		621	6	1,226	605		24,590		4,065	286	
Ohio	37	1,613	1,302	1,107	195			306	5	616	310	4	11,522				5,849
Pennsylvania	450	21,797	16,818	16,154	164	500		3,407	1,572	7,074	3,667	72,667	49,824		41	433	3,521
Rhode Island	17	1,626	1,470	1,435		35		126	30	376	250	59	8,666				
South Carolina	7	597	485	485				112		112			3,087		1,148		
Tennessee	22	2,758	2,588	2,588				144	26	142	116		22,317				440
Vermont	4	902	802	500		302		100		160		1,446	3,413		7		17
Virginia	11	1,079	1,000	1,000				69	10	81	12		6,102			320	
Wisconsin	48	2,312	1,933	1,740	193			372	7		825	1,321	14,879	4	36	262	362
All other states	42	1,467	1,140	1,125	15			302	25	1,694	77		9,946		105	1	363

Fuel consumed.—Owing to the extensive use of water power in the hosiery and knit goods industry, less fuel is consumed in generating power than would otherwise be required. As shown by Table 15, bituminous coal was the principal fuel used, 441,187 short tons being consumed during 1909. The largest quantity of anthracite coal, 72,667 long tons, or more than one-half the total consumed in the industry, was reported for Pennsylvania. Gas was used to some extent, the largest quantity being reported for New York.

SPECIAL STATISTICS RELATING TO MATERIALS, PRODUCTS, AND EQUIPMENT.

MATERIALS.

Summary for the United States.—Table 16 shows statistics of the materials used in the hosiery and knit goods industry for 1909, 1904, and 1899.

Most of the mills in the hosiery and knit goods industry purchase the yarn which they use instead of spinning it themselves. This is shown by the fact that in the case of cotton yarn, the principal material used in the industry, the weight of the purchased yarn used in 1909 was more than three times as great as the weight of the yarn made by establishments in the industry for their own use, and that the combined weight of the purchased worsted and woolen yarns used was nearly twice as great as that of such yarns made by the establishments in the industry for their own use, although for woolen yarns alone the quantity made in the establishment using was somewhat greater than that purchased. In the case of merino yarn, however, the quantity made by the establishments in the industry for their own use was more than five times as great as the quantity purchased. The total cost of purchased yarns of all classes in 1909 shown in the table was $68,389,818, or 62 per cent of the cost of all materials, while the cost of the raw cotton and wool used represented 10.6 per cent of the total cost of materials.

Table 16 — MATERIALS USED IN THE HOSIERY AND KNIT GOODS INDUSTRY.

MATERIAL.	1909	1904	1899
Total cost	$110,241,053	$70,789,348	$51,105,330
Cotton:			
Pounds	75,416,023	50,586,760	49,451,301
Cost	$8,803,509	$5,869,317	$3,561,592
Wool, in condition purchased:			
Pounds	7,068,788	17,300,616	17,953,907
Cost	$2,019,055	$6,153,858	$5,262,135
Equivalent of above in scoured condition, pounds	5,582,830	13,909,144	13,031,308
Shoddy, purchased:			
Pounds	7,482,553	7,489,358	3,770,626
Cost	$919,970	$923,719	$488,792
Wool waste and noils, purchased:			
Pounds	8,586,261	6,020,459	5,276,454
Cost	$2,813,129	$1,711,669	$1,487,907
Yarns, purchased:			
Cotton—			
Pounds	216,087,611	161,500,466	131,820,062
Cost	$48,165,749	$34,372,910	$22,204,918
Worsted—			
Pounds	10,370,004	8,789,570	5,823,215
Cost	$10,116,325	$7,457,690	$4,865,304
Woolen—			
Pounds	6,140,265	4,839,343	2,621,893
Cost	$3,834,694	$2,798,454	$1,257,587
Merino—			
Pounds	4,014,609	2,568,890	1,981,484
Cost	$2,667,051	$1,118,999	$642,535
Silk and spun silk—			
Pounds	982,753	320,671	265,247
Cost	$3,606,599	$1,200,259	$946,801
Chemicals and dyestuffs	$2,541,939	$1,677,252	$1,023,101
All other materials	$23,853,633	$13,505,221	$9,454,598
Yarns made in the establishment using—			
Cotton, pounds	69,171,277	39,954,890	40,845,889
Woolen, pounds	8,316,349	(1)	(1)
Worsted, pounds	223,404	(1)	(1)
Merino, pounds	20,856,989	(1)	(1)

[1] Not reported.

The total cost of the materials used in the industry increased 115.3 per cent from 1899 to 1909. The amount of raw cotton consumed in the industry shows an increase of 25,964,722 pounds, or 52.5 per cent, between 1899 and 1909, while its cost more than doubled; the increase in consumption, however, took place mainly during the five-year period 1904–1909, the increase for the period 1899–1904 amounting to only 1,135,459 pounds, or 2.3 per cent. Wool, on the contrary, shows a considerable decrease for the decade, amounting, on the scoured basis, to 7,448,469 pounds, or 57.2 per cent; this decrease, however, was confined entirely to the second half of the decade, the consumption increasing somewhat between 1899 and 1904. Shoddy and wool waste and noils show an increase from 1899 to 1909, although shoddy shows a slight decrease between 1904 and 1909.

There was a marked increase during the decade in the quantity of all kinds of purchased yarns used, that for cotton yarn amounting to 85,167,543 pounds, or 64.6 per cent; that for worsted yarns to 4,546,789 pounds, or 78.1 per cent; that for merino yarns to 2,033,125 pounds, or 102.6 per cent; and that for silk yarns to 716,506 pounds, or 269.1 per cent. In the case of yarns made for use in the same establishment, figures for prior censuses are available only for cotton yarn, the quantity of which increased 69.3 per cent from 1899 to 1909. In 1909, as already stated, the amount of purchased cotton yarn used was more than three times as great as the amount spun for use in the same establishment; the proportion of purchased yarn was, however, smaller in that year than in either 1904 or 1899.

Table 16 does not cover the materials used by establishments in other industries which manufactured hosiery and knit goods as subsidiary products. A number of these establishments, manufacturing hosiery and knit goods to the value of $1,773,291 in 1909, are included under other industries of the textile group, and their total consumption of cotton, silk, and wool, or of yarns, as the case may be, is included in the statistics for the industries to which these establishments belong. In 1909, however, approximately 600,000 pounds of scoured wool and considerable quantities of cotton, animal hair, etc., and yarns were used by establishments in nontextile industries which manufactured hosiery and knit goods as subsidiary products.

Materials used, by states.—Table 17 presents statistics of the principal materials used in the industry, by states.

Table 17

MATERIAL AND STATE.	Cost: 1909	HOSIERY AND KNIT GOODS INDUSTRY—PRINCIPAL PURCHASED MATERIALS USED, BY STATES. Quantity (pounds). 1909	1904	1899
Cotton	[1] 38,803,509	[1] 75,416,023	50,586,760	49,451,301
Connecticut	286,488	1,971,512	2,143,861	2,068,413
Georgia	456,956	4,043,536	(2)	.....
Massachusetts	1,912,046	16,459,053	12,643,679	10,915,958
New Hampshire	173,411	1,314,260	1,936,848	1,942,884
New York	4,014,367	34,665,053	24,470,590	24,337,305
North Carolina	398,635	3,531,967	2,112,160	1,300,378
Pennsylvania	302,702	2,506,120	1,874,685	2,218,426
Tennessee	472,781	3,591,120	.....	.....
All other states	786,123	7,333,402	5,404,937	6,667,937
Wool:				
In condition purchased	[3] 2,919,055	[3] 7,068,788	[3] 17,300,616	[3] 17,953,907
Connecticut	467,854	1,010,245	1,985,983	2,472,767
Massachusetts	195,577	440,374	1,505,141	1,146,940
Michigan	68,059	166,136	1,043,144	1,434,998
New Hampshire	99,855	211,544	803,633	820,271
New York	955,840	1,967,337	4,977,789	5,528,320
Pennsylvania	205,403	467,877	1,168,283	1,347,914
Vermont	146,313	256,348	509,502	540,934
Wisconsin	139,581	302,740	701,790	799,357
All other states	640,564	2,237,187	4,602,345	3,862,397
Equivalent of above in scoured condition	.....	5,582,839	13,909,144	13,031,308
Connecticut	.....	815,927	1,604,988	1,722,259
Massachusetts	.....	340,769	993,141	571,387
Michigan	.....	150,082	822,169	1,382,584
New Hampshire	.....	210,171	722,857	441,685
New York	.....	1,967,327	4,831,019	4,803,101
Pennsylvania	.....	435,648	1,056,052	1,069,994
Vermont	.....	256,348	499,502	540,934
Wisconsin	.....	287,095	600,300	422,423
All other states	.....	1,119,272	2,779,116	2,076,941
Shoddy, mungo, and wool extract	919,970	7,482,553	7,489,358	3,770,626
Illinois	117,428	470,287	332,696	111,600
Massachusetts	34,382	269,443	284,974	65,075
New Hampshire	118,187	566,214	813,849	668,821
New York	551,877	5,410,605	4,444,951	2,105,354
Pennsylvania	34,880	414,432	175,762	106,907
Vermont	19,669	151,300	206,014	161,145
All other states	43,547	200,272	1,231,112	551,824
Wool waste and noils	2,813,129	8,586,261	6,020,459	5,276,454
Connecticut	630,130	2,015,712	930,683	493,216
Massachusetts	107,839	271,388	301,545	204,756
Pennsylvania	268,337	546,497	602,233	487,078
New York	1,429,402	4,398,579	2,735,224	2,023,552
All other states	377,421	1,354,085	1,450,774	1,167,852

MATERIAL AND STATE.	Cost: 1909	HOSIERY AND KNIT GOODS INDUSTRY—PRINCIPAL PURCHASED MATERIALS USED, BY STATES. Quantity (pounds). 1909	1904	1899
Cotton yarn	$48,165,749	216,987,611	161,500,466	131,820,068
Connecticut	463,022	1,539,828	1,221,624	991,497
Georgia	978,805	4,886,428	6,600,954	3,707,218
Illinois	1,553,056	6,677,751	5,112,300	3,817,050
Massachusetts	1,771,206	6,903,775	3,711,210	2,610,885
Michigan	595,320	2,366,690	2,218,111	1,736,671
New Hampshire	728,460	3,712,733	2,874,555	1,230,881
New Jersey	620,882	2,264,614	1,815,300	1,923,684
New York	13,824,123	86,676,623	56,512,123	59,112,590
North Carolina	1,858,760	9,527,471	5,115,699	2,136,004
Ohio	1,238,527	4,207,238	1,649,479	432,372
Pennsylvania	16,283,401	59,035,958	46,895,164	38,323,301
Rhode Island	1,220,424	4,609,892	4,778,112	4,071,207
Tennessee	1,203,887	4,746,986	4,701,053	1,099,600
Virginia	1,033,018	5,017,117	4,446,241	2,097,316
Wisconsin	1,666,561	4,804,716	3,954,498	1,532,591
All other states	3,125,388	9,949,791	9,887,443	6,996,601
Woolen yarn	3,834,094	6,140,265	4,839,343	2,621,893
Illinois	112,505	187,752	145,233	109,600
Massachusetts	87,798	113,368	80,380	128,631
Michigan	240,060	449,928	525,370	205,029
New Jersey	113,150	154,248	190,074	43,800
New York	2,077,718	3,186,332	1,742,576	902,234
Ohio	439,977	773,371	327,084	64,823
Pennsylvania	399,134	618,809	661,645	409,163
Wisconsin	245,736	452,896	546,051	276,286
All other states	118,016	203,561	620,330	482,327
Worsted yarn	10,116,325	10,370,004	8,789,570	5,823,215
Connecticut	393,596	416,566	345,003	233,282
Illinois	295,626	287,276	222,625	215,700
Massachusetts	638,014	619,140	736,826	411,468
Michigan	296,721	306,325	359,380	238,822
New Hampshire	700,228	733,405	529,943	270,820
New Jersey	350,746	338,566	134,164	232,157
New York	3,078,048	3,232,368	2,340,773	1,585,842
Ohio	1,003,980	1,095,829	784,770	455,569
Pennsylvania	1,616,975	1,684,786	1,584,717	1,115,863
Rhode Island	686,017	597,037	622,209	531,778
Wisconsin	547,900	568,093	514,792	277,930
All other states	508,474	490,553	614,368	253,984
Merino (cotton mixed) yarn	2,667,051	4,014,609	2,568,890	1,981,484
Silk yarn and spun silk yarn	3,606,599	982,753	320,671	266,247
Linen, jute, and other vegetable fiber yarn	180,818	241,754	63,617	116,160

[1] Includes 3,429,494 pounds of Egyptian or other foreign cotton, costing $526,001.
[2] Included in figures for "all other states," to avoid disclosure of individual operations.
[3] Includes for 1909, 472,707 pounds of foreign wool, costing $252,419; for 1904, 1,130,433 pounds; and for 1899, 3,446,838 pounds.

New York was the leading state in the use of raw cotton in all three years, with Massachusetts second. Connecticut and New Hampshire both show a decrease in the amount used in 1909 as compared with 1899.

A decrease in the amount of wool used took place between 1899 and 1909 in every state for which figures are given in the table. New York used more raw wool than any other state, the consumption in 1909 in this state amounting to 27.8 per cent of the total for the industry in the United States.

The greater part of the shoddy, mungo, and wool extract reported (more than one-half in each of the three years covered by the table) was reported from New York. More than one-half of the total amount of purchased wool waste and noils used in the industry in 1909 (4,398,579 pounds) was also reported from New York.

Of the total amount of purchased yarns used in the industry in 1909 (238,736,996 pounds), 94,455,289 pounds, or 39.6 per cent, was reported from New York. Pennsylvania ranked second in this respect, with 61,995,291 pounds, or 26 per cent of the total.

Of the purchased cotton yarn used in 1909, 39.9 per cent was used in New York and 27.2 per cent in Pennsylvania. Every state for which statistics as to this material are given in the table shows an increase between 1899 and 1909 in the quantity used, the largest relative increases being in Ohio (873.1 per cent) and North Carolina (345.9 per cent).

Of the purchased woolen yarn used in the industry in 1909, slightly more than one-half (51.9 per cent) was reported from New York. With the exception of Massachusetts, which shows a slight decrease, all the states listed in the table show gains in consumption for the decade, the largest relative increases being in Ohio, where the consumption in 1909 was nearly twelve times that in 1899, and New York and New Jersey, where the consumption in 1909 was more than three and one-half times as great as in 1899. New York also led the states in the use of purchased worsted yarn in 1909, its consumption in that year being more than twice as great as in 1899.

Table 18 gives statistics as to the other materials used in the industry, by states, for 1909.

HOSIERY AND KNIT GOODS INDUSTRY—OTHER MATERIALS USED, BY STATES: 1909.

Table 18 MATERIAL AND STATE.	Quantity (pounds).	Cost.
Tops	**121,505**	**$32,995**
Connecticut	38,783	29,597
New York	66,914	49,789
All other states	15,808	13,609
Merino (cotton mixed) yarn	**4,014,609**	**2,667,051**
Illinois	297,119	201,890
Massachusetts	466,747	475,769
Michigan	149,501	63,609
Minnesota	164,004	140,895
New Hampshire	69,405	67,316
New York	925,440	693,856
Ohio	843,181	398,934
Pennsylvania	389,296	202,453
Rhode Island	314,648	146,544
Wisconsin	238,931	159,978
All other states	156,247	115,717
Silk yarn and spun silk yarn	**982,763**	**3,606,599**
Massachusetts	124,715	369,777
New Jersey	57,403	231,114
New York	423,230	1,644,056
Ohio	38,281	97,848
Pennsylvania	250,467	978,071
Rhode Island	22,900	84,955
Wisconsin	38,582	117,606
All other states	27,175	83,172
Linen, jute, and other vegetable fiber yarns	**241,754**	**189,818**
Massachusetts	7,408	17,215
New York	11,296	9,266
Ohio	27,800	79,680
Pennsylvania	15,975	17,507
Linen, jute, and other vegetable fiber yarns—Contd.		
Wisconsin	4,941	$5,464
All other states	174,334	51,686
All other materials forming a component part of products (not including those covered by Table 17)		**1,502,919**
Connecticut		18,853
Illinois		20,366
Massachusetts		11,537
New Hampshire		20,603
New York		1,170,422
Pennsylvania		31,843
Virginia		193,364
All other states		20,031
Chemicals and dyestuffs		**2,541,939**
Connecticut		52,249
Georgia		64,558
Illinois		87,423
Indiana		25,456
Maryland		28,965
Massachusetts		242,632
Michigan		54,091
New Hampshire		91,871
New Jersey		102,941
New York		363,607
North Carolina		151,329
Pennsylvania		366,926
Rhode Island		32,100
Tennessee		121,614
Wisconsin		179,336
All other states		139,681

PRODUCTS.

Summary for the United States.—Table 19 shows the products of the hosiery and knit goods industry in the United States, as reported at the censuses of 1909, 1904, and 1899.

Of the total value of products of the industry in 1909, that of hosiery constituted 34.3 per cent; that of shirts, drawers, and combination suits, 42.2 per cent; that of sweaters, cardigan jackets, etc., 11.2 per cent; that of gloves and mittens, 3.6 per cent; and that of all other products, 8.6 per cent. In the case of each of the classes of hosiery, as well as of shirts and drawers and combination suits, the cotton product predominated as to both quantity and value.

Cotton hosiery constituted 91.2 per cent of the total output of hosiery in 1909, as compared with 88.2 per cent in 1899. Of the cotton hosiery manufactured in 1909, 43.3 per cent consisted of half hose. Woolen and worsted hosiery constituted only 3.5 per cent of the total output in 1909, and of such hosiery, 47.6 per cent was half hose. Most of the merino hosiery consisted of half hose.

Of the shirts and drawers made in 1909, 89.1 per cent were cotton and 10 per cent merino or mixed.

The total production of hose and half hose increased from 29,903,899 dozen pairs in 1899 to 62,825,069 dozen pairs in 1909, a gain of 110.1 per cent, while the value of this class of products increased 150.6 per cent. The production of silk hose, which aggregated only

12,572 dozen pairs in 1899, amounted to 434,414 dozen pairs in 1909. There was comparatively little increase in the production of woolen and worsted hosiery during the decade.

Table 19

PRODUCT.	PRODUCTS OF THE HOSIERY AND KNIT GOODS INDUSTRY. 1909	1904	1899	Per cent of increase:[1] 1899–1909
Total value	[2] $200,143,527	[2] $137,076,454	$95,833,692	108.8
Hosiery:				
Dozen pairs	62,825,069	44,186,063	29,903,899	110.1
Value	$68,721,825	$44,113,260	$27,420,029	150.6
Cotton, merino, and woolen—				
Hose—				
Dozen pairs	34,499,562	25,999,813	16,641,769	107.3
Value	$37,903,011	$26,152,043	$16,203,372	133.9
Cotton—				
Dozen pairs	32,499,104	24,169,804	15,028,173	116.3
Value	$34,078,622	$22,764,799	$13,275,732	156.7
Merino or mixed—				
Dozen pairs	834,029	746,226	436,891	90.9
Value	$1,466,283	$1,182,164	$659,959	122.2
Woolen or worsted—				
Dozen pairs	1,166,429	1,083,783	1,176,705	−0.9
Value	$2,358,106	$2,205,080	$2,267,681	4.0
Half hose—				
Dozen pairs	27,891,093	18,144,185	13,249,558	110.5
Value	$27,218,398	$17,438,914	$11,030,244	146.8
Cotton—				
Dozen pairs	24,805,917	15,223,243	11,352,081	118.5
Value	$21,831,365	$11,821,830	$7,906,945	176.1
Merino or mixed—				
Dozen pairs	2,023,641	1,611,066	957,520	111.3
Value	$3,299,912	$2,214,678	$1,384,764	138.3
Woolen or worsted—				
Dozen pairs	1,061,535	1,309,876	939,057	12.9
Value	$2,087,121	$3,402,406	$1,738,535	20.1
Silk—				
Dozen pairs	434,414	42,065	12,572	3,355.4
Value	$3,600,416	$522,303	$186,413	1,831.4
Shirts and drawers:				
Dozens	25,337,779	19,723,141	15,873,700	59.6
Value	$69,592,817	$56,643,860	$45,675,594	52.4
All cotton—				
Dozens	22,567,121	17,107,958	12,058,431	87.1
Value	$50,007,598	$39,058,762	$26,882,902	86.0
Merino or mixed—				
Dozens	2,536,473	2,113,810	2,675,416	−5.2
Value	$17,055,624	$13,031,754	$13,293,829	28.3
All wool—				
Dozens	178,163	485,328	1,085,046	−83.6
Value	$1,820,521	$3,647,934	$4,980,818	−63.4
Shirts and drawers—Continued.				
Silk and silk mixed—				
Dozens	56,022	16,045	54,807	2.2
Value	$709,074	$305,410	$518,045	36.9
Combination suits:				
Dozens	2,473,103	1,440,420	986,855	150.6
Value	$14,853,536	$6,793,947	$3,691,847	302.3
All cotton—				
Dozens	2,047,637	1,260,301	824,632	148.3
Value	$9,713,597	$4,478,664	$2,240,566	333.5
Merino or mixed—				
Dozens	364,387	105,242	139,994	160.3
Value	$4,217,432	$1,199,949	$1,133,328	272.1
All wool—				
Dozens	50,102	68,067	9,501	427.3
Value	$683,289	$965,132	$201,667	238.8
Silk or silk mixed—				
Dozens	10,977	6,810	12,728	−13.8
Value	$239,218	$150,202	$116,286	105.7
Sweaters, cardigan jackets, etc:				
Dozens	2,221,410	811,629	594,090	272.9
Value	$22,430,817	$8,345,369	$3,498,837	541.1
Gloves and mittens:				
Dozen pairs	2,527,889	2,260,508	1,898,587	33.1
Value	$7,296,887	$5,556,260	$4,244,046	71.9
Hoods, scarfs, nubias, etc.:				
Dozens	888,223	589,315	343,429	158.6
Value	$3,217,985	$1,774,862	$1,002,392	221.0
Shawls:				
Dozens	218,923	435,306	157,622	38.9
Value	$916,294	$1,293,348	$328,720	178.7
Boot and shoe linings:				
Square yards	9,726,770	11,768,961	10,406,440	−6.5
Value	$1,209,464	$1,249,401	$2,205,003	−45.1
Yarns for sale	$1,785,531	$1,000,083	$498,790	258.0
Cotton—				
Pounds	7,457,412	3,304,615	2,419,282	208.2
Value	$1,568,417	$654,234	$422,100	271.6
Woolen, worsted, and merino—				
Pounds	488,322	491,559	134,529	263.0
Value	$217,114	$345,849	$76,690	183.1
All other products	[3] $10,118,371	$10,306,064	$7,268,434	39.2

[1] A minus sign (—) denotes decrease.
[2] In addition, hosiery and knit goods to the value of $2,975,749 were made in 1909 by establishments in the following industries: Boots and shoes, rubber; clothing, men's, including shirts; clothing, women's; cotton goods, including cotton small wares; gloves and mittens, leather; hats and caps, other than felt, straw, and wool; millinery and lace goods; silk and silk goods, including throwsters; woolen, worsted, and felt goods, and wool hats. In 1904 products to the value of $1,579,633 were made by establishments not engaged primarily in the manufacture of hosiery and knit goods.
[3] Includes products to the value of $1,028,907, the character of which pertains to the following industries: Boxes, fancy and paper; clothing, men's, including shirts; clothing, women's; dyeing and finishing textiles; fancy articles, not elsewhere specified; gloves and mittens, leather; hats and caps, other than felt, straw, and wool; instruments, professional and scientific; photographic apparatus and materials; waste; and woolen, worsted, and felt goods, and wool hats.

The production of shirts and drawers of all classes increased from 15,873,700 dozens in 1899 to 25,337,779 dozens in 1909, a gain of 59.6 per cent. The relative increase in the value of the product, however, was somewhat less (52.4 per cent)—a fact attributable to a change in the proportions represented by the different classes, as for each separate class, with the exception of cotton, the percentage of increase in value was greater (or the percentage of decrease less) than that in quantity, while for cotton shirts and drawers the relative increases in quantity and value were approximately the same. The production of all-wool shirts and drawers declined greatly during the decade, and that of silk and silk mixed and of merino and merino mixed was substantially the same in 1909 as in 1899, although greater than in 1904, but the production of cotton shirts and drawers increased 87.1 per cent.

There was an increase of 150.6 per cent between 1899 and 1909 in the production of combination suits, all classes, with the exception of silk and silk mixed, showing an increase. The highest percentage of gain (427.3) was reported for the all-wool varieties.

There was a very great increase during the decade in the production of sweaters, cardigan jackets, etc., and of hoods, scarfs, nubias, etc., and a considerable increase in the production of knit gloves and mittens and shawls, but a decrease in the output of boot and shoe linings.

The yarns manufactured for sale in the hosiery and knit goods industry in 1909 had a value of $1,785,531, representing an increase of 258 per cent as compared with that in 1899. Of the total value in 1909, 87.8 per cent represented that of cotton yarn and 12.2 per cent that of woolen, worsted, and merino yarns. The output of cotton yarn for sale shows an increase of 208.2 per cent for the decade, and that of woolen, worsted, and merino yarns an increase of 263 per cent.

Table 20

PRODUCT.	Total.	Production in the hosiery and knit goods industry.	Production in other industries.[1]
Value of products	**$203,119,276**	**$200,143,527**	**$2,975,749**
Hosiery:			
Dozen pairs	63,313,290	62,825,069	488,221
Value	$69,381,989	$68,721,825	$660,164
Cotton—			
Dozen pairs	57,684,372	57,305,021	379,351
Value	$56,215,975	$55,909,987	$305,988
Merino or mixed—			
Dozen pairs	2,864,879	2,857,670	7,209
Value	$4,792,600	$4,766,195	$26,405
Woolen or worsted—			
Dozen pairs	2,329,625	2,227,964	101,661
Value	$4,772,998	$4,445,227	$327,771
Silk—			
Dozen pairs	434,414	434,414	.....
Value	$3,600,416	$3,600,416	.....
Shirts and drawers:			
Dozens	25,855,725	25,337,779	517,946
Value	$70,738,024	$69,592,817	$1,145,207
Cotton—			
Dozens	23,084,107	22,567,121	516,986
Value	$51,145,228	$50,007,598	$1,137,630
Merino or mixed—			
Dozens	2,537,398	2,536,473	925
Value	$17,062,451	$17,055,624	$6,827
All wool—			
Dozens	178,198	178,163	35
Value	$1,821,271	$1,820,521	$750
Silk and silk mixed—			
Dozens	56,022	56,022	.....
Value	$709,074	$709,074	.....
Combination suits:			
Dozens	2,474,696	2,473,103	1,593
Value	$14,873,526	$14,853,536	$19,990
Cotton—			
Dozens	2,049,178	2,047,637	1,541
Value	$9,732,859	$9,713,597	$19,262
Combination suits—Continued.			
Merino or mixed—			
Dozens	364,439	364,387	52
Value	$4,218,160	$4,217,432	$728
All other—			
Dozens	61,079	61,079	.....
Value	$922,507	$922,507	.....
Sweaters, cardigan jackets, etc.:			
Dozens	2,228,038	2,221,410	6,628
Value	$22,523,797	$22,430,817	$92,980
Gloves and mittens:			
Dozen pairs	2,538,761	2,527,889	10,872
Value	$7,310,097	$7,296,887	$13,210
Leggings and gaiters:			
Dozen pairs	95,285	65,326	29,959
Value	$521,601	$192,242	$329,359
Hoods, scarfs, nubias, etc.:			
Dozens	904,728	888,223	16,505
Value	$3,373,066	$3,217,985	$155,081
Shawls:			
Dozens	218,923	218,923	.....
Value	$916,294	$916,294	.....
Fancy knit goods, wristers, etc.:			
Dozens	974,600	943,267	31,333
Value	$2,428,414	$2,392,927	$35,487
Boot and shoe linings:			
Square yards	10,546,770	9,726,770	820,000
Value	$1,314,298	$1,209,464	$104,834
Eider down goods, jersey cloth, stockinet, astrakhan, and similar fabrics:			
Square yards	4,819,801	4,819,801	.....
Value	$1,496,009	$1,496,009	.....
Yarns for sale:			
Pounds	7,945,734	7,945,734	.....
Value	$1,785,531	$1,785,531	.....
All other products	$5,373,078	[2]4,954,708	$418,370
Contract work	$1,083,552	$1,082,485	$1,067

[1] These industries include boots and shoes, rubber; clothing, men's, including shirts; clothing, women's; cotton goods, including cotton small wares; gloves and mittens, leather; hats and caps, other than felt, straw, and wool; millinery and lace goods; silk and silk goods; woolen, worsted, and felt goods, and wool hats.

[2] Includes products to the value of $1,028,907, chargeable to the following industries: Boxes, fancy and paper; clothing, men's, including shirts; clothing, women's; dyeing and finishing textiles; fancy articles, not elsewhere specified; gloves and mittens, leather; hats and caps, other than felt, straw, and wool; instruments, professional and scientific; photographic apparatus and materials; waste; woolen, worsted, and felt goods, and wool hats.

Table 20 shows, for 1909, the quantity and value of the principal classes of hosiery and knit goods, so far as reported separately, manufactured, respectively, in all industries combined, in the hosiery and knit goods industry, and in other industries.

The total value of products reported for the hosiery and knit goods industry in 1909 ($200,143,527) includes $2,814,438 representing the value of products other than hosiery and knit goods and of yarns, which class of products are usually the primary products of other industries. The subtraction of this latter figure from the total value of products for the industry leaves a remainder of $197,329,089, which represents approximately the value of the hosiery and knit goods made in the industry. On the other hand, hosiery and knit goods to the value of $2,975,749 were reported by establishments engaged primarily in the manufacture of other products, although this may not represent the total production of hosiery and knit goods outside the hosiery and knit goods industry, as some establishments making these products may not have reported them separately. Adding together the two figures just given, a total of $200,304,838 is obtained, which represents approximately the total value of the strictly hosiery and knit goods manufactured in 1909, whether in the hosiery and knit goods industry or in other industries.

Products, by states.—Table 21 shows the different products of the industry in 1909, 1904, and 1899, by states.

Of the hosiery manufactured in the United States in 1909, Pennsylvania produced 27,832,601 dozen pairs, or 44.3 per cent; Massachusetts, 4,506,960 dozen pairs; and Georgia, 3,726,330 dozen pairs. Wisconsin shows the largest percentage of increase in production for the decade 1899–1909 (260.8), Georgia following with 211.7. Connecticut, New Jersey, and Ohio show a decrease in production for the five-year period 1904–1909, although the output in 1909 was in each case somewhat greater than that in 1899.

Of the total output of cotton hosiery manufactured in the United States in 1909, Pennsylvania produced 27,139,582 dozen pairs, or 47.4 per cent. New York, the leading state in the hosiery and knit goods industry as a whole, produced only an insignificant quantity of cotton hose. Wisconsin shows the largest percentage of increase from 1899 to 1909 (487.7), although that for North Carolina is nearly as great (442.9). New Jersey is the only state listed in the table which shows a decrease between 1899 and 1909; all of this decrease, however, took place in the five-year period 1904–1909.

In the manufacture of woolen and worsted hosiery New Hampshire is the leading state, producing 44.5 per cent of the entire output in 1909. Pennsylvania showed an increase of 107 per cent in 1909 as compared with 1899, which is the highest rate of increase reported for any state. As compared with 1904, however, the production in 1909 represented a decrease of 14.6 per cent. Wisconsin also showed a decrease in output in 1909 as compared with 1904, although the production was slightly larger in 1909 than in 1899.

HOSIERY AND KNIT GOODS INDUSTRY—PRODUCTS, BY STATES:

Table 21

PRODUCT AND STATE.	Value: 1909	QUANTITY. 1909	1904	1899
		Doz. pairs.	*Doz. pairs.*	*Doz. pairs.*
Hosiery	**$68,721,825**	**62,825,069**	**44,186,063**	**29,803,899**
Connecticut	1,109,617	560,100	672,242	393,111
Georgia	2,339,012	3,726,330	1,880,495	1,195,362
Massachusetts	4,780,351	4,506,960	2,790,860	2,363,872
Michigan	1,419,432	605,589	356,459	445,612
New Hampshire	3,164,589	2,681,273	2,300,948	1,592,267
New Jersey	1,603,231	850,932	1,101,536	794,926
New York	639,185	355,687	233,697	160,272
Ohio	664,128	400,275	411,817	233,716
Pennsylvania	30,847,344	27,832,601	20,327,710	15,232,324
Virginia	522,282	715,807	561,484	360,300
Wisconsin	3,806,117	2,373,261	1,673,731	657,866
All other states	17,776,537	18,216,254	11,875,084	6,474,271
Cotton	**55,909,987**	**57,305,021**	**39,393,047**	**26,380,254**
Connecticut	302,049	97,616	20,529	95,818
Georgia	2,389,012	3,726,330	1,880,495	1,194,772
Illinois	2,914,121	3,069,634	1,861,140	1,662,150
Massachusetts	3,734,618	4,280,266	2,556,261	2,255,341
New Hampshire	984,243	1,186,912	1,043,153	559,439
New Jersey	735,731	752,452	1,090,511	757,836
New York	254,720	280,383	194,564	78,248
North Carolina	4,100,689	5,806,140	2,928,032	1,069,431
Pennsylvania	28,697,548	27,139,582	19,707,227	14,858,506
Virginia	522,282	715,807	561,484	355,800
Wisconsin	2,935,926	2,042,952	1,449,096	347,614
All other states	8,339,048	8,206,947	6,091,555	3,145,299
Hose	**34,078,622**	**32,499,104**	**24,169,804**	**15,028,173**
Georgia	1,018,086	1,226,235	602,388	400,427
Illinois	1,729,376	1,188,667	504,304	469,000
Massachusetts	2,801,323	3,506,546	2,118,093	2,031,921
New Jersey	626,199	656,239	949,862	604,195
North Carolina	2,877,922	3,879,392	1,950,578	726,094
Pennsylvania	16,058,169	13,876,893	11,769,534	7,863,561
Wisconsin	1,774,409	1,143,366	1,337,595	250,586
All other states	7,193,138	7,021,766	4,937,450	2,586,389
Half hose	**21,831,365**	**24,805,917**	**15,223,243**	**11,352,081**
Georgia	1,370,926	2,500,095	1,278,107	794,345
Illinois	1,184,745	1,880,967	1,356,836	1,193,150
Massachusetts	933,295	773,720	438,168	223,420
North Carolina	1,222,767	1,926,748	977,454	343,337
Pennsylvania	12,639,379	13,262,689	7,937,693	6,904,945
Wisconsin	1,161,517	899,586	111,501	91,028
All other states	3,318,736	3,562,112	3,123,484	1,711,856
Woolen or worsted	**4,445,227**	**2,227,964**	**2,393,659**	**2,116,662**
Connecticut	420,639	232,629	164,679	171,211
New Hampshire	1,589,567	991,105	600,706	784,891
Pennsylvania	805,725	428,918	502,226	207,200
Wisconsin	350,835	128,894	187,876	124,265
All other states	1,278,461	446,418	938,172	829,095
Merino or mixed	**4,766,195**	**2,857,670**	**2,357,292**	**1,394,411**
New Hampshire	590,779	503,256	657,089	247,937
Ohio	504,939	323,948	239,162	105,000
Pennsylvania	153,666	118,604	97,222	160,618
All other states	3,516,811	1,911,862	1,363,819	880,856
Silk	**3,600,416**	**434,414**	**42,065**	**12,572**
Pennsylvania	1,190,405	145,497	21,035	6,000
All other states	2,410,011	288,917	21,030	6,572
		Dozens.	*Dozens.*	*Dozens.*
Shirts and drawers	**69,592,817**	**25,337,779**	**19,723,141**	**15,873,700**
Connecticut	3,656,160	471,708	440,731	520,310
Georgia	573,020	314,893	425,668	205,165
Massachusetts	6,080,517	1,667,482	1,253,170	996,144
Michigan	928,540	720,202	532,829	309,864
New Hampshire	1,200,038	260,703	287,864	200,708
New Jersey	766,719	178,150	195,730	189,431
New York	38,210,508	12,474,922	10,350,484	9,220,519
Ohio	400,704	126,305	119,454	39,565
Pennsylvania	9,815,054	6,721,569	4,029,491	2,875,037
Tennessee	555,597	246,019	157,600	.....
Wisconsin	317,339	58,090	52,264	22,260
All other states	7,088,621	2,097,736	1,877,856	1,294,697
Cotton	**50,007,598**	**22,567,121**	**17,107,958**	**12,058,431**
Connecticut	475,545	113,603	112,108	159,169
Georgia	573,020	314,893	425,000	205,165
Massachusetts	4,257,591	1,415,227	1,098,633	852,167
Michigan	620,888	692,266	519,984	303,955
New Jersey	336,689	133,992	135,815	95,035
New York	29,577,805	11,238,711	8,974,368	6,636,642
Pennsylvania	8,833,761	6,552,364	3,852,513	2,670,341
Tennessee	555,597	246,019	157,600	.....
Virginia	1,865,171	725,509	733,761	580,744
All other states	2,917,531	1,134,537	1,098,176	555,213
Merino or mixed	**17,055,624**	**2,536,473**	**2,113,810**	**2,675,416**
Connecticut	2,941,515	338,589	286,049	298,148
Massachusetts	1,206,785	182,903	44,729	75,121
New York	7,718,492	1,162,148	1,171,123	1,779,339
Pennsylvania	921,319	161,883	150,519	114,183
Vermont	775,657	112,073	90,442	95,151
Wisconsin	106,079	13,804	6,825	7,785
All other states	3,385,777	565,073	364,123	305,689
All wool	**1,820,521**	**178,163**	**485,328**	**1,085,046**
Massachusetts	407,957	35,354	106,813	64,356
New York	555,103	61,424	198,723	780,753
All other states	857,461	81,385	179,792	239,937

PRODUCT AND STATE.	Value: 1909	QUANTITY. 1909	1904	1899
Shirts and drawers—Continued.		*Dozens.*	*Dozens.*	*Dozens.*
Silk or silk mixed	**709,074**	**56,022**	**16,045**	**54,807**
Massachusetts	208,184	33,998	2,995	4,500
New York	359,108	12,639	6,270	23,785
All other states	141,782	9,385	6,780	26,522
Combination suits	**14,853,536**	**2,473,103**	**1,440,420**	**986,855**
Massachusetts	2,011,791	183,175	123,144	44,833
Ohio	2,076,484	191,932	76,089	18,167
Pennsylvania	1,394,282	436,275	281,527	404,538
All other states	9,370,979	1,661,721	959,660	519,317
Cotton	**9,713,597**	**2,047,637**	**1,260,301**	**824,632**
Massachusetts	861,787	190,024	53,825	12,069
New York	4,238,442	938,554	655,324	288,079
Ohio	1,047,775	131,186	55,823	11,517
Pennsylvania	1,155,327	412,567	271,069	374,057
All other states	2,410,266	465,306	224,260	138,910
Merino or mixed	**4,217,432**	**364,387**	**105,242**	**139,994**
Massachusetts	968,915	74,643	24,609	30,514
New York	500,830	52,254	27,297	54,153
Ohio	961,771	58,063	15,643	5,135
Pennsylvania	234,855	23,268	9,858	29,366
All other states	1,551,061	156,159	27,835	20,826
All wool	**683,289**	**50,102**	**68,067**	**9,501**
Silk or silk mixed	**239,218**	**10,977**	**6,810**	**12,728**
Sweaters, cardigan jackets, etc.	**22,430,817**	**2,221,410**	**811,629**	**594,090**
Illinois	434,090	22,286	9,753	5,310
Massachusetts	718,562	40,544	15,023	7,476
New Jersey	987,559	70,772	21,880	338
New York	13,915,043	1,656,336	540,236	451,262
Ohio	1,355,728	115,457	(1)	.....
Pennsylvania	2,986,061	221,700	145,503	86,191
Wisconsin	1,105,326	54,292	44,183	38,136
All other states	928,448	40,023	35,051	5,377
Gloves and mittens	**7,296,887**	**2,527,889**	**2,260,508**	**1,898,587**
Michigan	640,017	245,797	347,135	298,382
New York	4,270,020	1,195,140	750,662	567,720
Ohio	289,848	319,522	231,990	273,940
Pennsylvania	1,037,894	284,931	152,714	82,163
Wisconsin	843,823	368,157	429,822	350,550
All other states	215,285	114,342	348,185	325 832
Hoods, scarfs, nubias, etc	**3,217,985**	**888,223**	**589,315**	**343,429**
New York	440,411	124,301	255,857	171,060
Ohio	1,064,969	272,478	206,024	122,102
Pennsylvania	581,208	138,427	70,460	42,760
Wisconsin	1,037,318	322,688	26,531	5,744
All other states	94,079	30,329	30,443	1,763
Shawls	**916,294**	**218,923**	**435,306**	**157,622**
New York	66,235	9,800	23,330	200
Ohio	465,694	122,080	310,031	82,960
Pennsylvania	190,052	47,479	15,869	30,000
Wisconsin	104,708	21,581	81,528	9,000
All other states	89,605	17,983	4,548	35,462
Leggings and gaiters	**192,242**	**65,326**	**122,462**	**71,038**
New York	144,185	52,107	23,196	39,813
All other states	48,057	13,219	99,266	31,225
Fancy knit goods, wristers, etc.	**2,392,927**	**943,267**	**532,275**	**284,685**
Illinois	260,173	18,858	(1)	11,000
New York	889,263	366,071	130,065	67,670
Ohio	84,843	28,197	69,500	60,000
Pennsylvania	934,915	442,355	222,655	110,630
All other states	223,733	87,786	160,055	35,385
		Sq. yards.	*Sq. yards.*	*Sq. yards.*
Boot and shoe linings	**1,209,464**	**9,726,770**	**11,768,961**	**10,406,440**
Connecticut	323,469	2,935,038	(1)	983,295
Rhode Island	862,090	6,686,112	9,021,062	5,151,255
All other states	23,905	105,620	2,747,899	4,271,890
Eider down goods	**442,431**	**1,298,322**	**4,843,939**	(2)
New York	77,645	272,444	(1)	(2)
Pennsylvania	199,982	624,438	438,519	(2)
All other states	164,804	401,440	4,405,420	(2)
Jersey cloth and stockinet	**784,255**	**3,111,272**	**3,354,026**	**4,488,911**
New York	300,809	2,053,563	618,785	1,563,961
Pennsylvania	135,792	177,766	(1)	178,199
Rhode Island	206,609	505,889	(1)	834,269
All other states	141,045	374,054	2,735,241	1,912,482
Astrakhan and similar fabrics	**269,323**	**410,207**	**455,274**	**664,779**
Yarns for sale:		*Pounds.*	*Pounds.*	*Pounds.*
Cotton	**1,568,417**	**7,457,412**	**3,304,615**	**2,419,282**
Georgia	60,446	276,604	(1)	.....
New York	519,454	2,499,483	902,834	211,000
Pennsylvania	140,809	362,633	349,138	327,612
All other states	847,708	4,318,692	2,052,643	1,880,670
Woolen, worsted, and merino	**217,114**	**488,322**	**491,559**	**134,529**

[1] Included in figures for "All other states," to avoid disclosure of individual operations.

[2] Figures not available.

In the manufacture of merino hosiery New Hampshire, Michigan, Illinois, Rhode Island, Ohio, and Connecticut were the six leading states. Of the states for which figures are given in Table 21, New Hampshire and Ohio show large increases in production for the decade, while Pennsylvania shows a decrease, all of this decrease, however, taking place during the five-year period 1899–1904.

In the manufacture of silk hosiery, Pennsylvania is the leading state, producing, in 1909, 33.5 per cent of the total output reported for the United States.

Of the total output of shirts and drawers in 1909, New York produced 49.2 per cent. Pennsylvania was the second state in importance in the manufacture of these products, reporting 26.5 per cent of the total; in the production of merino or mixed garments, however, Pennsylvania ranked only fifth.

New York and Pennsylvania are also the leading states in the production of combination suits. Massachusetts, Ohio, and New Hampshire are, however, the leading states in the production of merino or mixed suits, New York and Pennsylvania both showing a slight decrease in the production of such suits for the decade as a whole, although an increase for the five-year period 1904–1909.

New York is the leading state in the manufacture of sweaters, cardigan jackets, etc., reporting 74.6 per cent of the total output in 1909. Wisconsin is the only one of the states for which figures are presented in the table showing an increase between 1899 and 1909 of less than 100 per cent.

New York contributed nearly 50 per cent of the total output of knit gloves and mittens in the United States in 1909; Wisconsin ranked second in quantity of output, while Pennsylvania ranked second in the value of the product. Wisconsin and Michigan show decreases in output for the five-year period 1904–1909, although Wisconsin shows a small increase for the decade as a whole.

In the manufacture of hoods, scarfs, nubias, and similar articles, Wisconsin and Ohio are the leading states. Ohio reported over one-half of the output of knit shawls in 1909 and nearly three-fourths in 1904. New York produces the bulk of the knit leggings and gaiters and Pennsylvania and New York the bulk of the fancy knit goods, wristers, etc. Practically all of the knit fabric used for boot and shoe linings is made in Rhode Island and Connecticut. Pennsylvania, Massachusetts, and New York are the leading states in the manufacture of eider down goods, while New York produced nearly two-thirds of the Jersey cloth and stockinet.

In 1909 the leading states reporting cotton yarn made for sale were New York, Massachusetts, and Illinois, while the bulk of the woolen, worsted, and merino yarns made for sale was reported from Pennsylvania.

In addition to the products listed separately in Table 21, miscellaneous products to the value of $4,954 708 were reported as manufactured in 1909. Among the more important of these products were bathing suits, athletic suits, women's skirts, waists and sacques, towels and face cloths, stocking feet, glove linings, etc.

Table 22 shows the number of establishments in the hosiery and knit goods industry in 1909 which dyed and finished their goods, the number of establishments that dyed or finished goods owned by others, as well as their own product, and the number that did custom spinning and knitting. Some dyeing and finishing is done for establishments in this industry by establishments in other industries, particularly those engaged in the dyeing and finishing of textiles.

Table 22 — NUMBER OF ESTABLISHMENTS IN THE HOSIERY AND KNIT GOODS INDUSTRY: 1909

STATE.	Total.	Dyeing their own goods.	Finishing their own goods.	Dyeing or finishing for others.	Doing custom spinning or knitting.
United States	**1,374**	**381**	**1,263**	**39**	**58**
Alabama	6	5	5	.....	.....
California	6	.....	6	.....	3
Connecticut	21	14	21	.....	5
Delaware	4	3	4	1	.....
Georgia	22	15	21	.....	.....
Illinois	43	9	36	2	3
Indiana	5	3	5	.....	.....
Iowa	4	3	4	.....	.....
Maine	5	2	3	.....	1
Maryland	11	5	9	.....	.....
Massachusetts	65	16	57	2	6
Michigan	35	15	33	.....	.....
Minnesota	10	2	10	.....	1
New Hampshire	21	13	20	1	2
New Jersey	37	5	34	1	4
New York	360	91	330	9	15
North Carolina	62	35	55	4	.....
Ohio	39	10	36	1	2
Pennsylvania	464	68	426	15	7
Rhode Island	17	5	16	3	1
South Carolina	7	6	7	.....	1
Tennessee	22	18	21	.....	.....
Utah	11	3	11	.....	.....
Vermont	8	7	8	.....	.....
Virginia	11	7	11	.....	.....
Wisconsin	61	15	57	.....	5
All other states	17	6	17	.....	2

Table 23 shows, by geographic divisions, for the censuses of 1909, 1904, and 1899, the output of hosiery, of shirts and drawers, of combination suits, of cardigan jackets, sweaters, etc., and of gloves and mittens, and the value of all other products, as reported by establishments in the hosiery and knit goods industry.

The Middle Atlantic division is the leading division in the manufacture of hosiery and knit goods, as measured by total value of products, and also ranks first in the production of each class of products shown separately in the table. The New England division ranked second in total value of products in 1909, the East North Central third, and the South Atlantic fourth. The South Atlantic division, however, ranked second in 1909 in the output of hosiery, and third in that of shirts and drawers, showing increases of 221.5 per cent and 53.2 per cent, respectively, for the decade. In 1899 the New England division outranked the South

Atlantic in the manufacture of hosiery, but by 1904 it had dropped to third place in this respect. The industry is comparatively unimportant in the West North Central, the two South Central, and the Mountain and Pacific divisions, but high percentages of increase for the decade are shown for all these divisions.

HOSIERY AND KNIT GOODS INDUSTRY—PRINCIPAL PRODUCTS, BY GEOGRAPHIC DIVISIONS: 1909, 1904, AND 1899.

Table 23

Division and year.	Number of establishments.	Products.							
		Total value.	Principal products.						Value of all other products.
			Value.	Quantity.					
				Hosiery (dozen pairs).	Shirts and drawers (dozens).	Combination suits (dozens).	Sweaters, cardigan jackets, etc. (dozens).	Gloves and mittens (dozen pairs).	
United States:									
1909	1,374	$200,143,527	$182,895,882	62,825,069	25,337,779	2,473,103	2,221,410	2,527,889	$17,247,645
1904	1,144	137,076,454	121,452,696	44,186,063	19,723,141	1,440,420	811,629	2,260,508	15,623,758
1899	1,006	95,833,692	84,530,353	29,903,899	15,873,700	986,855	594,090	1,898,587	11,303,339
New England—									
1909	137	30,990,884	27,884,676	8,409,837	2,758,239	447,005	46,051	56,542	3,106,208
1904	136	24,807,979	20,068,978	6,222,109	2,336,507	170,992	17,446	81,159	4,739,001
1899	145	17,866,327	14,550,546	4,689,422	2,110,157	77,093	8,642	78,990	3,315,781
Middle Atlantic—									
1909	861	120,598,043	111,280,584	29,039,220	10,374,641	1,436,323	1,948,808	1,480,071	9,317,459
1904	676	79,681,629	72,669,422	21,662,043	14,575,705	987,682	707,619	903,376	7,012,207
1899	610	59,739,128	55,046,869	16,187,522	12,284,987	760,234	537,701	649,883	4,692,259
East North Central—									
1909	183	26,633,881	22,641,245	7,782,722	1,091,844	329,004	201,925	991,076	3,992,636
1904	159	18,435,357	15,073,180	5,331,986	821,134	115,684	70,635	1,275,973	3,362,177
1899	133	11,513,341	8,473,429	3,699,107	433,621	40,657	44,536	1,169,051	3,039,912
West North Central—									
1909	18	2,607,647	2,418,496	302,880	106,735	100,066	14,037	200	189,151
1904	10	1,202,586	1,080,253	128,219	150,954	.....	7,814	.....	122,333
1899	8	410,092	383,845	95,969	9,430	13,252	1,616	495	26,247
South Atlantic—									
1909	119	13,770,901	13,423,965	13,070,504	1,585,542	134,858	90	.....	346,936
1904	100	9,243,665	9,028,126	7,739,948	1,558,064	155,159	50	.....	215,539
1899	72	5,087,402	5,015,089	4,065,999	1,034,640	93,967	.....	.....	72,313
East and West South Central—									
1909	33	4,581,498	4,405,383	4,213,253	406,439	4,000	.....	.....	176,115
1904	24	2,088,069	2,084,949	2,204,093	273,471	3,750	.....	.....	3,120
1899	4	395,150	395,150	543,500	.....	.....	.....	.....	.....
Mountain and Pacific—									
1909	23	960,673	841,533	6,653	14,339	21,847	10,499	.....	119,140
1904	14	683,391	556,224	7,285	6,679	7,047	7,876	.....	127,167
1899	11	203,437	97,687	8,370	840	1,642	1,445	160	105,750
Production in states which can not be distributed by geographic divisions without disclosing individual operations—									
1909	.....	.....	.....	.....	.....	.....	.....	.....	.....
1904	25	933,778	891,564	889,480	627	106	189	.....	42,214
1899	23	618,815	567,738	614,010	25	10	60	8	51,077
Per cent of totals:									
New England—									
1909	10.0	15.5	15.2	13.4	10.9	18.1	2.1	2.2	18.0
1904	11.9	18.1	16.5	14.1	11.8	11.9	2.1	3.6	30.3
1899	14.4	18.6	17.2	15.7	13.3	7.8	1.5	4.2	29.3
Middle Atlantic—									
1909	62.7	60.3	60.8	46.2	76.5	58.1	87.7	58.5	54.0
1904	59.1	58.1	59.8	49.0	73.9	68.6	87.2	40.0	44.9
1899	60.6	62.3	65.1	54.1	77.4	77.0	90.5	34.2	41.5
East North Central—									
1909	13.3	13.3	12.4	12.4	4.3	13.3	9.1	39.2	23.1
1904	13.9	13.4	12.4	12.1	4.2	8.0	8.7	56.4	21.5
1899	13.2	12.0	10.0	12.4	2.7	4.1	7.5	61.6	26.9
West North Central—									
1909	1.3	1.3	1.3	0.5	0.4	4.0	0.6	(1)	1.1
1904	0.9	0.9	0.9	0.3	0.8	.....	1.0	.....	0.8
1899	0.8	0.4	0.5	0.3	0.1	1.3	0.3	(1)	0.2
South Atlantic—									
1909	8.7	6.9	7.3	20.8	6.3	5.5	(1)	.....	2.0
1904	8.7	6.7	7.4	17.5	7.9	10.8	(1)	.....	1.4
1899	7.2	5.3	5.9	13.6	6.5	9.5	.....	.....	0.6
East and West South Central—									
1909	2.4	2.3	2.4	6.7	1.6	0.2	(1)	.....	1.0
1904	2.1	1.5	1.7	5.0	1.4	0.3	.....	.....	(1)
1899	0.5	0.4	0.5	1.8	.....	.....	.....	.....	.....
Mountain and Pacific—									
1909	1.7	0.5	0.5	(1)	0.1	0.9	0.5	.....	0.7
1904	1.2	0.5	0.5	(1)	(1)	0.5	1.0	.....	0.8
1899	1.1	0.2	0.1	(1)	(1)	0.2	0.2	(1)	0.9
Production in states which can not be distributed by geographic divisions without disclosing individual operations—									
1909	.....	.....	.....	.....	.....	.....	.....	.....	.....
1904	2.2	0.7	0.7	2.0	(1)	(1)	(1)	(1)	0.3
1899	2.3	0.7	0.7	2.1	(1)	(1)	(1)	(1)	0.5

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

EQUIPMENT.

Wool-combing machines.—Six wool-combing machines were reported as used in the industry in 1909, three of American manufacture in Massachusetts, and three of foreign manufacture in Illinois. Wool-combing machines were not reported separately in 1904 and 1899, but only the total number of combing machines, while at the census of 1909 the number of wool-combing machines and not the total number of combing machines was reported.

Cards and spindles.—Table 24 shows the number of cards and spindles used in 1909, 1904, and 1899 in the hosiery and knit goods industry in the United States.

At the census of 1899 the number of sets of cotton, worsted, and shoddy cards was not reported. The decrease in the number of woolen and worsted cards and spindles and the increase in that of cotton cards and spindles is a marked feature of the statistics. In 1904 the number of cotton cards and of spindles was approximately the same as for woolen, worsted, and shoddy cards and spindles combined, but in 1909 cotton cards and spindles constituted two-thirds of the respective totals. During the decade 1899–1909 the number of cotton spindles increased 277,375, or 134.8 per cent, while that of woolen and worsted spindles decreased 57,612, or 18.9 per cent.

Table 24 HOSIERY AND KNIT GOODS INDUSTRY: 1909

CLASS.	Number.			Per cent of total.		
	1909	1904	1899	1909	1904	1899
Sets of cards	2,681	2,001	.....	100.0	100.0	100.0
Cotton	1,827	1,000	(1)	68.1	50.0	.....
Woolen	785	927	1,161	29.3	46.3	.....
Worsted	10	24	(1)	0.4	1.2	.....
Shoddy	59	50	(1)	2.2	2.5	.....
Spindles	736,774	603,180	521,871	100.0	100.0	100.0
Producing	729,935	596,362	510,172	99.1	98.9	97.8
Cotton	483,117	300,037	205,742	65.6	49.7	39.4
Woolen and shoddy	244,458	286,661	290,366	33.2	47.6	55.6
Worsted	2,360	9,664	14,064	0.3	1.6	2.7
Doubling and twisting	6,839	6,818	11,699	0.9	1.1	2.2

[1] Not reported.

Table 25 gives, by states, the statistics of cards and spindles for 1909.

Table 25 HOSIERY AND KNIT GOODS INDUSTRY: 1909

STATE.	Sets of cards.			Spindles.						
					Producing.					
						Mule.				
	Total.	Woolen, worsted, and shoddy.	Cotton.	Aggregate.	Total.	Total.	Woolen, worsted, and shoddy.	Cotton.	Frame.	Doubling and twisting.
United States	2,681	[1] 854	1,827	736,774	729,935	436,582	[2] 244,959	191,623	[3] 293,353	[4] 6,839
Alabama	30	.....	30	10,932	10,932	.....	.....	.....	10,932	.....
Connecticut	144	114	30	54,108	53,904	52,904	29,768	23,136	1,000	204
Georgia	139	.....	139	18,376	17,792	2,400	.....	2,400	15,392	584
Illinois	61	13	48	18,384	16,896	6,312	6,312	.....	10,584	1,488
Massachusetts	545	36	509	164,390	163,248	76,784	10,296	66,488	86,464	1,142
Michigan	67	15	52	19,316	18,344	5,528	4,412	1,116	12,816	972
New Hampshire	81	66	15	20,939	20,742	17,918	16,750	1,168	2,824	197
New Jersey	44	32	12	9,582	9,582	9,582	9,582	.....	.....	.....
New York	1,151	457	694	303,736	303,528	181,771	126,764	55,007	121,757	208
North Carolina	92	.....	92	25,232	24,944	13,264	.....	13,264	11,680	288
Ohio	13	13	.....	4,670	4,670	4,670	4,670	.....	.....	.....
Pennsylvania	115	43	72	34,684	33,648	28,912	15,312	13,600	4,736	1,036
South Carolina	16	.....	16	6,640	6,640	5,616	.....	5,616	1,024	.....
Tennessee	66	.....	66	11,892	11,892	.....	.....	.....	11,892	.....
Vermont	22	19	3	5,424	5,424	5,424	5,424	.....	.....	.....
Virginia	25	.....	25	7,572	7,572	7,572	.....	7,572	.....	.....
Wisconsin	22	20	2	6,729	6,345	6,345	6,345	.....	.....	384
All other states	48	26	22	14,168	13,832	11,580	9,324	2,256	2,252	336

[1] Includes 785 sets of woolen cards, 10 of worsted, and 59 of shoddy.
[2] Includes 241,699 woolen, 2,360 worsted, and 900 shoddy spindles.
[3] Includes 291,494 cotton and 1,859 woolen spindles.
[4] Includes 2,096 woolen, 1,055 worsted, and 3,688 cotton spindles.

The woolen cards and spindles are largely concentrated in New York and Connecticut. There were 416 sets of woolen cards in New York in 1909, as compared with 491 in 1904 and 674 in 1899; and 114 in Connecticut, as compared with 109 in 1904 and 134 in 1899. Of the total number of sets of cotton cards in 1909, New York and Massachusetts reported nearly two-thirds, and of the total number of producing spindles of all kinds these states reported 63.9 per cent.

Table 26 shows, for 1909, by states, the number of establishments reporting producing spindles and the number which did not, and also the number of producing spindles and the number of mills having 4,000 or more such spindles each, with the aggregate number of spindles in such mills.

New York reported 66 establishments with producing spindles and 18 of them had more than 4,000 spindles each. Of 37 establishments in New Jersey only 1 reported the operation of spindles, and in Pennsylvania, which had the largest number of establishments of any of the states (464), only 9 establishments reported spindles.

Table 26

STATE.	ESTABLISHMENTS IN THE HOSIERY AND KNIT GOODS INDUSTRY: 1909					
	Total number.	Without producing spindles.	With producing spindles.			
			Total.		Having 4,000 spindles or over.	
			Number.	Number of spindles.	Number.	Number of spindles.
United States	1,374	1,216	158	729,935	45	521,588
Alabama	6	4	2	10,932	2	10,932
Connecticut	21	6	15	53,904	5	31,260
Georgia	22	17	5	17,792	2	8,480
Illinois	43	41	2	16,896	2	16,896
Louisiana	1	.....	1	4,500	1	4,500
Massachusetts	65	56	9	163,248	4	151,160
Michigan	35	28	7	18,344	1	12,768
New Jersey	37	36	1	9,582	1	9,582
New York	360	294	66	303,528	18	209,956
North Carolina	62	59	3	24,944	2	22,136
Pennsylvania	464	455	9	33,648	4	26,586
South Carolina	7	6	1	6,640	1	6,640
Tennessee	22	19	3	11,892	2	10,692
All other states	229	195	34	54,085	.....	.....

Knitting machines.—Table 27 gives, for the United States, the number of the different kinds of knitting machines reported at the censuses of 1909, 1904, and 1899. Machines in establishments in other industries are not included in the table, but the number of such machines in 1909 is shown in the footnote.

In 1909 the total number of knitting machines reported by establishments in the industry was 115,019, as against 69,047 in 1899, an increase of 45,972, or 66.6 per cent. Over 96 per cent of all the knitting machines in 1909 were power machines. There was an increase of 3,167, or 21.8 per cent, in the number of spring-beard needle machines between 1899 and 1909, while the increase in the number of latch needle machines was 42,805, or 78.5 per cent. Latch needle machines constituted 84.6 per cent of the total number of machines in 1909, as compared with 79 per cent in 1889.

Circular and circular hosiery automatic machines formed 80.7 per cent of the total number in 1909 and 78.4 per cent in 1899, the proportion of circular hosiery machines increasing from 31.4 per cent of the total number in 1899 to 38.8 per cent in 1909, while that of circular machines fell during the same period from 47 per cent to 41.9 per cent.

Table 28 gives, by states, the knitting-machine equipment of the mills in 1909.

Table 27

KIND OF MACHINE.	NUMBER OF KNITTING MACHINES EMPLOYED IN THE HOSIERY AND KNIT GOODS INDUSTRY.		
	1909	1904	1899
Total	[1] 115,019	88,374	69,047
Power:			
Flat	10,423	6,964	6,714
Full-fashioned flat	3,388	3,542	2,361
Circular	48,142	39,409	32,470
Circular hosiery, automatic	44,676	31,961	21,693
All other	4,001	(2)	(2)
Hand (Lamb and other varieties)	4,389	[3] 6,498	[3] 5,809
Spring-beard needle	17,680	13,899	14,513
Power:			
Flat—			
Ribbed	964	1,455	1,691
Plain	1,387	756	1,432
Full-fashioned flat—			
Ribbed	209	260	65
Plain	1,968	1,195	1,069
Circular—			
Ribbed	2,188	1,087	1,467
Plain	6,068	7,163	6,753
Circular hosiery, automatic	3,815	1,648	1,700
All other	709	(2)	(2)
Hand (Lamb and other varieties)	372	335	336
Latch needle	97,339	74,475	54,534
Power:			
Flat—			
Ribbed	2,516	2,343	1,655
Plain	5,556	2,410	1,936
Full-fashioned flat—			
Ribbed	902	770	358
Plain	309	1,317	869
Circular—			
Ribbed	30,080	24,452	17,490
Plain	9,806	6,707	6,760
Circular hosiery, automatic	40,861	30,313	19,993
All other	3,292	(2)	(2)
Hand (Lamb and other varieties)	4,017	6,163	5,473
Per cent of total	100.0	100.0	100.0
Power	96.2	92.6	91.6
Flat	9.1	7.9	9.7
Full-fashioned flat	2.9	4.0	3.4
Circular	41.9	44.6	47.0
Circular hosiery, automatic	38.8	36.2	31.4
All other	3.5	.....	.....
Hand (Lamb and other varieties)	3.8	7.4	8.4
Spring-beard needle	15.4	15.7	21.0
Latch needle	84.6	84.3	79.0

[1] In addition, 32 establishments manufacturing hosiery and knit goods as secondary products, reported 1,232 knitting machines, comprising 69 flat power machines, 586 circular, 326 circular hosiery, 112 miscellaneous power machines, and 139 hand machines. Of the 1,232 machines, 307 were spring-beard needle and 925 were latch needle machines.

[2] Not reported.

[3] Not including machines used by manufacturers employing hand machines exclusively, which were not reported in 1904 and 1899.

Table 28

KNITTING MACHINES EMPLOYED IN THE HOSIERY AND KNIT GOODS INDUSTRY: 1909

STATE.	Total.	Power.								Hand (Lamb and other variety).
		Flat.		Full-fashioned flat.		Circular.		Circular hosiery, automatic.	All other.	
		Ribbed.	Plain.	Ribbed.	Plain.	Ribbed.	Plain.			
ALL CLASSES.										
United States	**115,019**	**3,480**	**6,943**	**1,111**	**2,277**	**32,268**	**15,874**	**44,676**	**4,001**	**4,389**
Alabama	429	...	28	...	...	136	8	257	...	...
California	228	8	102	...	1	30	24	20	...	43
Connecticut	2,501	168	97	95	428	225	652	670	155	11
Delaware	917	5	...	...	...	227	...	612	66	7
Georgia	3,530	...	...	...	...	779	646	2,011	94	...
Illinois	5,521	23	1,980	66	15	831	441	1,575	39	551
Indiana	1,050	99	42	15	190	310	...	354	23	17
Iowa	310	10	...	...	...	115	...	185	...	...
Maine	125	12	...	...	...	7	2	11	...	93
Maryland	1,021	...	...	...	...	250	...	735	31	5
Massachusetts	7,741	313	316	59	108	1,653	2,155	2,779	84	274
Michigan	2,754	106	256	42	50	1,049	559	308	25	359
Minnesota	497	19	29	...	10	255	25	102	...	57
New Hampshire	2,902	...	...	1	18	1,168	152	1,345	123	95
New Jersey	1,492	225	42	8	250	337	54	356	35	185
New York	15,047	990	1,597	200	103	6,209	3,470	527	601	1,290
North Carolina	6,395	40	20	22	...	1,368	318	4,353	274	...
Ohio	2,068	314	292	2	5	945	102	144	91	113
Pennsylvania	44,960	833	1,794	274	806	11,315	5,226	22,523	1,812	377
Rhode Island	1,669	14	20	...	73	542	661	357	...	2
South Carolina	1,375	...	6	...	...	470	48	786	65	...
Tennessee	3,929	20	158	...	...	1,902	597	1,252	...	...
Vermont	523	50	...	...	...	247	61	164	...	1
Virginia	1,304	10	84	...	100	386	130	450	144	...
Wisconsin	5,150	191	60	322	57	1,295	468	1,669	293	795
All other states	1,581	30	20	5	3	217	15	1,131	46	114
SPRING-BEARD NEEDLE.										
United States	**17,680**	**964**	**1,387**	**209**	**1,968**	**2,188**	**6,068**	**3,815**	**709**	**372**
Connecticut	1,428	141	97	3	428	20	599	140	...	...
Georgia	295	...	...	...	...	...	42	253	...	...
Illinois	71	4	...	24	4	4	...	21	...	14
Indiana	300	52	42	15	190	...	...	...	...	1
Massachusetts	1,820	89	68	15	89	572	926	16	20	25
Michigan	69	5	10	...	...	25	20	...	...	...
New Hampshire	32	...	...	1	18	10	3	...	...	...
New Jersey	537	24	...	7	250	19	47	99	11	80
New York	4,814	487	911	94	84	275	2,552	120	101	190
North Carolina	349	1	...	...	...	11	3	334	...	...
Ohio	141	10	19	...	...	86	22	4	...	...
Pennsylvania	5,072	92	90	48	800	518	953	2,034	517	20
Rhode Island	675	7	8	...	73	19	559	9	...	...
Tennessee	240	...	...	...	...	107	133	...	...	...
Vermont	243	50	...	...	...	131	61	...	...	1
Virginia	208	...	78	...	...	...	130	...	...	...
Wisconsin	995	2	25	2	32	284	1	592	20	37
All other states	391	...	39	...	...	107	8	193	40	4
LATCH NEEDLE.										
United States	**97,339**	**2,516**	**5,556**	**902**	**369**	**30,080**	**9,806**	**40,861**	**3,292**	**4,017**
Alabama	401	...	...	...	...	136	8	257	...	...
California	223	8	101	...	1	29	22	20	...	42
Connecticut	1,073	27	...	92	...	205	53	530	155	11
Delaware	917	5	...	...	...	227	...	612	66	7
Georgia	3,235	...	...	...	...	779	604	1,758	94	...
Illinois	5,450	19	1,980	42	11	827	441	1,554	39	537
Indiana	750	47	...	...	...	310	...	354	23	16
Iowa	260	10	...	...	...	105	...	145	...	...
Maine	125	12	...	...	...	7	2	11	...	93
Maryland	1,020	...	...	...	...	250	...	735	31	4
Massachusetts	5,921	224	248	44	19	1,081	1,229	2,763	64	249
Michigan	2,685	101	246	42	50	1,024	530	308	25	359
Minnesota	492	19	25	...	10	254	25	102	...	57
New Hampshire	2,870	...	...	...	...	1,158	149	1,345	123	95
New Jersey	955	201	42	1	...	318	7	257	24	105
New York	10,233	503	686	106	79	5,934	918	407	500	1,100
North Carolina	6,046	39	20	22	...	1,357	315	4,019	274	...
Ohio	1,927	304	273	2	5	859	140	140	91	113
Pennsylvania	39,888	741	1,704	226	6	10,797	4,273	20,489	1,295	357
Rhode Island	994	7	12	...	...	523	102	348	...	2
South Carolina	1,369	...	...	...	...	470	48	786	65	...
Tennessee	3,689	20	158	...	...	1,795	464	1,252	...	...
Vermont	280	...	...	...	...	116	...	164	...	...
Virginia	1,096	10	6	...	100	386	...	450	144	...
Wisconsin	4,155	189	35	320	25	1,011	467	1,077	273	758
All other states	1,285	30	20	5	3	122	9	978	6	112

In 1909 Pennsylvania reported nearly two-fifths of the total number of knitting machines, one-half of the circular automatic hosiery machines, and one-third of the circular machines (ribbed and plain combined). New York reported about one-eighth of the total number and one-fifth of the circular (ribbed and plain) machines, but only a small proportion of the automatic circular hosiery machines.

Sewing machines.—Table 29 gives the number of sewing machines employed in the industry in 1909, 1904, and 1899, and shows, by states, the number in 1909.

The total number reported increased 78.9 per cent during the decade 1899–1909. New York and Pennsylvania together reported more than two-thirds of the total for 1909.

Table 29

STATE.	Sewing machines employed in the hosiery and knit goods industry.	STATE.	Sewing machines employed in the hosiery and knit goods industry.
United States:		Individual states, 1909—Continued.	
1909	**43,885**	Minnesota	477
1904	**30,410**	New Hampshire	398
1899	**24,535**	New Jersey	654
Individual states, 1909:		New York	19,212
Alabama	115	North Carolina	909
California	124	Ohio	1,380
Connecticut	859	Pennsylvania	10,475
Delaware	85	Rhode Island	578
Georgia	721	South Carolina	104
Illinois	813	Tennessee	611
Indiana	298	Utah	190
Iowa	13	Vermont	409
Maine	8	Virginia	837
Maryland	36	Wisconsin	694
Massachusetts	2,869	All other states	96
Michigan	830		

DETAILED STATE TABLES.

The principal statistics secured by the census inquiry concerning the hosiery and knitting mills are presented, by states, in Tables 30 and 31.

Table 30 shows, for 1909, 1904, and 1899, the number of establishments, number of persons engaged in the industry, primary horsepower, capital invested, salaries, wages, cost of materials, value of products, and value added by manufacture.

Table 31 gives more detailed statistics for the industry for 1909 only.

HOSIERY AND KNIT GOODS—COMPARATIVE STATISTICS, BY STATES: 1909, 1904, AND 1899.

Table 30

STATE.	Census.	Number of establishments.	Persons engaged in industry. Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).	Primary horsepower.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture (value of products less cost of materials).
								Expressed in thousands.					
United States	1909	1,374	136,130	1,134	5,721	129,275	103,709	$163,641	$7,691	$44,740	$110,241	$200,144	$89,903
	1904	1,144	109,489	1,067	4,330	104,092	78,769	106,943	4,455	31,615	76,789	137,076	60,287
	1899	1,006	.....	.....	2,831	83,691	57,346	82,066	3,138	24,434	51,195	95,834	44,639
Alabama	1909	6	634	.....	23	611	750	627	28	124	314	591	277
	1904	8	531	4	22	505	805	563	18	93	254	460	206
	[1] 1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
California	1909	6	316	2	46	268	44	515	63	112	200	452	252
	1904	5	263	3	38	222	21	256	36	88	146	357	211
	1899	6	101	3	10	88	10	92	12	31	74	137	63
Connecticut	1909	21	3,524	2	182	3,340	3,540	6,464	324	1,363	3,049	5,801	2,752
	1904	24	3,703	7	102	3,594	3,642	5,815	163	1,305	2,825	5,371	2,546
	1899	25	3,356	12	101	3,243	3,108	6,149	159	1,131	2,203	4,044	1,841
Delaware	1909	4	508	1	15	492	200	289	13	122	282	449	167
	1904	7	352	2	27	323	275	213	18	75	164	296	132
	1899	7	603	2	19	582	246	299	15	123	209	429	220
Georgia	1909	22	2,880	3	134	2,743	2,048	3,270	155	719	1,872	3,233	1,361
	1904	21	2,027	4	88	1,935	2,095	1,947	93	396	1,417	2,326	909
	1899	16	1,254	.....	46	1,208	557	929	39	201	757	1,231	474
Illinois	1909	43	3,141	40	188	2,913	3,452	5,116	221	1,116	3,232	5,947	2,715
	1904	38	2,446	38	66	2,342	1,336	2,903	97	782	2,165	3,730	1,565
	1899	27	1,896	18	46	1,832	815	1,550	67	597	1,286	2,205	919
Indiana	1909	5	2,032	.....	99	1,933	1,393	2,406	178	687	915	2,381	1,466
	1904	5	1,804	.....	84	1,720	1,415	2,215	85	510	1,105	2,105	1,000
	1899	7	2,119	.....	103	2,016	1,360	2,728	201	703	1,200	2,424	1,224
Maine	1909	5	56	7	4	45	60	129	7	15	33	79	46
	1904	[2] 3	61	5	.....	56	2	16	.....	13	18	34	16
	1899	[2] 3	43	6	.....	37	.....	9	.....	7	11	29	18
Maryland	1909	11	1,062	10	30	1,022	460	930	29	234	697	1,172	475
	1904	[3] 4	919	4	39	876	405	639	29	196	531	952	421
	1899	[3] 4	712	2	28	682	160	312	15	119	347	514	167
Massachusetts	1909	65	10,287	37	309	9,941	9,113	12,477	516	3,855	6,972	14,736	7,764
	1904	62	8,417	54	244	8,119	10,390	7,836	318	2,842	5,021	10,095	5,074
	1899	63	6,891	45	167	6,679	6,691	6,306	213	2,097	2,917	6,641	3,724
Michigan	1909	35	2,818	19	254	2,545	3,291	3,735	325	769	2,047	4,029	1,982
	1904	38	3,274	14	175	3,085	2,501	3,284	175	769	1,844	3,624	1,780
	1899	[3] 32	2,714	4	201	2,509	1,456	2,136	188	580	1,459	2,791	1,332
Minnesota	1909	10	1,200	7	141	1,052	853	1,079	187	348	1,086	2,243	1,157
	1904	10	671	5	51	615	316	968	72	190	626	1,203	577
	1899	[3] 8	315	1	21	293	304	484	27	78	107	410	213
New Hampshire	1909	21	3,223	25	69	3,129	2,315	3,530	97	1,143	2,636	4,764	2,128
	1904	[3] 21	2,899	20	89	2,790	2,216	2,750	92	943	2,229	3,974	1,745
	1899	22	2,559	16	51	2,492	2,313	2,525	58	791	1,319	2,593	1,274
New Jersey	1909	37	2,658	34	118	2,506	1,477	3,489	210	903	1,826	3,810	1,984
	1904	28	1,840	26	56	1,758	1,077	1,053	67	539	1,382	2,549	1,167
	1899	25	1,938	15	62	1,861	913	1,093	74	451	1,011	1,782	771
New York	1909	360	37,673	302	1,421	35,950	35,882	52,582	2,042	14,839	38,677	67,130	28,453
	1904	271	30,694	224	1,105	29,365	25,316	35,316	1,284	10,160	28,210	46,320	18,110
	1899	258	27,700	250	824	26,626	21,551	30,307	942	8,098	20,266	36,028	15,762
North Carolina	1909	62	5,361	34	176	5,151	4,024	5,164	185	1,080	3,012	5,152	2,140
	1904	40	3,084	38	102	2,944	2,148	2,081	125	617	1,395	2,484	1,089
	1899	24	1,574	15	64	1,495	1,736	675	46	255	504	1,023	519
Ohio	1909	39	3,412	31	232	3,149	1,613	4,408	391	1,072	3,851	6,433	2,582
	1904	[2] 28	2,649	25	134	2,490	1,221	2,330	146	714	2,177	3,997	1,820
	1899	28	1,504	28	56	1,420	550	1,072	55	356	810	1,585	775
Pennsylvania	1909	464	40,248	509	1,533	38,206	21,797	38,989	1,658	11,750	27,218	49,658	22,440
	1904	377	30,054	506	1,377	28,171	14,749	23,933	1,067	7,961	16,038	30,812	14,774
	1899	327	22,648	376	688	21,584	9,478	15,760	638	5,834	10,936	21,929	10,993
Rhode Island	1909	17	1,849	9	66	1,774	1,026	2,878	147	635	2,444	3,866	1,422
	1904	[3] 15	1,802	9	72	1,721	1,565	2,277	100	574	2,271	3,345	1,074
	1899	18	1,675	13	66	1,596	1,231	2,454	88	470	1,771	2,725	954
South Carolina	1909	7	864	3	22	839	597	755	26	152	334	655	321
	1904	14	1,103	5	40	1,058	890	824	30	187	586	1,079	493
	1899	6	377	3	15	359	501	345	14	74	238	392	154
Tennessee	1909	22	3,229	2	110	3,117	2,758	3,055	125	724	2,120	3,565	1,445
	1904	16	1,855	4	41	1,810	1,052	1,160	41	341	969	1,628	659
	1899	4	523	.....	12	511	212	217	15	73	249	395	146
Utah	1909	11	212	6	32	174	80	311	28	53	292	419	127
	1904	[3] 9	214	4	39	171	25	199	28	48	167	326	159
	1899	5	108	4	13	91	5	53	5	22	24	66	42
Vermont	1909	8	974	7	21	946	962	1,753	44	411	1,089	1,746	657
	1904	11	966	14	36	916	1,351	1,388	42	366	1,216	1,989	773
	1899	14	1,082	9	32	1,041	1,213	1,590	42	390	1,115	1,835	720
Virginia	1909	11	1,780	7	58	1,715	1,079	1,093	88	503	1,467	2,463	996
	1904	14	1,913	11	60	1,842	1,211	716	49	430	1,326	2,108	782
	1899	15	1,887	4	38	1,845	1,203	979	36	395	798	1,498	700
Wisconsin	1909	61	4,659	28	349	4,282	2,312	6,183	508	1,570	3,887	7,843	3,956
	1904	50	4,476	18	205	4,253	2,112	4,404	235	1,187	2,298	4,979	2,681
	1899	39	2,881	26	125	2,730	1,169	2,571	150	602	1,186	2,508	1,322
All other states	1909	21	1,530	9	89	1,432	1,074	1,514	96	432	689	1,527	838
	1904	25	1,472	23	38	1,411	639	963	45	289	409	933	524
	1899	23	.....	.....	43	871	564	531	39	146	308	620	312

[1] Figures can not be shown without disclosing individual operations.
[2] Excluding statistics for two establishments, to avoid disclosure of individual operations.
[3] Excluding statistics for one establishment, to avoid disclosure of individual operations.

HOSIERY AND KNIT GOODS—DETAILED STATISTICS, BY STATES: 1909.

Table 31

STATE.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY. Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks. Male.	Clerks. Female.	Wage earners. Average number.	Wage earners. Number 15th day of— Maximum month.	Wage earners. Number 15th day of— Minimum month.	WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY. Total.	16 and over. Male.	16 and over. Female.	Under 16. Male.	Under 16. Female.	Primary horsepower.
United States	**1,374**	**136,130**	**1,134**	**2,174**	**2,398**	**1,149**	**129,275**	**No 134,540**	**Ja 123,308**	**136,713**	**37,419**	**88,183**	**3,219**	**7,892**	**103,709**
Alabama	6	634	.....	15	6	2	611	De 667	Je 560	645	156	312	60	117	750
California	6	316	2	11	26	9	268	Au[1] 289	My 248	284	40	242	.....	2	44
Connecticut	21	3,524	2	56	98	28	3,340	Je 3,501	Au 2,918	3,493	1,076	2,308	24	85	3,540
Delaware	4	508	1	9	3	3	492	My 525	Fe 458	526	80	366	17	54	200
Georgia	22	2,880	3	53	64	17	2,743	De 2,897	Ja 2,626	2,897	834	1,596	193	274	2,948
Illinois	43	3,141	40	52	103	33	2,913	No 3,091	Ja 2,678	3,137	938	1,987	53	159	3,452
Indiana	5	2,032	.....	16	59	24	1,933	No 2,100	Ja 1,782	2,094	550	1,140	186	218	1,393
Iowa	4	279	.....	13	9	6	251	Jy 293	Oc 189	248	48	159	10	31	229
Maine	5	56	7	2	2	.....	45	Au 52	Mh 38	52	23	27	.....	2	69
Maryland	11	1,062	10	15	9	6	1,022	Ja 1,046	Oc 1,002	1,021	192	666	51	112	460
Massachusetts	65	10,287	37	110	121	78	9,941	No 10,399	Ja 9,625	10,287	4,284	5,549	128	326	9,113
Michigan	35	2,818	19	78	100	76	2,545	No 2,671	Ja 2,237	2,675	560	2,044	21	50	3,291
Minnesota	10	1,200	7	28	66	47	1,052	Oc 1,173	Ja 835	949	148	776	2	23	853
New Hampshire	21	3,223	25	38	10	21	3,129	No 3,246	Au 3,011	3,302	1,034	2,204	27	37	2,315
New Jersey	37	2,658	34	60	44	14	2,506	No 2,780	Ja 2,256	2,707	1,028	1,604	36	99	1,477
New York	360	37,673	302	479	655	287	35,950	No 37,244	Ja 33,712	38,419	13,289	24,424	165	541	35,882
North Carolina	62	5,361	34	111	50	15	5,151	De 5,292	Ja 4,980	5,411	1,219	2,691	562	939	4,024
Ohio	39	3,412	31	84	100	48	3,149	Au 3,427	Ja 2,682	3,371	557	2,578	32	204	1,613
Pennsylvania	464	40,248	509	651	583	299	38,206	No 39,911	Fe 36,957	40,326	7,766	28,045	1,124	3,391	21,797
Rhode Island	17	1,849	9	28	18	20	1,774	De 1,825	Au 1,711	1,880	374	1,374	9	123	1,626
South Carolina	7	864	3	12	8	2	839	Ja 863	No 807	822	293	375	68	86	597
Tennessee	22	3,229	2	60	28	22	3,117	Ap 3,191	Mh 3,038	3,261	841	1,878	209	333	2,758
Utah	1	212	6	15	8	9	174	No 223	Ja 125	214	36	175	3	.....	80
Vermont	8	974	7	10	7	4	946	No 1,000	Au 863	977	341	631	1	4	962
Virginia	11	1,780	7	34	22	2	1,715	De 1,764	Ja 1,633	1,764	579	957	96	132	1,079
Wisconsin	61	4,659	28	98	183	68	4,282	De 4,513	Ja 3,938	4,513	797	3,236	69	411	2,312
All other states[2]	17	1,251	9	36	16	9	1,181	.....	.....	1,378	327	839	73	139	845

STATE.	Capital.	EXPENSES. Total.	Services. Officials.	Services. Clerks.	Services. Wage earners.	Materials. Fuel and rent of power.	Materials. Other.	Miscellaneous. Rent of factory.	Miscellaneous. Taxes, including internal revenue.	Miscellaneous. Contract work.	Miscellaneous. Other.	Value of products.	Value added by manufacture (value of product less cost of material).
United States	**$163,641,171**	**$175,729,583**	**$4,317,022**	**$3,374,435**	**$44,740,223**	**$1,970,277**	**$108,270,776**	**$772,606**	**$572,735**	**$2,158,078**	**$9,553,431**	**$200,143,527**	**$89,902,474**
Alabama	627,282	508,184	22,180	6,020	124,096	10,653	303,002	622	1,818	.....	39,793	591,000	277,345
California	515,170	436,259	30,720	32,703	112,261	1,819	197,813	5,443	903	.....	54,597	451,970	252,338
Connecticut	6,463,632	5,225,820	158,412	165,825	1,363,148	67,643	2,980,904	13,372	44,370	31,518	400,628	5,800,692	2,752,145
Delaware	288,941	427,438	10,803	1,821	122,212	4,152	277,948	.....	760	.....	9,742	448,987	166,887
Georgia	3,269,652	2,975,327	81,512	73,578	718,931	61,757	1,810,679	.....	15,428	.....	213,442	3,232,623	1,360,187
Illinois	5,115,992	4,038,859	105,179	115,841	1,116,476	56,391	3,175,974	38,128	14,957	38,825	277,088	5,946,737	2,714,372
Indiana	2,405,786	1,966,913	73,562	104,409	686,755	20,429	894,204	881	9,743	.....	116,930	2,381,219	1,466,586
Iowa	420,276	304,848	18,120	6,426	78,500	6,394	149,241	958	787	.....	44,422	325,500	169,865
Maine	128,593	65,357	2,500	4,000	14,621	2,078	30,467	300	353	8,919	2,119	78,586	46,041
Maryland	929,500	1,045,862	16,550	12,567	233,819	15,256	681,899	1,560	2,667	40,574	40,970	1,172,325	475,170
Massachusetts	12,477,388	12,287,791	300,396	206,677	3,854,828	174,846	6,796,760	28,717	95,280	168,501	652,786	14,736,025	7,764,419
Michigan	3,734,803	3,483,550	133,387	191,632	768,956	51,910	1,994,696	13,122	29,874	101,303	198,670	4,029,105	1,982,499
Minnesota	1,978,729	1,701,799	56,221	130,318	348,310	17,517	1,068,553	2,450	7,121	.....	161,309	2,242,694	1,156,624
New Hampshire	3,529,826	4,157,043	76,137	20,761	1,143,227	35,095	2,599,678	2,690	13,093	128,181	137,281	4,764,119	2,128,446
New Jersey	3,489,294	3,048,159	138,865	70,741	903,311	39,254	1,786,624	13,743	8,232	5,658	81,731	3,810,241	1,984,363
New York	52,582,240	50,754,254	1,149,844	891,969	14,838,655	648,588	38,028,783	230,545	156,689	692,058	3,117,123	67,130,296	28,452,925
North Carolina	5,164,117	4,496,511	136,849	47,874	1,080,410	92,812	2,919,483	4,915	21,625	3,117	189,426	5,151,692	2,139,397
Ohio	4,407,562	5,760,921	229,642	160,950	1,071,780	37,563	3,813,856	44,033	14,319	32,156	356,622	6,433,431	2,582,012
Pennsylvania	38,989,088	43,892,123	992,064	665,889	11,750,386	421,700	26,796,251	276,882	72,816	687,872	2,228,263	49,657,506	22,439,555
Rhode Island	2,878,478	3,381,983	85,910	61,338	635,119	29,795	2,414,662	4,936	10,369	7,693	132,161	3,865,792	1,421,335
South Carolina	755,398	576,254	19,787	6,010	151,629	13,321	320,549	406	7,510	49,043	7,999	655,340	321,470
Tennessee	3,054,790	3,265,867	83,171	41,530	723,756	42,916	2,077,309	4,740	8,803	46,921	236,721	3,565,436	1,445,211
Utah	311,224	390,342	16,501	11,479	52,792	3,307	289,066	2,948	1,673	.....	12,576	419,229	126,856
Vermont	1,752,780	1,653,483	31,536	12,780	410,770	17,597	1,071,451	15,038	1,686	.....	92,625	1,745,670	656,622
Virginia	1,093,087	2,219,821	65,233	22,300	503,224	25,727	1,441,409	26,264	5,158	7,807	122,699	2,462,787	995,651
Wisconsin	6,183,128	6,698,050	212,663	295,465	1,578,816	59,960	3,827,236	29,592	23,967	107,932	562,419	7,843,389	3,956,193
All other states[2]	1,094,415	1,036,765	60,278	13,532	353,435	10,897	522,279	10,321	2,734	.....	63,289	1,201,136	667,960

[1] Same number reported for one or more other months.
[2] "All other states" embrace: Colorado, 1 establishment; Idaho, 1; Kansas, 1; Kentucky, 2; Louisiana, 1; Mississippi, 1; Missouri, 2; Nebraska, 1; Oregon, 1; Texas, 1; Washington, 3; West Virginia, 2.

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THE WOOLEN INDUSTRY

WOOLEN, WORSTED, AND FELT GOODS AND WOOL HATS
CARPETS AND RUGS, OTHER THAN RAG
SHODDY
WOOL PULLING AND WOOL SCOURING

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THE WOOLEN INDUSTRY.

WOOLEN, WORSTED, AND FELT GOODS, AND WOOL HATS.

GENERAL STATISTICS.

GENERAL SUMMARY.

Scope of the industry.—The industry designated "woolen, worsted, and felt goods, and wool hats" (referred to for brevity as "the woolen industry") includes four classes of establishments distinguished on the basis of their primary products, as follows: (1) Those producing woolen goods, (2) those producing worsted goods, (3) those producing felt goods, and (4) those producing wool hats. Establishments engaged primarily in manufacturing carpets and rugs have been included in the woolen industry at previous censuses, but it was thought better in 1909 to present statistics for the manufacture of carpets and rugs as a separate industry. It has been possible in most cases, however, to revise the statistics for prior censuses by omitting the figures relating to the manufacture of carpets and rugs, so as to make them comparable with the statistics presented for 1909. The remanufacture of fiber from rags, tailor's clippings, and all kinds of mill waste, constituting the shoddy industry, is likewise treated as a separate industry.

It may be noted that the four branches of the woolen industry are coordinate—that is, no branch is engaged primarily in preparing materials for any other branch. Within the woolen goods and worsted goods branches, however, more particularly in the latter, there is duplication in the cost of materials and value of products by reason of the use of some of the products—principally yarn—of certain mills as materials for other mills.

In general, only the totals for the industry as a whole are shown in the tables of Volumes VIII and IX of the Thirteenth Census Reports, and it has been considered unnecessary to show separate figures for the four branches in compiling the majority of the tables of the present report.

Summary for the four branches of the industry: 1909.—Table 1 presents for 1909 a summary for the woolen industry as a whole and for each of its branches.

Table 1 — THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS): 1909

	Total for the industry.	Establishments engaged primarily in manufacturing—				Per cent of total contributed by establishments engaged primarily in manufacturing—			
		Woolen goods.	Worsted goods.	Felt goods.	Wool hats.	Woolen goods.	Worsted goods.	Felt goods.	Wool hats.
Number of establishments	985	587	324	43	31	59.6	32.9	4.4	3.1
Persons engaged in the industry	175,176	54,771	114,422	3,856	2,127	31.3	65.3	2.2	1.2
Proprietors and firm members	732	480	197	19	36	65.6	26.9	2.6	4.9
Salaried employees	5,722	2,111	3,213	293	105	36.9	56.2	5.1	1.8
Wage earners (average number)	168,722	52,180	111,012	3,544	1,986	30.9	65.8	2.1	1.2
Primary horsepower	362,209	132,830	215,453	11,405	2,521	36.7	59.5	3.1	0.7
Capital	$430,578,574	$120,320,070	$295,057,923	$12,724,833	$2,475,748	27.9	68.5	3.0	0.6
Expenses	387,998,515	98,079,318	275,828,061	10,167,551	3,923,585	25.3	71.1	2.6	1.0
Services	82,523,776	25,897,653	53,186,618	2,326,151	1,113,354	31.4	64.5	2.8	1.3
Salaries	10,097,157	3,322,478	6,034,747	614,271	125,661	32.9	59.8	6.1	1.2
Wages	72,426,619	22,575,175	47,151,871	1,711,880	987,693	31.2	65.1	2.4	1.4
Materials	282,878,039	65,651,634	207,786,936	6,967,206	2,472,263	23.2	73.5	2.5	0.9
Miscellaneous	22,596,700	6,530,031	14,854,507	874,194	337,968	28.9	65.7	3.9	1.5
Value of products	435,978,558	107,118,858	312,624,663	11,852,626	4,382,411	24.6	71.7	2.7	1.0
Value added by manufacture (value of products less cost of materials)	153,100,519	41,467,224	104,837,727	4,885,420	1,910,148	27.1	68.5	3.2	1.2

Of the 985 establishments reported for 1909 for the industry as a whole, 911, or 92.5 per cent, were woolen or worsted mills. Of the total value of products for the industry, these two classes of establishments together contributed $419,743,521, or 96.3 per cent, a proportion, however, somewhat exaggerated by reason of the duplication above mentioned.

Of the total value of products for the industry as a whole, 71.7 per cent was reported from worsted mills, 24.6 per cent from woolen mills, 2.7 per cent from mills manufacturing felt goods, and 1 per cent from wool-hat factories. The worsted mills reported 65.8 per cent of the total number of wage earners, the woolen mills 30.9 per cent, the felt goods establishments 2.1 per cent, and the establishments making wool hats 1.2 per cent.

The establishments in the industry as a whole in 1909 gave occupation to an average of 175,176 persons, of whom 168,722 were wage earners, and paid out $82,523,776 in salaries and wages.

The cost of the materials used in these branches of the industry in 1909 was $282,878,039, which was equal to 64.9 per cent of the total value of products ($435,978,558), and the value added by manufacture (that is, the value of products less cost of materials) was $153,100,519. Were it not for the duplication in the cost of materials,

however, that item would represent a somewhat smaller proportion of the value of products.

Comparison with earlier censuses.—Table 2 summarizes the statistics of these four branches of the woolen industry for each census from 1869 to 1909, inclusive. The financial figures for 1869 are given in currency, which at that time was worth only about 80 cents, gold, to the dollar. For strict comparison, therefore, the figures for that year should be reduced about 20 per cent. Variations from census to census in the relative amount of duplication involved may also affect the comparability of the figures for cost of materials and value of products.

Table 2

	THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).											
	Number or amount.						Per cent of increase.[1]					
	1909	1904	1899	1889	1879	1869	1899–1909	1904–1909	1899–1904	1889–1899	1879–1889	1869–1879
Number of establishments	985	1,074	1,281	1,520	2,135	2,993	−23.1	−8.3	−16.2	−15.7	−28.8	−28.7
Persons engaged in the industry	175,176	152,306	135,504	(2)	(2)	(2)	29.3	15.0	12.4	.....	.....	.....
Proprietors and firm members	732	958	999	(2)	(2)	(2)	−26.7	−23.6	−4.1	.....	.....	.....
Salaried employees	5,722	4,593	3,808	(2)	(2)	(2)	50.3	24.6	20.6	.....	.....	.....
Wage earners (average number)	168,722	146,755	130,697	125,535	112,301	92,973	29.1	15.0	12.3	4.1	(3)	(3)
Primary horsepower	362,209	288,969	244,825	187,958	129,567	(2)	47.9	25.3	18.0	30.3	45.1	.....
Capital	$430,578,574	$314,080,617	$265,730,450	$207,677,901	$122,043,691	$108,910,309	62.0	37.1	18.2	28.0	70.2	12.1
Expenses	387,998,515	285,893,406	220,894,992	199,156,258	(2)	(2)	75.6	35.7	29.4	10.9	.....	.....
Services	82,523,776	63,853,945	52,386,531	46,764,354	33,852,394	31,246,432	57.5	29.2	21.9	12.0	38.1	8.3
Salaries	10,097,157	6,780,654	5,574,097	(2)	(2)	(2)	81.1	48.9	21.7	.....	.....	.....
Wages	72,426,619	57,073,291	46,812,434	(2)	(2)	(2)	54.7	26.9	21.9	.....	.....	.....
Materials	282,878,039	204,613,142	153,930,408	138,589,082	130,175,723	110,740,799	83.8	38.2	32.9	11.1	6.5	17.6
Miscellaneous	22,596,700	17,426,319	14,578,053	13,802,822	(2)	(2)	55.0	20.7	19.5	5.6	.....	.....
Value of products	435,978,558	319,347,570	248,798,133	222,757,318	206,292,884	177,495,689	75.2	36.5	28.4	11.7	8.0	16.2
Value added by manufacture (value of products less cost of materials)	153,100,519	114,734,428	94,867,725	84,168,236	76,117,161	66,754,890	61.4	33.4	20.9	12.7	10.6	14.0

[1] A minus sign (−) denotes decrease. Where percentages are omitted, comparable figures are not available.
[2] Comparable figures not available.
[3] Figures not strictly comparable.

The value of products of the woolen industry in 1909 showed an increase of 145.6 per cent over the value in 1869. The number of establishments, however, decreased continuously from 2,993 in 1869 to 985 in 1909. The number of proprietors and firm members also declined from 999 in 1899 (the first census year for which figures are available) to 732 in 1909—a decrease of 26.7 per cent. These decreases are evidently due to the steadily increasing predominance of corporations in the industry and to the consolidation of establishments which has accompanied this movement. During the decade 1899–1909 there was an increase of 29.1 per cent in the number of wage earners employed, an increase of 54.7 per cent in the amount of wages paid, and an increase of 75.2 per cent in the value of products. The growth of the industry, as measured by the increase in number of wage earners, primary horsepower, and value of products, was greater relatively during this decade than during any other covered by the table.

Comparative statistics for the woolen industry, including the manufacture of carpets and rugs.—At prior censuses, as already stated, the manufacture of carpets and rugs, for which wool forms the chief material, has been associated with the four branches shown in Table 1 as a part of the woolen industry. Table 3, which gives combined statistics for the woolen industry and the carpet and rug industry for each census from 1869 to 1909, is therefore presented for purposes of comparison.

Table 3

	THE WOOLEN INDUSTRY AND THE CARPET AND RUG INDUSTRY COMBINED.											
	Number or amount.						Per cent of increase.[1]					
	1909	1904	1899	1889	1879	1869	1899–1909	1904–1909	1899–1904	1889–1899	1879–1889	1869–1879
Number of establishments	1,124	1,213	1,414	1,693	2,330	3,208	−20.5	−7.3	−14.2	−16.5	−27.3	−27.4
Persons engaged in the industry	209,882	180,699	164,713	(2)	(2)	(2)	27.4	12.4	13.3	.....	.....	.....
Proprietors and firm members	866	1,107	1,110	(2)	(2)	(2)	−22.0	−21.8	−0.3	.....	.....	.....
Salaried employees	6,987	5,616	4,495	(2)	(2)	(2)	55.4	24.4	24.9	.....	.....	.....
Wage earners (average number)	202,029	179,976	159,108	154,271	132,672	105,071	27.0	12.3	13.1	(3)	(3)	(3)
Primary horsepower	400,762	322,914	271,565	210,642	140,058	(2)	47.6	24.1	18.9	28.9	50.4	.....
Capital	$506,205,584	$370,861,691	$310,179,749	$245,886,743	$143,512,278	$121,451,059	63.2	36.5	19.6	26.1	71.3	18.2
Expenses	450,309,625	343,124,430	262,878,371	241,253,720	(2)	(2)	71.3	31.2	30.5	9.0	.....	.....
Services	100,268,868	78,974,869	64,389,312	58,397,470	40,687,612	35,928,150	55.7	27.0	22.7	10.3	43.5	13.2
Salaries	12,306,199	8,177,345	6,455,495	(2)	(2)	(2)	90.6	50.5	26.7	.....	.....	.....
Wages	87,962,669	70,797,524	57,933,817	(2)	(2)	(2)	51.8	24.2	22.2	.....	.....	.....
Materials	322,441,043	242,561,096	181,159,127	167,233,987	149,160,600	124,318,792	78.0	32.9	33.9	8.3	12.1	20.0
Miscellaneous	27,599,714	21,588,465	17,329,932	15,622,263	(2)	(2)	59.3	27.8	24.6	10.9	.....	.....
Value of products	507,166,710	380,934,003	296,990,484	270,527,511	238,085,686	199,257,262	70.8	33.1	28.3	9.8	13.6	19.5
Value added by manufacture (value of products less cost of materials)	184,725,667	138,372,907	115,831,357	103,293,524	88,925,086	74,938,470	59.5	33.5	19.5	12.1	16.2	18.7

[1] A minus sign (−) denotes decrease. Where percentages are omitted, comparable figures are not available.
[2] Comparable figures not available.
[3] Figures not strictly comparable.

Summary, by states.—Table 4 summarizes the more important statistics of the woolen industry as a whole, by states, the states being arranged according to the value of products reported for 1909. Some states for which figures can not be shown separately ranked higher in certain items than some named in the table.

Table 4

THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).

STATE.	Number of establishments: 1909	Wage earners.				Value of products.				Value added by manufacture.				Per cent of increase.[1]								
		Average number: 1909	Per cent of total: 1909	Rank.		Amount: 1909	Per cent of total: 1909	Rank.		Amount: 1909	Per cent of total: 1909	Rank.		Wage earners (average number).			Value of products.			Value added by manufacture.		
				1909	1904			1909	1904			1909	1904	1899-1909	1904-1909	1899-1904	1899-1909	1904-1909	1899-1904	1899-1909	1904-1909	1899-1904
United States.	985	168,722	100.0	.....	.....	$435,978,558	100.0	.....	.....	$153,100,519	100.0	.....	.....	29.1	15.0	12.3	75.2	36.5	28.4	61.4	33.4	20.9
Massachusetts	183	53,873	31.9	1	1	141,966,882	32.6	1	1	53,990,551	35.3	1	1	43.3	22.3	17.2	91.7	42.9	34.1	86.5	47.8	26.2
Pennsylvania	217	27,409	16.2	2	2	77,446,996	17.8	2	2	22,812,911	14.9	3	2	11.3	13.0	−1.5	58.8	38.5	14.7	31.1	22.1	7.4
Rhode Island	88	24,924	14.8	3	3	74,600,240	17.1	3	3	23,574,864	15.4	2	3	.....	15.3	.....	.....	41.7	.....	.....	41.1	.....
New Jersey	33	12,652	7.5	4	4	33,938,637	7.8	4	6	12,905,758	8.4	4	6	79.3	40.8	27.3	176.6	107.0	33.6	177.9	123.8	24.2
New York	64	9,460	5.6	6	5	23,739,421	5.4	5	4	8,995,393	5.9	5	4	0.4	5.8	−5.1	50.4	21.9	23.4	26.7	2.7	23.4
Connecticut	56	7,789	4.6	8	7	19,363,228	4.4	6	7	6,525,086	4.3	7	7	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maine	65	8,754	5.2	7	6	18,490,120	4.2	7	5	7,128,523	4.6	6	5	.....	.....	22.2	.....	.....	31.1	.....	.....	23.8
New Hampshire	39	9,486	5.6	5	8	16,730,652	3.8	8	8	5,635,582	3.7	8	8	.....	44.1	.....	.....	17.1	.....	.....	17.3	.....
Ohio	20	2,566	1.5	9	10	7,690,149	1.8	9	10	3,074,120	2.0	9	10	107.9	44.7	43.7	172.1	114.4	26.9	168.5	112.0	26.6
Vermont	17	2,294	1.4	10	9	4,496,903	1.0	10	9	1,617,902	1.0	10	9	.....	2.6	.....	.....	−4.3	.....	.....	−15.0	.....
Wisconsin	33	1,046	0.6	12	12	2,229,708	0.5	11	11	853,851	0.6	11	11	−1.6	.....	.....	20.2	.....	.....	23.2	.....	.....
Tennessee	21	1,654	1.0	11	11	1,802,311	0.4	12	13	675,578	0.4	13	12	1.3	16.9	−13.3	18.3	5.6	12.5	5.0	−11.3	18.4
Michigan	15	554	0.3	17	18	1,571,364	0.4	13	14	708,525	0.5	12	14	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indiana	11	776	0.5	14	13	1,569,965	0.4	14	12	514,282	0.3	15	13	.....	.....	.....	.....	.....	.....	.....	.....	.....
Illinois	9	499	0.3	19	20	1,314,100	0.3	15	19	540,944	0.3	14	18	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kentucky	14	818	0.5	13	14	1,277,917	0.3	16	15	419,669	0.3	19	16	.....	−10.8	.....	.....	0.4	.....	.....	−15.7	.....
West Virginia	13	590	0.4	16	22	1,224,247	0.3	17	22	420,688	0.3	17	22	.....	.....	.....	.....	.....	.....	.....	.....	.....
Virginia	16	542	0.3	18	16	999,441	0.2	18	16	432,348	0.3	16	17	49.7	−16.5	79.3	59.1	−20.1	99.0	83.0	−11.8	107.6
Oregon	8	469	0.3	20	19	928,654	0.2	19	18	401,881	0.3	20	15	−30.2	−17.1	−15.8	3.5	−10.2	15.1	−6.9	−25.3	24.5
Georgia	7	669	0.4	15	17	870,520	0.2	20	23	427,788	0.3	18	23	17.6	2.0	15.3	77.4	32.8	33.6	102.8	84.5	10.0
Minnesota	10	277	0.2	23	23	698,576	0.2	21	21	269,848	0.2	22	20	−7.7	−19.2	14.3	40.6	−11.6	59.2	20.0	−17.7	45.8
North Carolina	11	424	0.2	21	23	675,265	0.2	22	25	283,296	0.2	21	26	105.8	23.6	66.5	132.8	21.4	91.7	.....	88.7	.....
California	5	272	0.2	24	21	585,410	0.1	23	20	266,748	0.2	23	21	−36.7	.....	.....	−14.8	.....	.....	−4.3	.....	.....
Iowa	8	134	0.1	26	25	349,569	0.1	25	24	121,701	0.1	25	24	−47.7	−45.5	−3.9	17.8	−38.9	92.9	.....	−41.3	70.5
All other states	16	791	0.5	.....	.....	1,418,283	0.3	.....	.....	493,682	0.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

[1] Percentages are based on figures in Table 48. A minus sign (−) denotes decrease. Percentage not shown where base is less than $100,000 for value added by manufacture, or where comparative figures can not be given without disclosing individual operations.

While the industry is largely concentrated in the New England and Middle Atlantic states, establishments were reported from 34 states of the Union. Massachusetts is by far the most important state in the industry, having reported in 1909, 32.6 per cent of the total value of products and 31.9 per cent of the total number of wage earners. Pennsylvania ranked second both in 1909 and in 1904 in number of wage earners and value of products; in 1909, however, it ranked below Rhode Island in value added by manufacture, whereas it ranked second in this respect in 1904. In 1909 Rhode Island ranked third in number of wage earners employed and in value of products.

Of the states for which the percentages of increase are given in the table, New Jersey shows the greatest relative increase in value of products for the decade (176.6 per cent), Ohio following with 172.1 per cent.

PERSONS ENGAGED IN THE INDUSTRY.

Summary: 1909.—Table 5 shows for 1909 the number of persons engaged in the industry as a whole and in the four branches, classified according to occupational status and sex, and in the case of wage earners according to age also. It should be borne in mind that the sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

The average number of persons engaged in the industry as a whole during 1909 was 175,176, of whom 168,722, or 96.3 per cent, were wage earners, 3,192, or 1.8 per cent, proprietors and officials, and 3,262, or 1.9 per cent, clerks, this class including other subordinate salaried employees. Of the total number of persons engaged in the industry, 99,307, or 56.7 per cent, were males, and 75,869, or 43.3 per cent, females. The average number of children employed as wage earners was 9,576, or 5.7 per cent of all the wage earners reported for the industry.

In the woolen mills, 35.8 per cent of the wage earners were females and 3.3 per cent children of both sexes; in the worsted mills, 49.6 per cent were females and 7 per cent children; in the felt goods factories, 20.8 per cent were females and eight-tenths of 1 per cent children; and in the wool hat factories 27.7 per cent were females and 1.6 per cent children.

The average number of wage earners in each state for 1909, 1904, and 1899 is given in Table 48. The average number distributed by sex and age is not shown for the individual states, but Table 49 gives such a distribution for the number employed on December 15, 1909, or the nearest representative day. Of the female wage earners, the largest number, 23,209, was reported from Massachusetts, and the next largest number, 14,545, from Pennsylvania.

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Wage earners employed, by months.—Table 10 gives the number of wage earners employed in the industry on the 15th (or the nearest representative day) of each month during the year 1909 for the 18 states in which an average of 500 or more wage earners were employed during the year.

Table 10

WAGE EARNERS EMPLOYED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS): 1909 [1]

STATE.	Average number during the year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
United States	**168,722**	**158,318**	**161,120**	**165,585**	**166,851**	**168,015**	**171,946**	**170,818**	**170,295**	**171,747**	**173,321**	**173,943**	**172,693**
Connecticut	7,789	*7,110*	7,483	7,639	7,633	7,855	8,069	7,923	7,758	7,922	7,949	8,061	8,071
Georgia	660	648	657	651	647	*639*	641	649	665	676	**699**	675	670
Indiana	776	727	737	743	745	774	821	830	895	794	788	787	761
Kentucky	818	*680*	775	799	803	836	838	844	850	830	842	873	850
Maine	8,754	*8,021*	8,313	8,509	8,589	8,643	8,708	8,846	8,665	8,896	9,111	9,307	9,373
Massachusetts	53,873	*49,715*	50,868	52,663	52,968	53,426	54,665	54,944	54,917	55,439	**55,879**	55,845	55,153
Michigan	554	516	524	555	550	552	565	*515*	524	560	585	589	606
New Hampshire	9,486	9,440	*9,237*	9,409	9,425	9,567	9,648	9,408	**9,694**	9,289	9,457	9,604	9,651
New Jersey	12,652	*11,816*	11,995	12,122	12,171	12,190	12,586	12,755	12,858	13,022	13,262	13,329	13,712
New York	9,460	*8,771*	8,863	9,312	9,376	9,358	**9,950**	9,678	9,578	9,670	9,769	9,647	9,538
Ohio	2,566	*2,358*	2,384	2,452	2,481	2,544	2,597	2,683	**2,724**	2,666	2,626	2,621	2,656
Pennsylvania	27,409	*25,796*	26,140	26,495	27,767	27,440	28,214	27,842	27,376	27,510	27,050	**28,383**	27,986
Rhode Island	24,924	*24,072*	24,480	25,420	24,880	25,128	25,203	24,811	24,800	**25,604**	25,365	25,011	24,302
Tennessee	1,654	*1,569*	1,576	1,598	1,591	1,681	**1,746**	1,729	1,741	1,666	1,675	1,644	1,637
Vermont	2,294	2,263	2,245	2,271	2,245	2,282	2,351	2,149	*2,143*	2,222	2,359	2,492	**2,508**
Virginia	542	526	*515*	529	554	552	**564**	549	549	538	530	549	545
West Virginia	599	615	612	599	608	622	597	595	602	*552*	601	596	589
Wisconsin	1,046	1,012	1,028	1,050	1,065	1,089	**1,116**	1,036	1,057	1,036	*975*	1,025	1,062

[1] The month of maximum employment for each state is indicated by boldface figures, and that of minimum employment by italic figures.

The largest number of wage earners employed during any month of 1909 was 173,943, in November, and the smallest number, 158,318, in January, the minimum number being equal to 91 per cent of the maximum. In 1904 the maximum number, 151,383, was shown for November, and the minimum number, 143,178, for July, the latter number being equal to 94.6 per cent of the former.

The months of maximum and minimum employment for 1909, and the number of wage earners reported for both months, are given for a larger number of states in Table 49.

Prevailing hours of labor.—In Table 11 the wage earners in the industry as a whole in 1909 have been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. In making this classification the average number of wage earners employed during the year in each establishment was classified as a total according to the hours prevailing in that establishment, even though a few employees worked a greater or smaller number of hours.

More than seven-tenths (71 per cent) of the wage earners employed in the industry as a whole in 1909 were in establishments where the prevailing hours were more than 54 but less than 60 per week. Most of the remaining wage earners (26.8 per cent of the total number) were in establishments where the prevailing hours were 60 per week.

In Massachusetts, Rhode Island, New Jersey, and New Hampshire nearly all the wage earners in 1909 were employed in establishments where the prevailing hours were between 54 and 60 per week. In Maine and Vermont, however, among the more important states, more than nine-tenths of the total number were in establishments where the prevailing hours were 60 per week; and in New York and Pennsylvania approximately 45 per cent of the wage earners worked 60 hours per week.

Table 11

AVERAGE NUMBER OF WAGE EARNERS IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS): 1909

STATE.	Total.	In establishments with prevailing hours— 48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.
United States	**168,722**	**423**	**1,092**	**1,102**	**119,728**	**45,300**	**1,075**	**2**
Connecticut	7,789	.....	.....	87	4,741	2,961	.....	.....
Georgia	660	.....	.....	.....	15	306	339	.....
Indiana	776	.....	.....	2	.....	774	.....	.....
Kentucky	818	.....	9	.....	.....	738	70	1
Maine	8,754	.....	.....	2	701	8,050	.....	1
Massachusetts	53,873	359	138	255	48,567	4,554	.....	.....
Michigan	554	.....	.....	25	51	478	.....	.....
New Hampshire	9,486	.....	.....	.....	8,889	597	.....	.....
New Jersey	12,652	.....	153	8	11,747	744	.....	.....
New York	9,460	30	649	.....	4,570	4,211	.....	.....
Ohio	2,566	2	6	.....	1,990	568	.....	.....
Pennsylvania	27,409	2	.....	77	14,819	12,511	.....	.....
Rhode Island	24,924	2	95	284	22,748	1,795	.....	.....
Tennessee	1,654	1	.....	.....	67	1,029	557	.....
Vermont	2,294	.....	39	.....	26	2,229	.....	.....
Virginia	542	.....	.....	.....	.....	542	.....	.....
West Virginia	599	.....	.....	4	1	594	.....	.....
Wisconsin	1,046	2	.....	3	376	665	.....	.....

CHARACTER OF OWNERSHIP.

Table 12 presents statistics with respect to the character of ownership of the establishments in the woolen industry in the United States.

Table 12 — THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).

CHARACTER OF OWNERSHIP.	Number of establishments.		Value of products.	
	1909	1904	1909	1904
Total	985	1,074	$435,978,558	$319,347,570
Individual	212	289	22,400,903	31,835,941
Firm	[1] 195	[2] 267	[1] 50,293,809	[2] 47,694,692
Corporation	578	518	363,283,846	239,816,937
Per cent of total	100.0	100.0	100.0	100.0
Individual	21.5	26.9	5.1	10.0
Firm	[1] 19.8	[2] 24.9	[1] 11.5	[2] 14.9
Corporation	58.7	48.2	83.3	75.1

[1] Includes one establishment under an unclassified form of ownership, to avoid the disclosure of individual operations.
[2] Includes two establishments under unclassified forms of ownership, to avoid the disclosure of individual operations.

In 1909, of the total number of mills reported for the industry, 58.7 per cent were under corporate ownership, as compared with 48.2 per cent in 1904. In 1909 the total value of products of these establishments represented 83.3 per cent of the total, and in 1904 75.1 per cent.

Table 13 gives statistics for establishments classified according to form of ownership for the 18 states employing an average of more than 500 wage earners in 1909.

In 1909, 8,746 wage earners, or 5.2 per cent of the total, were employed in establishments under individual ownership; 18,978, or 11.2 per cent, in those under firm ownership (including one under "other" ownership), and 140,998, or 83.6 per cent, in those owned by corporations.

In all the states establishments owned by corporations predominated, both in number of wage earners and in value of products; but as between those owned by individuals and those owned by firms there were some variations, the former outranking the latter in Connecticut and New Hampshire, while in Vermont there were no establishments under firm ownership.

Table 13 — THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS): 1909

STATE.	Number of establishments owned by—			Wage earners in establishments owned by—			Value of products of establishments owned by—			Value added by manufacture in establishments owned by—		
	Individuals.	Firms.	Corporations.	Individuals.	Firms.	Corporations.	Individuals.	Firms.	Corporations.	Individuals.	Firms.	Corporations.
United States	212	195	578	8,746	18,978	140,998	$22,400,903	$50,293,809	$363,283,846	$7,204,230	$17,168,229	$128,728,060
Connecticut	9	7	40	665	395	6,729	1,484,710	972,985	16,905,533	520,444	448,798	5,555,844
Georgia	2	1	4	*16*	(X)	644	*16,957*	(X)	853,563	*8,185*	(X)	419,603
Indiana	.....	5	6	.....	49	727	.....	103,523	1,466,442	.....	29,937	484,345
Kentucky	4	2	8	*8*	(X)	810	*9,845*	(X)	1,268,072	*3,222*	(X)	416,447
Maine	10	5	50	108	251	8,395	173,102	448,497	17,868,521	73,280	195,934	6,859,309
Massachusetts	26	27	130	2,262	4,810	46,801	5,822,008	11,885,145	124,259,729	2,001,336	4,658,985	47,330,230
Michigan	4	5	6	12	250	292	24,839	767,005	770,520	10,669	360,381	337,475
New Hampshire	8	6	25	470	381	8,635	919,166	786,874	15,024,612	304,469	340,152	4,990,961
New Jersey	6	7	20	50	2,184	10,418	144,354	6,220,059	27,574,224	43,636	1,615,370	11,246,752
New York	14	17	33	96	1,433	7,931	200,029	3,773,116	19,766,276	104,695	1,504,913	7,385,785
Ohio	2	7	11	(X)	*176*	2,390	(X)	*494,641*	7,195,508	(X)	*218,705*	2,855,415
Pennsylvania	59	73	85	4,340	7,942	15,127	12,195,424	22,867,665	42,383,907	3,576,306	7,006,445	12,230,160
Rhode Island	10	6	72	456	573	23,895	806,531	1,009,431	72,784,278	345,100	387,133	22,842,631
Tennessee	9	4	8	16	79	1,559	27,134	82,746	1,692,431	10,028	46,626	618,924
Vermont	4	.....	13	148	.....	2,146	253,503	.....	4,243,400	91,021	.....	1,526,881
Virginia	4	6	6	24	172	346	29,434	263,462	706,545	12,046	97,659	322,643
West Virginia	2	3	8	(X)	*18*	581	(X)	*33,297*	1,190,950	(X)	*18,924*	410,764
Wisconsin	13	3	17	22	76	948	82,985	134,917	2,011,806	25,146	71,672	757,033

NOTE.—In some states, in order to avoid disclosing individual operations, the figures for one group have been consolidated with those for establishments under some other form of ownership. In such case an (X) is placed in the column from which the figures have been omitted and the figures for the group with which they have been combined are printed in italics. The figures for establishments under firm ownership include those for one establishment under an unclassified form of ownership.

SIZE OF ESTABLISHMENT.

Classification by value of products.—Table 14 presents statistics for 1909 and 1904 for establishments in the woolen industry grouped according to the value of their products.

In 1909, 8.7 per cent of the establishments manufactured products valued at $1,000,000 or over, as against 5.9 per cent in 1904. While such establishments represented but a small proportion of the total number at both censuses, they reported 57 per cent of the total value of products in 1909 and 42.6 per cent in 1904. Included in this group in 1909 were nine woolen and worsted mills with products valued at $5,000,000 or over, the aggregate value of their products exceeding $90,000,000. Establishments with products valued at $100,000 but less than $1,000,000, which constituted the most important group as measured by value of products in 1904, had dropped to second place in 1909.

The average value of products per establishment increased from $297,344 in 1904 to $442,618 in 1909, the average value added by manufacture, as computed from the figures in Table 2, from $106,829 to $155,432, and the average number of wage earners employed from 137 to 171.

The average number of wage earners per establishment in the woolen goods branch of the industry in 1909 was 89; in the worsted goods branch, 343; in the felt goods establishments, 82; and in the wool hat factories, 64.

Table 14

VALUE OF PRODUCTS PER ESTABLISHMENT.	THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).			
	Number of establishments.		Value of products.	
	1909	1904	1909	1904
Total	985	1,074	$435,978,558	$319,347,570
Less than $5,000	111	127	221,621	309,667
$5,000 and less than $20,000	75	[1] 95	838,181	[1] 984,002
$20,000 and less than $100,000	203	[2] 245	11,083,690	[2] 13,519,645
$100,000 and less than $1,000,000	510	544	175,491,081	168,540,375
$1,000,000 and over	86	63	248,343,985	135,993,881
Per cent of total	100.0	100.0	100.0	100.0
Less than $5,000	11.3	11.8	0.1	0.1
$5,000 and less than $20,000	7.6	18.8	0.2	10.3
$20,000 and less than $100,000	20.6	[2] 22.8	2.5	[2] 4.2
$100,000 and less than $1,000,000	51.8	50.7	40.3	52.8
$1,000,000 and over	8.7	5.9	57.0	42.6

[1] Includes one establishment with products valued at less than $5,000.
[2] Includes one establishment with products valued at less than $5,000 and three establishments with products valued at $5,000 but less than $20,000.

Table 15 gives for 1909, 1904, and 1899 the average value of products per establishment for the woolen industry as a whole and for each of the four branches.

Table 15

BRANCH OF THE INDUSTRY.	AVERAGE VALUE OF PRODUCTS PER ESTABLISHMENT.		
	1909	1904	1899
The industry as a whole	$442,618	$297,344	$194,222
Woolen goods	182,485	179,541	114,425
Worsted goods	904,891	733,385	646,851
Felt goods	275,042	229,451	179,491
Wool hats	141,368	144,545	149,664

Classification by number of wage earners.—Table 16 classifies the establishments in 18 of the leading states according to the number of wage earners employed.

Of the 985 establishments reported in 1909, 3 per cent employed no wage earners, 22.2 per cent employed from 1 to 20 wage earners each, 15.6 per cent from 21 to 50, 45.1 per cent from 51 to 250, 11.6 per cent from 251 to 1,000, and only 2.4 per cent over 1,000. Of the total number of wage earners, however, only 4.1 per cent were reported by establishments employing from 1 to 50, 32.1 per cent by establishments employing from 51 to 250, 30.6 per cent by establishments employing from 251 to 1,000, and 33.1 per cent by establishments employing 1,000 or more. In Massachusetts, New Hampshire, New Jersey, Ohio, and Vermont, approximately one-half the wage earners were in establishments employing over 1,000.

Table 16

STATE.	THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).																			
	Total.		Establishments employing in 1909—																	
			No wage earners.	1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
	Establishments.	Wage earners (average number).	Establishments.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.
United States	985	168,722	20	118	264	101	1,314	154	5,358	102	14,566	252	39,607	82	27,853	32	23,848	24	55,912
Connecticut	56	7,789	1	.....	.....	2	14	11	404	10	864	25	3,560	6	1,655	.....	.....	1	1,292
Georgia	7	660	.....	2	2	1	14	.....	.....	1	87	2	305	1	252	.....	.....	.....	.....
Indiana	11	776	.....	2	2	3	47	1	44	1	99	4	584	.....	.....	.....	.....	.....	.....
Kentucky	14	818	.....	7	13	1	9	.....	.....	3	206	3	590	.....	.....	.....	.....	.....	.....
Maine	65	8,754	1	12	25	2	34	2	60	21	1,747	22	3,422	3	967	.....	.....	2	2,493
Massachusetts	183	53,873	1	5	17	8	121	31	1,117	37	2,687	60	9,698	26	9,033	7	5,420	8	25,780
Michigan	15	554	1	5	9	2	26	2	59	4	317	1	143	.....	.....	.....	.....	.....	.....
New Hampshire	39	9,486	2	.....	.....	2	22	5	207	10	720	14	1,927	5	1,610	.....	.....	1	5,000
New Jersey	33	12,652	.....	3	7	4	44	7	274	.....	.....	7	1,049	6	2,365	4	3,074	2	5,899
New York	64	9,460	5	7	21	9	116	11	344	9	711	12	2,067	7	2,280	3	2,260	1	1,651
Ohio	20	2,566	.....	4	8	5	54	3	76	2	168	5	951	.....	.....	.....	.....	1	1,300
Pennsylvania	217	27,409	3	16	35	31	408	48	1,659	49	3,595	47	7,481	10	3,575	10	7,299	3	3,357
Rhode Island	88	24,924	.....	4	8	5	75	8	293	16	1,172	28	4,764	16	5,467	7	5,288	4	7,857
Tennessee	21	1,654	6	4	4	2	24	1	36	3	245	3	409	1	429	1	507	.....	.....
Vermont	17	2,294	1	.....	.....	.....	.....	6	103	7	481	2	344	.....	.....	.....	.....	1	1,274
Virginia	16	542	.....	7	25	4	69	1	23	1	54	3	371	.....	.....	.....	.....	.....	.....
West Virginia	13	599	.....	4	6	5	81	1	41	1	100	1	101	1	270	.....	.....	.....	.....
Wisconsin	33	1,046	2	13	24	4	42	3	110	10	720	1	150	.....	.....	.....	.....	.....	.....

EXPENSES.

As stated in the Introduction, the census figures representing expenses do not purport to show the total cost of manufacture, since they take no account of interest or depreciation; hence they can not properly be used for determining profits. Facts of interest can be brought out, however, concerning the relative importance of the different classes of expenses which were reported.

Table 17 shows, for the woolen industry as a whole and for each of its four branches, the percentage of the total reported expenses which was represented, respectively, by cost of materials, salaries, wages, and miscellaneous expenses.

Table 17	PER CENT OF TOTAL REPORTED EXPENSES: 1909				
CLASS.	The woolen industry.	Woolen goods.	Worsted goods.	Felt goods.	Wool hats.
Total	100.0	100.0	100.0	100.0	100.0
Cost of materials	72.9	66.9	75.3	68.5	63.0
Salaries	2.6	3.4	2.2	6.0	3.2
Wages	18.7	23.0	17.1	16.8	25.2
Miscellaneous	5.8	6.7	5.4	8.6	8.6

There is considerable variation in the percentages for the several branches of the industry, due partly to the fact that there is relatively more duplication in cost of materials in some branches than in others. These variations among the branches explain in part the variations among the states with respect to the distribution of expenses for the industry as a whole, as shown in Table 18.

Table 18	PER CENT OF TOTAL EXPENSES REPORTED FOR THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS): 1909			
STATE.	Cost of materials.	Salaries.	Wages.	Miscellaneous expenses.
United States	72.9	2.6	18.7	5.8
California	54.1	11.2	22.0	12.7
Connecticut	73.3	3.2	19.9	3.6
Georgia	62.4	5.0	24.7	7.8
Illinois	65.0	6.3	19.9	8.8
Indiana	68.5	4.6	19.0	7.9
Iowa	73.9	3.6	17.5	5.1
Kentucky	69.2	4.5	19.5	6.9
Maine	68.2	2.5	23.2	6.0
Massachusetts	71.2	2.4	19.9	6.5
Michigan	69.1	4.3	18.8	7.8
Minnesota	69.0	4.1	19.8	7.1
New Hampshire	69.6	1.8	22.9	5.8
New Jersey	74.9	3.1	17.7	4.3
New York	69.0	3.8	19.4	7.8
North Carolina	66.0	6.2	19.6	8.1
Ohio	68.2	3.1	13.7	15.1
Oregon	64.1	5.1	24.6	6.2
Pennsylvania	76.8	2.5	15.4	5.4
Rhode Island	76.5	2.0	17.3	4.2
Tennessee	64.5	4.2	24.0	7.3
Vermont	66.5	2.0	24.1	7.3
Virginia	69.4	4.1	21.5	5.0
West Virginia	71.2	2.8	19.9	6.2
Wisconsin	68.8	6.3	19.0	5.8
All other states	69.6	4.1	19.9	6.5

Among the individual states, California shows the lowest proportion of the total reported expenses for cost of materials (54.1 per cent), and Pennsylvania the highest (76.8 per cent); for wages the percentages ranged from 13.7 in Ohio to 24.7 in Georgia; for salaries, from 1.8 in New Hampshire to 11.2 in California; and for miscellaneous expenses, from 3.6 in Connecticut to 15.1 in Ohio.

ENGINES, POWER, AND FUEL.

Engines and power.—Table 2 shows that the total horsepower used in the woolen industry increased from 129,567 in 1879 to 362,209 in 1909. Table 19 shows statistics of power, as reported at the censuses of 1909, 1904, and 1899.

The total primary power used in the industry as a whole increased from 244,825 horsepower in 1899 to 362,209 horsepower in 1909, or 47.9 per cent. In 1909 the power generated by steam engines constituted 72.2 per cent of the total primary power, as compared with 69.1 per cent in 1904 and 66.6 per cent in 1899. The absolute increase in steam power from 1899 to 1909 was 98,203 horsepower, or 60.2 per cent. Water power, which shows but a slight increase for the decade, formed 21.9 per cent of the total in 1909, as compared with 31 per cent in 1899. There was an increase in the relative importance of the power generated by gas engines and by electric motors operated by purchased current (rented electric power). The latter represented 3.8 per cent of the primary power in 1909.

The number and horsepower of electric motors used for distributing power by means of current generated in the same establishment show a large increase.

Table 19	THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).								
POWER.	Number of engines or motors.			Horsepower.			Per cent distribution of horsepower.		
	1909	1904	1899	1909	1904	1899	1909	1904	1899
Primary power, total	2,666	2,518	2,525	362,209	288,969	244,825	100.0	100.0	100.0
Owned	2,237	2,376	2,525	342,691	278,106	239,492	94.6	96.2	97.8
Steam	1,364	1,394	1,370	261,364	199,615	163,161	72.2	69.1	66.6
Gas	53	41	16	2,077	1,705	411	0.6	0.6	0.2
Water wheels	816	940	1,139	78,909	76,356	75,911	21.8	26.4	31.0
Water motors	4	1	(1)	341	10	(1)	0.1	(2)	.....
Other	.....	.....	.....	.....	420	9	.....	0.1	(2)
Rented	429	142	(1)	19,518	10,863	5,333	5.4	3.8	2.2
Electric	429	142	(1)	13,783	3,930	2,534	3.8	1.4	1.0
Other	.....	.....	.....	5,735	6,933	2,799	1.6	2.4	1.1
Electric motors	3,385	556	84	79,223	22,222	5,039	100.0	100.0	100.0
Run by current generated by establishment	2,956	414	84	65,440	18,292	2,505	82.6	82.3	49.7
Run by rented power	429	142	(1)	13,783	3,930	2,534	17.4	17.7	50.3

[1] Not reported. [2] Less than one-tenth of 1 per cent.

Table 20 shows, for 1909, the amount of the several kinds of power and of the different kinds of fuel used in 18 of the leading states.

Massachusetts, Pennsylvania, Rhode Island, and New Hampshire together reported 241,724 horsepower, or 66.7 per cent of the aggregate for the industry. Steam power was the most important form of power in all of the states shown separately, with the exception of Maine and Virginia, where water power ranked first. Massachusetts reported the largest amount both of steam power (89,876 horsepower) and of water power (23,384 horsepower). Pennsylvania reported the largest amount of rented electric power, as well as of the power developed by gas engines.

Table 20 THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS): 1909

STATE.	Number of establishments reporting.	Total horsepower.	Primary horsepower. Owned by establishments reporting. Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Rented. Electric.	Other.	Electric horsepower. Total, rented and generated by establishment.	Generated in the establishment reporting.	Fuel used. Coal. Anthracite (long tons).	Bituminous (short tons).	Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
United States	**971**	**362,209**	**342,691**	**261,364**	**2,077**	**79,250**	.....	**13,783**	**5,735**	**79,223**	**65,440**	**277,755**	**1,525,988**	**6,985**	**34,843**	**26,611**	**104,746**
Connecticut	56	17,518	17,310	10,431	50	6,829	.....	158	50	2,157	2,042	1,993	76,533	.....	14,684	131	229
Georgia	7	1,437	1,437	1,225	.....	212	.....	.....	.....	426	426	.....	8,536	.....	.....	.....	.....
Indiana	11	1,678	1,677	1,507	.....	170	.....	1	.....	61	60	.....	14,427	.....	.....	.....	.....
Kentucky	14	2,506	2,481	2,417	.....	64	.....	25	.....	137	112	.....	11,671	.....	200	.....	.....
Maine	65	22,299	19,715	7,905	87	11,723	.....	2,578	6	3,799	1,221	3,170	82,605	.....	2,779	825	.....
Massachusetts	182	117,119	114,005	89,876	745	23,384	.....	2,497	617	39,945	37,448	43,709	550,938	253	1,260	1,636	3,535
Michigan	15	1,900	1,815	1,657	50	108	.....	85	.....	272	187	.....	13,127	.....	.....	44	.....
New Hampshire	39	30,485	29,023	16,395	5	12,623	.....	1,457	5	4,880	3,423	805	91,829	208	1,886	500	6,366
New Jersey	33	20,254	19,883	19,435	10	438	.....	8	363	4,709	4,701	126,841	26,436	.....	.....	1,358	.....
New York	60	22,374	20,607	13,306	8	7,293	.....	1,575	192	5,665	4,090	30,972	99,821	.....	153	18	889
Ohio	18	6,504	5,686	5,397	150	139	.....	818	.....	2,349	1,531	.....	25,634	6,044	.....	.....	9,212
Pennsylvania	215	50,405	43,636	41,320	769	1,547	.....	2,917	3,852	5,711	2,794	53,238	210,160	.....	25	1,448	63,302
Rhode Island	88	43,715	42,631	37,321	90	5,220	.....	571	513	7,295	6,724	16,867	198,684	.....	1,108	127	.....
Tennessee	21	2,371	2,371	2,282	17	72	.....	.....	.....	412	412	.....	26,591	.....	2,873	10	.....
Vermont	17	7,213	7,213	3,885	3	3,325	.....	.....	.....	55	55	.....	35,788	480	2,175	.....	.....
Virginia	16	1,352	1,092	388	20	684	.....	260	.....	260	.....	62	3,471	.....	278	.....	.....
West Virginia	13	1,327	980	902	20	58	.....	347	.....	387	40	.....	7,126	.....	.....	.....	9,028
Wisconsin	33	3,059	3,045	1,647	13	1,385	.....	14	.....	19	5	16	13,838	.....	452	56	.....
All other states	68	8,693	8,084	4,068	40	3,976	.....	472	137	684	109	82	28,773	.....	6,970	20,458	12,185

Fuel consumed.—Owing to the extensive use of water power in the woolen industry, less fuel is consumed in generating power than would otherwise be required. In 1909 bituminous coal was by far the principal class of fuel used, 1,525,988 short tons being reported, of which 550,938, or 36.1 per cent, were consumed in Massachusetts. The largest quantity of anthracite coal, 126,841 long tons, or nearly one-half of the total reported for the industry, is shown for New Jersey. Gas, oil, and wood were used to some extent, the largest quantity of gas being reported for Pennsylvania, and of wood for Connecticut.

SPECIAL STATISTICS RELATING TO MATERIALS, PRODUCTS, AND EQUIPMENT.

MATERIALS.

Summary for the industry as a whole.—Table 21 shows the quantity and cost of the principal materials used in the woolen industry as a whole for 1909, and the quantity for 1904 and 1899.

The increase during the decade 1899–1909 in the consumption of wool, in condition purchased, amounted to 145,870,501 pounds, or 42.6 per cent, and in the consumption on the scoured equivalent basis to 99,932,031 pounds, or 49.7 per cent. The greater part of the increase was in foreign wool, which formed 24.7 per cent of all wool in condition purchased in 1899 and a slightly smaller proportion in 1904, but had increased to 34.4 per cent of the total in 1909. The percentage for domestic wool, on the other hand, decreased from 75.3 per cent in 1899 to 65.6 per cent in 1909, while the consumption decreased 3 per cent between 1904 and 1909, although showing an increase of 28 per cent between 1899 and 1904. The quantity of mohair and camel, alpaca, and vicuna hair used increased 53.8 per cent during the decade, while that of "other" animal hair increased but 9.5 per cent, although the quantities of mohair and "other" animal hair used in 1904 were materially greater than in either 1909 or 1899. The quantity of cotton and shoddy used materially decreased, the former 48.4 per cent and the latter 28.7 per cent. The quantity of purchased waste and noils of wool, mohair, camel hair, etc., used increased 69.7 per cent, and that of purchased tops increased 257.9 per cent.

Of the several classes of purchased yarns listed in the table, worsted yarns show the greatest rate of increase in consumption for the decade, the quantity used in 1909 being 135.1 per cent greater than that used in 1899. Silk and spun silk yarns show an increase of 114.2 per cent, and cotton yarns an increase of 11.4 per cent. On the other hand, woolen yarns and merino yarns show a decrease of 84.2 per cent and 43.1 per cent, respectively, for the decade.

Table 21

MATERIAL.	MATERIALS USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS). Cost: 1909	Quantity. 1909	1904	1899
		Pounds.	*Pounds.*	*Pounds.*
Wool:				
In condition purchased	$140,998,437	488,368,690	432,205,574	342,498,189
Domestic	88,187,504	320,298,916	330,106,695	257,824,751
Foreign	52,810,933	168,060,774	102,098,879	84,673,438
Equivalent in scoured condition	.....	301,004,252	250,642,723	201,072,221
Hair	3,851,412	33,447,534	36,679,624	28,480,048
Camel, alpaca, and vicuna	1,421,778	4,659,409	1,578,800	2,078,820
Mohair	989,650	3,187,950	5,620,196	3,023,146
Domestic	622,748	2,444,561	2,684,573	(1)
Foreign (Turkish, etc.)	366,902	743,389	2,935,623	(1)
Other animal hair	1,430,984	25,600,175	29,480,628	23,378,082
Cotton	2,671,224	21,399,731	34,596,032	41,470,560
Domestic	2,195,024	18,412,493	30,853,432	(1)
Foreign (Egyptian, etc.)	475,300	2,987,238	3,742,600	(1)
Tailors' clippings, rags, etc.	2,914,324	41,517,552	80,687,714	(1)
Shoddy, mungo, and wool extract, purchased	3,330,810	24,052,730	33,484,250	33,752,275
Waste and noils of wool, mohair, camel hair, etc., purchased	9,404,571	32,629,812	28,269,460	19,230,743
Wool waste and noils	9,281,604	31,957,327	27,189,632	18,875,593
Mohair noils	110,309	604,985	398,627	113,562
Camel, alpaca, and vicuna noils	12,658	67,500	681,201	241,588

MATERIAL.	MATERIALS USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS). Cost: 1909	Quantity. 1909	1904	1899
		Pounds.	*Pounds.*	*Pounds.*
Tops, purchased	14,716,142	20,991,962	9,236,266	5,865,566
Yarns, purchased	68,679,447	103,045,808	73,410,671	71,405,069
Woolen	558,270	931,222	5,750,088	5,906,862
Worsted	56,033,701	59,148,771	31,047,712	25,159,469
Merino	341,579	2,087,824	2,582,269	3,666,545
Cotton	10,557,098	39,432,613	33,007,525	35,394,433
Silk and spun silk	1,142,663	282,536	412,326	131,929
Silk	675,124	128,122	202,578	60,439
Spun silk	467,539	154,414	209,748	71,490
Linen	14,742	14,453	24,329	27,064
Jute, ramie, and other vegetable fiber yarns	31,394	1,148,389	586,422	1,118,767
Hat bodies and hats in the rough:		*Dozens.*	*Dozens.*	*Dozens.*
Wool	83,020	21,864	12,089	4,939
Fur felt	8,882	1,108	(1)	(1)
Chemicals and dyestuffs	$9,145,322	.....	.....	.....
All other materials (exclusive of fuel and rent of power)	84,14,670	.....	.....	.....

[1] Figures not available.

Summary for the woolen goods and worsted goods branches.—By reason of the close relation between the woolen goods and worsted goods branches of the industry, the similarity in machinery, materials, and products, and the overlapping of products, with occasional changes by individual mills from woolen to worsted fabrics, or vice versa, the statistics of materials and products for these two branches of the industry are best presented in combination. Table 22 gives the quantity and cost of the principal materials used in these two branches of the woolen industry for 1909, 1904, and 1899.

Table 22

MATERIAL.	MATERIALS USED IN THE WOOLEN GOODS AND WORSTED GOODS BRANCHES OF THE WOOLEN INDUSTRY. 1909	1904	1899	Percent of increase:[1] 1899–1909
Total cost	**$273,438,570**	**$197,489,306**	**$148,087,178**	**84.6**
Wool:				
In condition purchased—				
Pounds	474,755,366	418,703,811	330,178,552	43.8
Cost	$136,696,917	$105,433,451	$78,803,830	73.4
Domestic—				
Pounds	310,602,279	319,800,490	250,393,205	24.0
Cost	$85,018,238	$78,673,136	$59,046,158	44.0
Foreign—				
Pounds	164,153,087	98,903,321	79,785,347	105.7
Cost	$51,648,679	$26,760,315	$19,757,672	161.4
Equivalent in scoured condition, pounds	290,706,970	241,280,065	192,705,519	50.9
Mohair and camel, alpaca, and vicuna hair:				
Pounds	7,805,422	6,507,631	5,003,966	56.0
Cost	$2,399,123	$1,957,581	$1,857,707	29.1
Other animal hair:				
Pounds	17,356,100	22,987,332	20,535,079	−15.5
Cost	$932,911	$1,360,776	$1,170,756	−20.3
Cotton:				
Pounds	20,024,061	32,613,408	40,244,710	−50.2
Cost	$2,515,409	$4,072,907	$3,280,000	−23.3
Tailors' clippings, rags, etc.:				
Pounds	40,402,460	79,367,290	(2)	.....
Cost	$2,856,966	$5,668,634	(2)	.....
Shoddy, mungo, and wool extract, purchased:				
Pounds	21,454,187	31,919,456	33,036,767	−35.1
Cost	$3,058,214	$4,472,666	$4,070,836	−24.9

MATERIAL.	MATERIALS USED IN THE WOOLEN GOODS AND WORSTED GOODS BRANCHES OF THE WOOLEN INDUSTRY. 1909	1904	1899	Percent of increase.[1] 1899–1909
Waste and noils of wool, mohair, camel hair, etc., purchased:				
Pounds	26,473,311	26,032,838	15,714,171	68.5
Cost	$7,523,283	$6,056,227	$3,891,369	95.3
Tops, purchased:				
Pounds	20,828,245	9,160,929	5,566,108	274.2
Cost	$14,614,527	$5,073,078	$2,865,546	410.0
Yarns, purchased:				
Woolen—				
Pounds	931,222	5,750,088	5,906,862	−84.2
Cost	$558,270	$2,622,882	$2,675,143	108.7
Worsted—				
Pounds	59,148,771	31,047,516	25,110,939	135.5
Cost	$56,033,701	$24,904,511	$19,495,251	187.4
Merino—				
Pounds	1,971,709	2,458,085	3,634,679	−45.8
Cost	$318,456	$581,107	$664,527	−52.1
Cotton—				
Pounds	39,169,388	32,598,072	35,342,726	10.8
Cost	$10,492,185	$8,032,773	$6,814,279	54.0
Silk and spun silk—				
Pounds	282,536	412,307	131,915	114.2
Cost	$1,142,663	$1,679,883	$529,789	115.7
All other—				
Pounds	1,046,735	411,779	1,127,926	−7.2
Cost	$40,739	$21,118	$65,434	−37.7
Chemicals and dyestuffs	$8,820,928	$7,456,550	$6,595,160	33.7
All other materials	$25,464,278	$18,086,162	$15,307,551	66.4

[1] A minus sign (−) denotes decrease.

[2] Not reported separately.

In the woolen and worsted goods branches of the industry there was an increase of $125,351,397, or 88 per cent, in the cost of materials between 1899 and 1909. The increase in the consumption of foreign wool during the decade was 84,367,740 pounds, or 105.7 per cent, and in that of domestic wool, 60,209,074 pounds, or 24 per cent. From 1904 to 1909, however, there was a decrease of 2.9 per cent in the quantity of domestic wool used. The *increase in the total consumption* of wool from 1899 to 1909, based upon the

figures representing equivalent weight in scoured condition, was 98,001,451 pounds, or 50.9 per cent.

The table gives the percentages of increase or decrease in the quantity and value of the various materials for the decade 1899–1909. In general these percentages conform to those shown in Table 21 for the woolen industry as a whole.

Summary for the felt goods branch of the industry.—Table 23 gives the quantity and cost of the materials used in the manufacture of felt goods for 1909, 1904, and 1899.

Table 23 — MATERIALS USED IN THE FELT GOODS BRANCH OF THE WOOLEN INDUSTRY.

MATERIAL.	1909	1904	1899	Per cent of increase: 1899–1909
Total cost	$8,967,206	$5,754,026	$3,801,028	83.3
Wool:				
In condition purchased—				
Pounds	12,409,826	11,868,238	9,606,263	29.2
Cost	$3,927,393	$3,388,588	$2,196,440	78.8
Equivalent of above in scoured condition, pounds	9,308,172	8,131,082	6,468,097	43.9
Animal hair, etc.:				
Pounds	8,144,011	6,974,634	2,819,521	188.8
Cost	$239,244	$373,797	$125,803	90.2
Cotton:				
Pounds	1,375,070	1,982,624	1,225,850	12.2
Cost	$155,815	$217,200	$77,683	100.6
Shoddy, mungo, and wool extract, purchased.				
Pounds	2,536,243	1,532,127	712,373	256.0
Cost	$261,878	$157,031	$80,737	224.4
Waste and noils, purchased.				
Pounds	4,874,712	1,948,969	2,653,590	83.7
Cost	$1,220,110	$452,509	$552,992	120.6
Chemicals and dyestuffs	$219,891	$189,750	$128,296	71.4
All other materials	$942,875	$975,151	$639,077	47.5

The cost of wool in this branch of the industry represented 56.4 per cent of the total cost of materials in 1909, and 57.8 per cent in 1899. Of the increase of $3,166,178 in cost of materials between 1899 and 1909, $2,398,071, or 75.7 per cent, represented the increase in the cost of wool and of waste and noils, though the relative increase for most of the other materials was large.

Summary for the wool hat branch of the industry.—Table 24 gives the quantity and cost of the materials used in the manufacture of wool hats for 1909, 1904, and 1899.

The quantity of wool used in the manufacture of wool-felt hats in 1909 was less than half the quantity used in 1899, and while the quantity of waste and noils increased 48.5 per cent during the decade, this increase was not sufficient to offset the decrease in the consumption of wool. The cost of hat bodies and hats in the rough purchased as materials in 1909 was nearly six times as great as in 1899.

Table 24 — MATERIALS USED IN THE WOOL HAT BRANCH OF THE WOOLEN INDUSTRY.

MATERIAL.	1909	1904	1899	Per cent of increase:[1] 1899–1909
Total cost	$2,472,263	$1,369,810	$2,042,202	21.1
Wool:				
In condition purchased—				
Pounds	1,203,498	1,633,525	2,713,374	−55.6
Cost	$404,127	$495,594	$788,973	−48.8
Equivalent of above in scoured condition, pounds	989,110	1,231,576	1,898,605	−47.9
Wool waste and noils, purchased:				
Pounds	1,281,764	287,363	862,982	48.5
Cost	$661,172	$119,407	$370,792	78.3
Wool-felt hat bodies and hats in the rough:				
Dozens	21,864	12,089	4,939	342.7
Cost	$83,020	$25,997	$13,920	496.4
Chemicals and dyestuffs	$104,503	$63,905	$108,502	−3.7
All other materials	$1,219,441	$664,907	$760,015	60.4

[1] A minus sign (−) denotes decrease.

Materials used in the woolen industry, by states.—Table 25 gives the quantity and cost of the principal materials used in the woolen industry (all four branches combined) in 1909, and the quantity for 1904 and 1899.

In 1909 Massachusetts reported 32 per cent of the wool used in the industry, Pennsylvania 20.7 per cent, and Rhode Island 16.2 per cent, as compared with 30.6 per cent, 18 per cent, and 14.8 per cent, respectively, in 1899. All of the states listed in the table except Connecticut and Maine show an increase between 1899 and 1909 in the quantity of wool used, New Jersey showing the greatest relative increase (145.2 per cent).

The quantity of cotton used in the woolen industry in 1909 was only a little more than half the quantity used in 1899; and of the total for 1909, Massachusetts reported 32.1 per cent and Pennsylvania 23.4 per cent.

In the quantity of purchased worsted yarn used, every state listed in the table shows a large gain for the decade. Massachusetts reported 29.7 per cent of the total quantity used in 1909, Rhode Island 22.7 per cent, and Pennsylvania 21.5 per cent. On the other hand, each state for which the totals are given shows a large decrease during the decade in the quantity of woolen yarn used. Maine, Massachusetts, and Rhode Island were the only states showing an increased quantity of cotton yarns in 1909 as compared with 1899, the gain being most pronounced in Massachusetts.

Table 25

PRINCIPAL MATERIALS USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).

MATERIAL AND STATE.	Cost: 1909	Quantity. 1909	Quantity. 1904	Quantity. 1899
		Pounds.	*Pounds.*	*Pounds.*
Wool:				
In condition purchased	**$140,998,437**	**488,368,690**	**432,205,574**	**342,498,189**
Connecticut	3,767,739	10,172,622	12,765,250	11,203,573
Maine	5,074,148	13,782,594	15,114,848	19,294,305
Massachusetts	44,803,728	156,338,534	127,507,629	104,935,180
New Jersey	11,673,250	44,150,157	37,371,456	18,005,603
New York	8,462,790	26,651,580	26,056,151	20,942,082
Pennsylvania	27,262,676	101,256,902	90,180,229	61,594,080
Rhode Island	22,768,723	79,082,314	66,069,085	50,857,087
All other states	17,185,383	56,933,987	57,140,926	55,666,279
Domestic	**88,187,504**	**320,298,916**	**330,106,695**	**257,824,751**
Connecticut	3,474,052	9,084,587	11,831,199	9,709,648
Maine	3,781,852	10,193,888	12,390,314	16,172,948
Massachusetts	25,774,777	96,701,973	91,212,818	76,095,595
New Jersey	6,896,485	31,109,309	33,963,274	13,022,301
New York	6,754,854	22,362,412	22,456,770	18,692,443
Pennsylvania	15,634,908	56,681,645	52,543,138	32,599,985
Rhode Island	15,468,437	58,108,445	56,776,005	41,014,744
All other states	10,402,139	36,056,657	48,933,177	50,517,087
Foreign	**52,810,933**	**168,069,774**	**102,098,879**	**84,673,438**
Connecticut	293,687	1,088,035	934,051	1,493,925
Maine	1,292,296	3,588,706	2,724,534	3,121,357
Massachusetts	19,028,951	59,636,561	36,294,811	28,830,585
New Jersey	4,776,765	13,040,848	3,408,182	4,983,302
New York	1,707,936	4,289,168	3,599,381	2,249,639
Pennsylvania	11,627,768	44,575,257	37,637,091	28,994,095
Rhode Island	7,300,286	20,973,869	9,203,080	9,842,343
All other states	6,783,244	20,877,330	8,207,740	5,149,192
Equivalent in scoured condition	.....	**301,004,252**	**250,642,723**	**201,072,221**
Connecticut	.....	7,045,156	8,205,794	7,271,894
Maine	.....	10,763,585	11,016,422	10,567,069
Massachusetts	.....	99,133,605	74,265,049	57,347,362
New Jersey	.....	22,346,674	14,859,789	9,728,167
New York	.....	15,858,034	15,610,370	11,830,350
Pennsylvania	.....	65,555,136	55,790,525	48,302,782
Rhode Island	.....	43,153,225	36,551,598	23,884,049
All other states	.....	37,148,837	34,343,176	32,140,548
Hair	**3,851,412**	**33,447,534**	**36,679,624**	**28,480,045**
Camel, alpaca, and vicuna	1,421,778	4,659,409	1,578,800	2,078,820
Massachusetts	572,466	1,587,596	(2)	1,591,990
All other states	849,312	3,071,813	1,578,800	486,830
Mohair	989,650	3,187,950	5,620,196	3,023,146
Domestic	622,748	2,444,561	2,684,573	(1)
Foreign (Turkish, etc.)	366,902	743,389	2,935,623	(1)
Maine	343,843	1,263,672	(2)	1,286,845
Massachusetts	448,060	1,203,263	(2)	913,101
Pennsylvania	82,602	251,178	915,845	14,233
All other states	115,145	470,437	4,704,351	808,967
Other animal hair	1,439,984	25,600,175	29,480,628	23,378,082
Connecticut	61,821	1,068,682	(2)	164,331
Massachusetts	116,130	884,969	(2)	1,126,520
New Jersey	78,647	2,694,355	(2)	.....
New York	269,744	1,280,094	1,291,461	814,920
Pennsylvania	817,786	18,525,185	25,364,033	19,513,071
All other states	95,856	1,146,890	2,825,134	1,759,240
Cotton	**2,671,224**	**21,399,731**	**34,596,032**	**41,470,560**
Domestic	2,195,924	18,412,493	30,853,432	(1)
Foreign (Egyptian, etc.)	475,300	2,987,238	3,742,600	(1)
Connecticut	82,852	558,585	1,504,567	1,697,350
Maine	253,408	1,986,953	3,132,243	2,298,770
Massachusetts	886,281	6,869,651	9,257,173	8,123,319
New Jersey	26,541	228,378	625,301	1,519,668
New York	83,276	599,698	1,326,455	1,009,756
Pennsylvania	536,262	5,017,601	5,659,285	12,322,020
Rhode Island	96,882	579,139	1,847,509	3,535,334
All other states	705,722	5,559,726	11,243,499	10,964,333
Tailors' clippings, rags, etc.	**2,914,324**	**41,517,552**	**80,687,714**	(1)
Connecticut	138,259	1,646,055	5,473,695	(1)
Maine	73,465	1,019,778	1,496,440	(1)
Massachusetts	1,500,644	18,585,046	34,370,271	(1)
New Hampshire	403,774	4,037,235	9,930,014	(1)
Ohio	109,706	1,214,924	(2)	(1)
Pennsylvania	239,012	7,794,521	14,781,589	(1)
Vermont	140,386	1,823,286	2,120,824	(1)
All other states	309,078	5,396,707	12,514,881	(1)
Shoddy, mungo, and wool extract, purchased	**3,330,810**	**24,052,730**	**33,484,250**	**33,752,275**
Connecticut	295,442	1,593,181	2,457,223	4,461,072
Maine	487,099	4,110,846	4,114,911	3,094,185
Massachusetts	547,990	3,687,530	8,398,940	9,808,403
New Jersey	37,974	272,038	264,764	195,983

PRINCIPAL MATERIALS USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS.)

MATERIAL AND STATE.	Cost: 1909	Quantity. 1909	Quantity. 1904	Quantity. 1899
		Pounds.	*Pounds.*	*Pounds.*
Shoddy, mungo, and wool extract, purchased—Con.				
New York	$135,921	939,539	2,209,909	641,709
Pennsylvania	499,133	4,645,405	5,070,444	6,136,770
Rhode Island	259,829	1,546,464	4,273,269	2,101,252
All other states	1,067,422	7,257,727	6,694,790	7,312,901
Waste and noils of wool, mohair, camel hair, etc., purchased	**9,404,571**	**32,629,812**	**28,269,460**	**19,230,743**
Wool waste and noils	9,281,604	31,957,327	27,189,632	18,875,593
Mohair noils	110,309	604,985	398,627	113,562
Camel, alpaca, and vicuna noils	12,658	67,500	681,201	241,588
Connecticut	466,078	1,871,548	2,263,438	1,186,679
Maine	721,825	2,399,147	1,850,639	1,048,310
Massachusetts	2,671,684	9,501,027	8,518,733	4,181,175
New Jersey	557,593	1,586,752	973,898	1,209,093
New York	960,628	2,908,692	1,716,008	1,923,179
Pennsylvania	1,448,961	5,716,904	4,360,585	5,721,017
Rhode Island	839,389	2,578,085	3,160,612	2,005,717
All other states	1,738,413	6,067,657	5,425,547	1,955,573
Tops, purchased	**14,716,142**	**20,991,962**	**9,236,266**	**5,665,566**
Massachusetts	3,466,257	5,045,561	2,999,927	1,576,891
Pennsylvania	1,530,899	2,445,813	1,163,036	547,353
Rhode Island	7,887,543	10,406,834	4,150,072	2,874,537
All other states	1,831,443	3,093,754	923,231	666,785
Yarns, purchased	**68,679,447**	**103,045,808**	**73,410,671**	**71,405,069**
Connecticut	6,056,001	6,372,748	4,593,783	3,883,434
Maine	1,612,220	3,430,561	3,676,924	1,700,484
Massachusetts	20,937,624	29,947,889	18,806,047	15,015,933
New Jersey	6,117,547	6,799,219	2,780,554	1,627,113
New York	1,718,630	2,829,606	1,594,097	3,465,476
Pennsylvania	15,299,783	27,549,062	17,265,339	24,306,461
Rhode Island	13,915,166	19,267,818	17,756,202	13,312,189
All other states	3,022,476	6,848,905	6,937,725	8,093,979
Woolen	558,270	931,222	5,750,088	5,906,862
Massachusetts	30,522	53,324	1,120,010	1,427,101
Pennsylvania	106,540	143,884	1,303,215	2,289,016
Rhode Island	143,015	273,926	1,233,801	1,174,278
All other states	278,193	460,088	2,093,062	1,016,467
Worsted	56,033,701	59,148,771	31,047,712	25,159,469
Connecticut	5,629,603	5,113,219	2,558,669	2,352,565
Massachusetts	16,905,864	17,569,506	7,988,800	6,849,748
New Jersey	5,823,416	5,869,786	1,307,443	375,520
New York	1,227,155	1,412,237	318,244	626,031
Pennsylvania	11,868,802	12,728,111	6,605,049	5,536,704
Rhode Island	11,987,111	13,403,194	10,382,578	7,794,620
All other states	2,591,750	3,052,718	1,886,929	1,624,281
Merino	341,579	2,087,824	2,582,269	3,666,545
Pennsylvania	223,853	1,658,124	1,779,805	3,272,029
All other states	117,726	429,700	802,464	394,516
Cotton	10,557,098	39,432,613	33,007,525	35,394,433
Connecticut	291,770	1,193,956	1,689,875	1,475,188
Maine	813,996	2,453,388	2,005,774	971,083
Massachusetts	3,624,646	12,116,277	9,375,588	6,453,607
New Jersey	189,702	833,227	1,319,443	966,787
New York	300,706	990,264	937,927	2,427,270
Pennsylvania	2,801,570	11,969,645	7,191,952	12,102,914
Rhode Island	1,530,130	5,470,701	5,596,723	4,174,190
All other states	1,004,578	4,396,155	4,890,243	6,823,394
Silk and spun silk	1,142,663	282,536	412,326	131,929
Silk	675,124	128,122	202,578	60,439
Spun silk	467,539	154,414	209,748	71,490
Massachusetts	366,504	104,861	146,673	20,775
New Jersey	31,284	6,122	5,855	1,806
New York	49,493	13,913	21,018	13,173
Pennsylvania	278,289	50,698	50,132	49,974
Rhode Island	222,473	45,567	137,458	43,917
All other states	194,620	61,375	51,190	2,284
Linen	14,742	14,453	24,329	27,064
Jute, ramie, and other vegetable fiber	31,394	1,148,389	586,422	1,118,767
Hat bodies and hats in the rough:		*Dozens.*	*Dozens.*	*Dozens.*
Wool	83,020	21,864	12,089	4,939
New York	47,616	16,057	(2)	2,676
All other states	35,404	5,807	12,089	2,263
Fur felt	8,882	1,108	(1)	(1)

[1] Figures not available.

[2] Figures can not be shown without disclosing individual operations.

Table 26 gives, by states, the total quantity of yarns and of shoddy, mungo, and wool extract used in the woolen industry in 1909, including stock made by mills for their own consumption and stock purchased.

Table 26 — MATERIAL AND STATE.	YARNS, SHODDY, MUNGO, AND WOOL EXTRACT USED IN THE WOOLEN INDUSTRY, EXCLUSIVE OF CARPETS AND RUGS (POUNDS): 1909		
	Total.	Purchased.	Made in establishments using.
Yarns	313,540,058	101,600,430	211,939,628
All wool	235,683,072	60,079,993	175,603,079
Woolen	96,979,261	931,222	96,048,039
Connecticut	8,141,019	17,605	8,123,414
Maine	11,150,892	106,373	11,044,519
Massachusetts	31,855,997	53,324	31,802,673
New Hampshire	8,874,453	118,938	8,755,515
New Jersey	3,506,872	90,084	3,416,788
New York	7,025,032	126,489	6,898,543
Pennsylvania	7,319,127	143,884	7,175,243
Rhode Island	2,829,787	273,926	2,555,861
All other states	16,276,082	599	16,275,483
Worsted	138,703,811	59,148,771	79,555,040
Connecticut	5,133,219	5,113,219	20,000
Maine	3,147,750	840,970	2,306,780
Massachusetts	55,749,732	17,569,506	38,180,226
New Hampshire	6,537,894	407,894	6,130,000
New Jersey	9,843,072	5,869,786	3,973,286
New York	7,320,882	1,412,237	5,908,645
Pennsylvania	15,701,529	12,728,111	2,973,418
Rhode Island	28,265,879	13,403,194	14,862,685
All other states	7,003,854	1,803,854	5,200,000
Merino	33,406,724	2,087,824	31,318,900
Connecticut	2,364,499	13,423	2,351,076
Maine	3,293,788	.....	3,293,788
Massachusetts	7,919,052	33,115	7,885,937
New Hampshire	2,782,311	30,000	2,752,311
New York	993,875	266,000	727,875
Pennsylvania	7,347,596	1,658,124	5,689,472
Rhode Island	1,881,086	65,430	1,815,656
All other states	6,824,517	21,732	6,802,785
Cotton	44,450,262	39,432,613	5,017,649
Connecticut	1,194,956	1,193,956	1,000
Maine	3,031,855	2,453,388	578,467
Massachusetts	14,869,027	12,116,277	2,752,750
New Hampshire	1,183,680	1,183,680	.....
New Jersey	938,227	833,227	105,000
New York	1,116,264	990,264	126,000
Pennsylvania	12,668,845	11,969,645	699,200
Rhode Island	5,538,110	5,479,701	58,409
All other states	3,909,298	3,212,475	696,823
Shoddy, mungo, and wool extract	56,994,363	24,052,730	32,941,633
Connecticut	2,544,412	1,593,181	951,231
Maine	4,880,846	4,110,846	770,000
Massachusetts	18,448,639	3,687,530	14,761,109
New Hampshire	5,798,570	2,423,570	3,375,000
New Jersey	1,117,038	272,038	845,000
New York	1,963,059	939,539	1,023,520
Pennsylvania	11,740,378	4,645,405	7,094,973
Rhode Island	1,546,464	1,546,464	.....
All other states	8,954,957	4,834,157	4,120,800

The greater portion of the woolen and worsted yarns were manufactured in the establishment where used—99 per cent of the woolen and 57.4 per cent of the worsted. Most of the merino yarns also were manufactured in the plant where used, only 6.2 per cent being purchased stock; but of the total quantity of cotton yarns used in the woolen industry, 88.7 per cent was purchased. Approximately three-fifths (57.8 per cent) of the shoddy, mungo, and wool extract was manufactured in the mills where used.

Wool used in the woolen industry.—Table 27 gives the quantity of wool in condition purchased, the equivalent weight in scoured condition, the total cost, and the average cost per pound on a scoured basis for each of the four branches of the woolen industry for each census from 1879 to 1909.

The total equivalent amount of scoured wool used in 1909 in the woolen industry was 301,004,252 pounds, representing an increase of 49.7 per cent over the quantity reported in 1899. The same industry reported 488,368,690 pounds of wool "in condition purchased," but it is impossible from these figures to determine the percentage of loss in weight from scouring greasy wool, because the wool reported "in condition purchased" includes a large amount of scoured wool, and, moreover, the scoured equivalents are to a considerable extent estimated.

Table 27 — BRANCH OF INDUSTRY AND YEAR.	WOOL USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS): 1909			
	Quantity (pounds).		Cost.	
	In condition purchased.	Equivalent in scoured condition.	Total.	Average per pound on scoured basis (cents).
The industry as a whole:				
1909	**488,368,690**	**301,004,252**	**$140,998,437**	**46.84**
1904	**432,205,574**	**250,642,723**	**109,317,633**	**43.61**
1899	**342,498,189**	**201,072,221**	**81,789,243**	**40.68**
1889	**294,276,454**	**162,447,184**	**80,430,279**	**49.51**
1879	**251,559,784**	**142,389,923**	**86,885,202**	**61.02**
Worsted goods:				
1909	387,717,415	230,580,497	109,237,887	47.38
1904	261,368,084	139,173,774	62,734,716	45.08
1899	179,977,036	103,338,616	44,306,141	42.87
1889	97,701,474	54,989,746	28,280,287	51.43
1879	41,149,326	26,334,635	15,235,878	57.85
Woolen goods:				
1909	87,037,951	60,126,473	27,429,030	45.62
1904	157,335,727	102,106,291	42,698,735	41.82
1899	150,200,616	89,366,903	34,497,689	38.60
1889	185,307,944	100,226,094	48,859,811	48.75
1879	197,524,955	109,724,213	67,380,250	61.41
Felt goods:				
1909	12,409,826	9,308,172	3,927,393	42.19
1904	11,808,238	8,131,082	3,388,588	41.67
1899	9,666,263	6,468,097	2,196,440	33.96
1889	6,729,083	4,213,230	1,841,382	43.70
1879	4,913,873	2,733,796	1,624,871	59.44
Wool hats:				
1909	1,203,498	989,110	404,127	40.86
1904	1,633,525	1,231,576	495,594	40.24
1899	2,713,374	1,898,605	788,973	41.56
1889	4,537,953	3,018,114	1,448,799	48.00
1879	7,971,610	3,597,279	2,644,293	73.51

The rise in the price of wool since 1899 is clearly brought out in Table 27. In each branch of the industry except the minor branch devoted to the manufacture of wool hats the average cost of wool per pound was higher in 1904 than in 1899, and in every branch it was higher in 1909 than in 1904. It will be noticed that in 1909 the average cost per pound was highest in the worsted-goods branch (47.4 cents), but that the woolen-goods branch shows the greatest relative increase in the average cost from 1904 to 1909 (9.1 per cent).

Fibers used in the woolen industry.—Table 28 shows the quantity of the several classes of raw fibers and of shoddy used in the woolen industry in 1909, 1904, 1899, and 1889, together with the proportion which each formed of the total consumption of all fibers.

One of the most interesting features in the development of the woolen industry during the five years from 1904 to 1909 is the decrease in the amount of shoddy used. It must be explained, however, that the answers to the inquiry relating to the amount of shoddy produced in woolen mills for their own use were, in some instances, based upon estimates.

Table 28

MATERIAL.	PRINCIPAL FIBERS USED IN THE WOOLEN INDUSTRY, EXCLUSIVE OF CARPETS AND RUGS (POUNDS).			
	1909	1904	1899	1889
Total	**412,845,880**	**426,204,623**	**341,650,104**	**281,528,623**
Scoured wool	301,004,252	250,642,723	201,072,221	162,447,184
Mohair, and camel, alpaca, and vicuna hair	7,847,359	7,198,996	5,101,966	8,376,494
Other animal hair	25,600,175	29,480,628	23,378,082	13,206,495
Shoddy	56,994,363	104,286,244	70,627,275	56,227,963
Purchased	24,052,730	33,484,250	33,752,275	(1)
Made for consumption	32,941,633	70,801,994	36,875,000	(1)
Cotton	21,399,731	34,596,032	41,470,560	41,270,487
Per cent of total	**100.0**	**100.0**	**100.0**	**100.0**
Scoured wool	72.9	58.8	58.9	57.7
Mohair, and camel, alpaca, and vicuna hair	1.9	1.7	1.5	3.0
Other animal hair	6.2	6.9	6.8	4.7
Shoddy	13.8	24.5	20.7	20.0
Purchased	5.8	7.9	9.9	.....
Made for consumption	8.0	16.6	10.8	.....
Cotton	5.2	8.1	12.1	14.7
Scoured wool and shoddy, total	**357,998,615**	**354,928,967**	**271,699,496**	**218,675,147**
Per cent of total	100.0	100.0	100.0	100.0
Scoured wool	84.1	70.6	74.0	74.3
Shoddy	15.9	29.4	26.0	25.7
Purchased	6.7	9.4	12.4	.....
Made for consumption	9.2	19.9	13.6	.....

[1] Not reported separately.

Imports of wool.—Table 29 presents statistics for the imports of wool into the United States in 1909, 1904, and 1899 from the several continental districts, and for the imports of each of the three classes or grades of wool (clothing wool, combing wool, and carpet wool) from the more important countries contributing to the total.

The figures are taken from the report on "Commerce and Navigation of the United States," issued by the Bureau of Foreign and Domestic Commerce of the Department of Commerce. This table covers the total quantity of wool imported.

The imports of wool for the fiscal year 1909 exceeded those for 1899 by approximately 190,000,000 pounds, or 247.2 per cent, the gains being large in the imports from all continental districts except Africa. South America furnished 20.8 per cent of all imports in 1909, as compared with 13.2 per cent in 1899, and Oceania 13.3 per cent in 1909, as compared with 3.6 per cent in 1890.

Table 29

	IMPORTS OF WOOL INTO THE UNITED STATES (POUNDS).		
	1909[1]	1904[1]	1899[1]
All classes	**266,409,304**	**173,742,834**	**76,736,200**
Imported from—			
Europe	126,156,163	95,450,635	44,093,670
South America	55,412,106	28,171,843	10,113,649
Asia	47,496,140	37,530,053	19,143,913
Oceania	35,382,010	10,037,498	2,792,019
North America	1,837,346	1,511,852	208,697
Africa	125,539	140,953	384,261
Per cent of total	**100.0**	**100.0**	**100.0**
Europe	47.4	54.9	57.5
South America	20.8	16.2	13.2
Asia	17.8	21.6	24.9
Oceania	13.3	6.3	3.6
North America	0.7	0.9	0.3
Africa	(2)	0.1	0.5
By class or grade:			
Clothing wool (class 1)	142,580,993	45,575,993	12,976,999
Combing wool (class 2)	21,952,259	12,934,143	2,155,419
Carpet wool (class 3)	101,876,052	115,232,698	61,603,791
Per cent of total	100.0	100.0	100.0
Clothing wool (class 1)	53.5	26.2	16.9
Combing wool (class 2)	8.2	7.4	2.8
Carpet wool (class 3)	38.2	66.3	80.3
By class or grade—Continued.			
Clothing wool, class 1, imported from	142,580,993	45,575,993	12,976,999
United Kingdom	54,606,609	17,335,314	4,502,541
Argentina	41,442,475	16,014,308	2,693,426
Australia and Tasmania	30,617,828	10,937,498	.....
Uruguay	4,911,914	112,208	9,045
Belgium	4,723,078	305,343	557,733
New Zealand	4,760,498	.....	.....
All other countries	1,518,591	871,322	5,214,254
Combing wool class 2 imported from	21,952,259	12,934,143	2,155,419
United Kingdom	18,334,147	9,443,853	2,111,028
Argentina	1,590,188	100,548	.....
Canada	1,484,641	1,419,151	36,971
All other countries	543,283	1,970,591	7,420
Carpet wool class 3 imported from	101,876,052	115,232,698	61,603,791
Chinese Empire	32,272,982	23,581,814	14,264,551
United Kingdom	31,103,417	31,531,212	19,294,414
Turkey (European and Asiatic)	7,930,404	13,342,730	4,717,245
Russia (European and Asiatic)	9,490,741	24,929,977	13,304,601
British India	4,471,951	2,661,793	816,122
Germany	2,891,902	1,531,864	721,358
Argentina	6,672,175	9,988,356	4,880,175
All other countries	7,042,480	7,664,952	3,605,325

[1] Year ending June 30.

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

The most remarkable gain was in clothing wool (class 1), which increased from 12,976,999 pounds in 1899 to 142,580,993 pounds, or almost eleven times as much, in 1909. This class constituted 53.5 per cent of the total imports of wool in 1909, as compared with 16.9 per cent in 1899. The quantity of combing wool (class 2) imported in 1909 was more than ten times the quantity imported in 1899.

Supply of wool available for manufacture.—Table 30 shows the estimated net supply of wool available for manufacture for each year from 1900 to 1909, inclusive. The figures for domestic production are the estimates of the National Association of Wool Manufacturers, and the figures for imports are taken from the report on "Commerce and Navigation of the United States."

Imports for consumption include imports direct for consumption and withdrawals for consumption of wool held in bond. The statistics for imported wool as here presented represent the quantities of foreign duty-paid wool available for consumption, whereas the wool imports as given in Table 29 are total imports. The increase in bonded warehouse stocks during the fiscal year ending June 30, 1909, over 1908 was more than 50,000,000 pounds.

The estimated supply of wool of all classes in 1909, figured on the basis of imports, exports, and estimated domestic production, was 537,298,699 pounds—an amount larger than that in any previous year except 1895 and 1897. Inasmuch as the textile industries reported the consumption of 559,850,995 pounds of wool (in condition in which purchased) during the

calendar year 1909, there is a fair degree of correspondence between the figures for supply and the consumption of wool for that year. It should be noted that in drawing comparisons between consumption and supply cognizance should be taken of the stocks held in the mill warehouses, which may vary greatly in different years; but statistics for such stocks are, however, not available. For the five years from 1905 to 1909, inclusive, the average estimated annual supply was somewhat over 500,000,000 pounds.

Table 30

YEAR.	WOOL SUPPLY (POUNDS).								
	Domestic production.[1]	Imports for consumption.[2]			Domestic exports.[2]	Net supply.		Ratio of imports to net supply (per cent).	
		Total.	Clothing and combing wool.	Carpet wool.		All classes.	Clothing and combing wool.	All classes.	Clothing and combing wool.
1909	328,110,749	209,216,326	117,850,771	91,365,555	28,376	537,298,699	445,033,144	38.9	26.4
1908	311,138,321	135,970,907	72,117,429	63,853,478	182,458	446,926,770	383,073,292	30.4	18.8
1907	298,294,760	196,035,251	103,582,132	92,453,119	214,840	494,115,161	401,662,042	39.7	25.8
1906	298,915,130	219,495,010	109,875,744	109,619,266	192,481	518,217,659	408,598,393	42.4	26.9
1905	295,488,438	211,287,482	98,691,605	112,595,877	123,951	506,651,969	394,056,092	41.7	25.0
1904	291,783,032	161,720,007	53,586,970	108,133,037	319,750	453,183,289	345,050,252	35.7	15.5
1903	287,450,000	179,651,038	60,405,820	119,245,218	518,919	466,582,119	347,336,001	38.5	17.4
1902	316,341,032	160,437,130	61,949,400	98,487,730	123,278	476,654,884	378,167,154	33.7	16.4
1901	302,502,382	124,863,051	43,140,108	81,722,943	199,565	427,165,868	345,442,925	29.2	12.5
1900	288,636,621	128,250,945	29,280,001	98,970,344	2,200,309	414,687,257	315,716,913	30.9	9.3

[1] Estimates of the National Association of Wool Manufacturers.

[2] Fiscal year ending June 30.

It will be observed that during each year from 1905 to 1909, with the exception of 1908, the proportion of foreign wool in the net supply was considerably higher than for any one of the five years ending with 1904. In 1906 the imports amounted to 42.4 per cent of the supply—the highest proportion for any year shown.

Practically all of the domestic wool is of the finer grades—clothing wool, and combing wool, designated in the statistics of imports and exports as class 1 and class 2, respectively.

Foreign wool in 1909 constituted only 26.4 per cent of the total net supply of classes 1 and 2, but this proportion was considerably higher than the corresponding proportion in any year prior to 1905. The domestic production responded somewhat to the increased demand, however, especially in the years 1908 and 1909, the production of the latter year being, with the exception of the years 1892 and 1893, the largest in the history of wool growing in this country.

PRODUCTS.

Summary for the United States: 1909.—Table 31 shows the quantity and value of the leading products made by establishments in the woolen industry, and of similar products made by establishments in other industries, with the combined totals. Statistics for many classes of goods not separately shown in this table are given in later tables. The products made by establishments in other industries, however, do not enter into the statistics presented in other tables in this report.

The value of all products of the industry in 1909 was $435,978,558. In addition, woolen, worsted, and felt goods and wool hats to the value of $3,862,340 were reported as subsidiary products by establishments engaged primarily in the manufacture of other products, including a small amount received for contract work, this figure including the value of the upholstery goods made in carpet and rug establishments. On the other hand the products reported for the woolen industry include some products other than woolen, worsted, and felt goods and wool hats, while $3,132,283 was received for contract work, this amount representing chiefly duplication, as the value of the products on which the work was done is included in the main in the value of the products of the establishments within the industry for which it was done. The total value of woolen, worsted, and felt goods and wool hats manufactured (including that of yarns and other partly manufactured products made for sale) was therefore approximately $439,840,898, although the actual figure probably differs somewhat from this, as some woolen products made by establishments outside the woolen industry may not have been separately reported, while the establishments in the woolen industry may not in all cases have made separate reports of the products primarily manufactured in other industries.

Table 31

PRODUCT.	Total production.	Production in the woolen industry (exclusive of carpets and rugs).	Production in other industries.[1]
All products of the woolen industry, total value	**$439,840,898**	**$435,978,558**	**$3,862,340**
All-wool woven goods:			
Square yards	324,436,603	323,444,896	991,707
Value	$220,659,988	$220,079,555	$580,433
Wool cloths, doeskins, cassimeres, cheviots, etc.—			
Square yards	40,845,464	40,843,979	1,485
Value	$29,292,445	$29,291,059	$1,386
Worsted coatings, serges, and suitings—			
Square yards	119,680,955	119,655,069	25,886
Value	$101,926,782	$101,903,153	$23,629
Wool dress goods, sackings, tricots, etc., and opera or similar flannels—			
Square yards	20,166,880	20,099,956	66,924
Value	$16,408,898	$16,385,498	$23,400
Worsted dress goods, cashmeres, serges, mohair, bunting, etc.—			
Square yards	106,697,261	105,801,349	895,912
Value	$54,561,794	$54,030,376	$531,418
Blankets—			
Square yards	5,639,934	5,638,434	1,500
Value	$3,455,185	$3,454,585	$600
All other—			
Square yards	22,406,109	22,406,109	.....
Value	$15,014,884	$15,014,884	.....
Union or cotton mixed woven goods:			
Square yards	37,783,813	37,453,351	330,462
Value	$14,418,128	$14,327,973	$90,155
Unions, tweeds, cheviots, cassimeres, etc.—			
Square yards	18,921,290	18,917,478	3,812
Value	$7,782,462	$7,780,854	$1,608
Sackings, tricots, dress goods, and opera and similar flannels—			
Square yards	4,564,539	4,319,539	245,000
Value	$1,827,153	$1,776,721	$50,432
Blankets—			
Square yards	1,743,408	1,717,758	25,650
Value	$660,689	$650,714	$9,975
Union or cotton mixed woven goods—Continued.			
Horse blankets—			
Square yards	750,176	694,176	56,000
Value	$214,378	$186,238	$28,140
All other—			
Square yards	11,804,400	11,804,400	.....
Value	$3,933,446	$3,933,446	.....
Cotton-warp woven goods:			
Square yards	211,653,600	210,452,401	1,201,199
Value	$62,662,058	$62,323,086	$338,972
Worsted filling cassimeres, doeskins, jeans, tweeds, coatings, etc.—			
Square yards	29,628,199	29,220,252	407,947
Value	$15,160,952	$15,009,081	$151,871
Worsted filling dress goods, cashmeres, serges, mohairs, etc.—			
Square yards	65,666,233	65,112,981	553,252
Value	$14,926,066	$14,798,965	$127,101
Wool filling dress goods and repellants—			
Square yards	13,156,060	12,916,060	240,000
Value	$2,801,816	$2,741,816	$60,000
All other—			
Square yards	103,203,108	103,203,108	.....
Value	$29,773,224	$29,773,224	.....
Upholstery goods and sundries	$3,785,229	$1,986,330	$1,798,899
Tapestry, terry, plush, rep, etc.—			
Square yards	4,380,460	1,176,542	3,203,918
Value	$3,327,547	$1,528,648	$1,798,899
All other	$457,682	$457,682	.....
Wool felt hats:			
Dozens	658,528	590,957	67,571
Value	$4,551,430	$3,646,787	$904,643
Yarns, woolen, worsted, and merino:			
Pounds	131,430,238	130,855,808	574,430
Value	$93,701,641	$93,567,183	$134,458
All other products	$36,918,521	$36,915,361	$3,160
Contract work	$3,143,903	$3,132,283	$11,620

[1] Includes products made by establishments in the following industries: Carpets and rugs, other than rag; carriages and wagons and materials; clothing, men's, including shirts; cotton goods, including cotton small wares; dyeing and finishing textiles; flour-mill and gristmill products; hats and caps, other than felt, straw, and wool; hats, fur-felt; hats, straw; hosiery and knit goods; millinery and lace goods; silk and silk goods, including throwsters; and waste.

[2] Includes products manufactured primarily in the following industries: Carpets and rugs, other than rag; clothing, horse; clothing, men's, including shirts; cotton goods, including cotton small wares; foundry and machine-shop products; hats, fur-felt; hats, straw; hosiery and knit goods; house-furnishing goods, not elsewhere specified; and leather goods.

Summary for the woolen goods and worsted goods branches of the industry.—Table 32 gives the quantity and value of the different products of the woolen goods and worsted goods branches of the industry for 1909, 1904, and 1899.

In comparing the percentages of increase (or decrease) in quantity shown in this table with those in value, it should be borne in mind that each of the separate classes of products listed includes a variety of grades and styles differing from one another in value. Consequently no definite conclusions as to changes in prices can be drawn from this comparison. A change in the relative importance of the different grades and styles within a given class might result in a greater average value per yard for the class as a whole at one census than at another, without any corresponding increase in the prices of any of the specific kinds of goods covered. In view of these conditions, the Census Bureau has not deemed it desirable to compute average values for any of the classes of products shown.

All-wool woven goods contributed somewhat over half (52.4 per cent) of the total value of products of the woolen and worsted mills in 1909; union or cotton-mixed woven goods contributed 3.4 per cent; cotton-warp woven goods, 14.8 per cent; upholstering goods, five-tenths of 1 per cent; yarn and other partly manufactured products made for sale, 27.4 per cent; and all other products, eight-tenths of 1 per cent.

The amount of duplication involved in the use of the products of one mill as material for others can not be accurately determined, as it is impossible to distinguish the materials purchased from other mills in the industry from similar materials purchased from abroad or from establishments in other industries. It is probable, however, that most of the woolen, worsted, and merino yarns purchased by the mills in the woolen industry are purchased from other mills in the same industry. The total cost of purchased yarns of these classes used in 1909 was $56,910,427. A further duplication of several million dollars is undoubtedly involved in the use of purchased waste, noils, tops, etc.

In 1909 the establishments in the woolen goods and worsted goods branches of the industry produced 570,743,797 square yards of woven goods, exclusive of upholstery goods and sundries. To this total all-wool woven goods contributed 322,944,365 square yards, or 56.6 per cent; union or cotton-mixed woven goods, 37,453,351 square yards, or 6.6 per cent; and cotton-warp woven goods, 210,346,081 square yards, or 36.9 per cent.

The production of woven goods in 1904 (exclusive of upholstery goods and sundries) amounted to

505,821,956 square yards and that in 1899 to 426,572,856 square yards, the increase for the decade 1899–1909 being 33.8 per cent. The value of these goods in 1909 was $296,447,594; in 1904, $234,737,036; and in 1899, $183,306,664, the increase for the decade being 61.7 per cent.

Table 32

PRODUCT.	PRODUCTS OF THE WOOLEN GOODS AND WORSTED GOODS BRANCHES OF THE INDUSTRY.			
	1909	1904	1899	Per cent of increase:[1] 1899–1909
Total value	[2] $419,743,521	[3] $307,941,710	$238,744,502	.....
All-wool woven goods:				
Square yards	322,944,365	260,567,488	216,359,702	49.3
Value	$219,853,767	$158,390,336	$117,757,169	86.7
Wool cloths, doeskins, cassimeres, cheviots, etc.—				
Square yards	40,843,979	42,487,566	34,298,426	19.1
Value	$29,291,059	$29,556,252	$22,645,869	29.3
Worsted coatings, serges, and suitings—				
Square yards	119,655,069	59,592,811	54,033,679	121.4
Value	$101,903,153	$56,731,196	$43,003,550	137.0
Woolen overcoatings, cloakings, kerseys, etc.—				
Square yards	14,697,770	22,411,530	18,729,194	−21.5
Value	$11,230,856	$16,934,112	$16,131,769	−30.4
Worsted overcoatings and cloakings—				
Square yards	654,404	1,057,068	877,133	−25.4
Value	$821,688	$546,170	$567,390	44.8
Wool dress goods, sackings, tricots, etc., and opera and similar flannels—				
Square yards	29,099,956	48,874,396	33,594,212	−13.4
Value	$16,385,498	$19,826,017	$12,976,489	26.3
Worsted dress goods, cashmeres, serges, bunting, etc.—				
Square yards	105,801,349	66,428,825	57,712,086	83.3
Value	$54,030,376	$27,802,181	$16,316,392	231.1
Carriage cloths—				
Square yards	1,782,855	1,741,765	1,220,408	46.1
Value	$947,862	$964,557	$696,999	36.0
Flannels for underwear—				
Square yards	3,856,353	8,710,131	9,324,720	−58.7
Value	$1,257,271	$2,046,858	$2,344,559	−46.4
Blankets—				
Square yards	5,137,903	7,316,179	5,454,173	−5.8
Value	$3,228,797	$2,751,029	$2,316,908	39.4
Horse blankets—				
Square yards	247,395	740,237	514,952	−52.0
Value	$185,430	$418,219	$256,211	−27.6
Woven shawls—				
Square yards	704,153	895,777	600,104	17.3
Value	$404,583	$557,370	$500,523	−19.2
All other—				
Square yards	463,179	310,603	615	.....
Value	$167,194	$257,375	$510	.....
Union or cotton mixed woven goods:				
Square yards	37,453,351	63,197,407	57,334,570	−34.7
Value	$14,327,973	$26,288,407	$23,111,696	−38.0
Unions, tweeds, cheviots, cassimeres, etc.—				
Square yards	18,917,478	35,103,110	30,767,915	−38.5
Value	$7,780,854	$15,050,726	$13,695,830	−43.2
Overcoatings and cloakings—				
Square yards	4,281,739	5,373,053	6,087,366	−29.7
Value	$2,363,381	$3,353,758	$3,518,613	−32.8
Sackings, tricots, dress goods, and opera and similar flannels—				
Square yards	4,319,539	11,690,740	11,176,752	−61.4
Value	$1,776,721	$4,926,596	$3,669,584	−51.6
Flannels for underwear—				
Square yards	7,063,572	7,273,761	6,217,094	13.6
Value	$1,308,369	$1,528,928	$1,284,578	1.9
Blankets—				
Square yards	1,717,758	3,114,110	1,530,696	12.2
Value	$650,714	$1,198,706	$561,649	15.9
All other—				
Square yards	1,153,265	642,633	1,554,747	−25.8
Value	$447,934	$229,693	$381,442	17.4
Cotton-warp woven goods:				
Square yards	210,346,081	182,057,061	152,878,584	37.6
Value	$62,265,854	$50,058,293	$42,437,799	46.7
Wool-filling cassimeres, doeskins, jeans, tweeds, coatings, etc.—				
Square yards	45,244,866	34,602,165	37,160,449	21.8
Value	$12,107,320	$10,877,081	$11,024,538	9.8
Cotton-warp woven goods—Ctd.				
Worsted-filling cassimeres, doeskins, jeans, tweeds, coatings, etc.—				
Square yards	29,220,252	16,688,620	12,603,719	130.7
Value	$15,009,081	$6,969,402	$7,207,508	106.5
Wool-filling overcoatings and cloakings—				
Square yards	2,075,502	8,198,406	3,917,498	−47.0
Value	$771,879	$2,478,878	$1,430,430	−46.0
Satinets and linseys—				
Square yards	5,102,460	22,339,112	13,051,729	−60.9
Value	$912,182	$4,074,800	$2,873,181	−68.3
Worsted-filling dress goods, cashmeres, serges, mohairs, etc.—				
Square yards	65,112,981	49,300,369	45,784,011	42.2
Value	$14,798,965	$12,711,554	$10,423,206	42.0
Wool-filling dress goods and repellents—				
Square yards	12,916,060	12,139,080	7,496,898	72.3
Value	$2,741,816	$3,230,561	$1,890,488	45.0
Domett flannels and shirtings—				
Square yards	4,571,765	4,285,838	4,555,013	0.4
Value	$911,967	$769,476	$976,465	−6.6
Linings, Italian cloths, and lastings—				
Square yards	28,928,148	17,619,325	10,157,039	184.8
Value	$9,008,799	$4,505,927	$2,228,434	304.3
Blankets—				
Square yards	9,746,841	9,267,144	11,107,104	−12.2
Value	$2,684,919	$2,218,243	$2,241,342	19.8
Horse blankets—				
Square yards	4,210,098	6,307,836	5,702,315	−26.2
Value	$1,676,942	$1,083,154	$1,252,824	33.9
Carriage robes—				
Square yards	2,889,444	1,309,166	1,250,233	131.1
Value	$1,396,595	$1,139,217	$815,233	71.3
All other—				
Square yards	327,664	.....	32,576	905.8
Value	$245,389	.....	$14,150	1,634.2
Upholstery goods and sundries	$1,986,330	$1,625,233	$3,259,727	−39.1
Woolen and worsted—				
Square yards	1,176,542	1,060,739	447,568	162.9
Value	$1,528,648	$908,937	$742,121	106.0
All other	$457,682	$716,296	$2,517,606	−81.8
Partly manufactured products for sale	$115,032,485	$66,466,672	$47,589,422	141.7
Yarns—				
Woolen—				
Pounds	28,520,493	42,878,320	32,699,851	−12.8
Value	$7,505,412	$9,993,894	$6,804,626	10.3
Worsted—				
Pounds	88,323,953	55,475,235	43,003,343	105.4
Value	$80,395,543	$40,142,077	$30,081,425	167.3
Woolen, union or merino—				
Pounds	10,249,625	8,824,064	15,974,567	−12.3
Value	$2,143,416	$2,538,098	$4,668,125	21.4
Worsted, union or merino—				
Pounds	3,761,737	3,314,549		
Value	$3,522,812	$2,460,558		
All other—				
Pounds	3,195,553	2,799,060	4,536,105	−29.6
Value	$974,570	$1,162,795	$1,451,390	−32.9
Worsted tops and slubbing—				
Pounds	11,321,279	4,772,582	(4)	.....
Value	$8,027,231	$2,855,171	(4)	.....
Noils—				
Pounds	27,479,293	15,379,600	12,176,843	125.7
Value	$8,938,589	$4,805,976	$3,354,187	166.5
Waste—				
Pounds	24,057,580	17,946,076	8,163,294	194.7
Value	$3,524,912	$2,448,183	$1,229,669	186.7
All other products	[5] $3,250,857	$3,924,232	$3,019,906	7.6
Amount received for work on materials for others	$3,026,255	$1,188,537	$1,568,783	92.9

[1] A minus sign (−) denotes decrease.
[2] In addition, woolen and worsted goods to the value of $2,957,057 were made by establishments engaged primarily in the manufacture of other products.
[3] In addition, woolen and worsted goods to the value of $362,966 were made by establishments engaged primarily in the manufacture of other products.
[4] Included with worsted yarn.
[5] Includes products other than woolen and worsted goods to the value of $930,831.

Of the three main groups of woven goods the all wool group shows the highest rate of increase, the output having increased 49.3 per cent in quantity and 86.7 per cent in value from 1899 to 1909. The value of this class of goods constituted 74.2 per cent of the total for all woven goods in 1909, as compared with 64.2 per cent in 1899. Worsted coatings, serges, suitings, overcoatings, cloakings, dress goods, cashmeres, and bunting together formed 70 per cent of the all-wool woven goods manufactured in 1909. The total number of square yards of these worsted fabrics manufactured in 1909 was a little more than double that in 1899.

The production of union or cotton-mixed goods in 1909 was much less than in 1904 or 1899. The production of "unions, tweeds, cheviots, cashmeres, etc.," which comprised more than half of the union or cotton-mixed woven goods produced, decreased 38.5 per cent during the decade. The output of overcoatings and that of cloakings of this class decreased 29.7 per cent, and sackings, tricots, dress goods, etc., decreased 61.4 per cent during this period. The production of flannels for underwear and cotton mixed blankets increased 13.6 per cent from 1899 to 1909, although there was a decrease between 1904 and 1909.

Cotton-warp woven goods show an increase from 1899 to 1909 of 57,467,497 square yards, or 37.6 per cent. The value of such goods reported was 21 per cent of the value of all woven goods (not including upholstery goods and sundries) in 1909 and 23.2 per cent in 1899. The production of wool filling overcoatings, cloakings, etc., however, shows a marked decrease, as does that of satinets and linseys. Blankets and horse blankets also show decreases in quantity during the decade. The production of linings, Italian cloths, etc., on the other hand, increased 184.8 per cent during the 10 years. The output of woolen and worsted upholstery goods in 1909 was more than twice as great as in 1899.

The yarns shown in Table 30 include only those produced for sale. The total quantity increased from 96,213,866 pounds in 1899 to 134,051,361 pounds in 1909, or 39.3 per cent. In 1909, worsted yarn formed 65.9 per cent of the total quantity, the output having increased 105.4 per cent during the decade, while the quantity of both woolen and merino yarns decreased.

Table 33 shows the quantity of all-wool, cotton-mixed, and cotton-warp fabrics produced in the woolen goods and worsted goods branches of the industry in 1909, 1904, and 1899.

Table 33 — PRODUCTION OF ALL-WOOL, COTTON-MIXED, AND COTTON-WARP FABRICS IN THE WOOLEN GOODS AND WORSTED GOODS BRANCHES OF THE WOOLEN INDUSTRY (SQUARE YARDS).

PRODUCT.	1909	1904	1899	Per cent of increase:[1] 1899–1909
Total production	**571,350,648**	**506,013,537**	**426,949,136**	**33.8**
All wool	323,444,896	260,681,119	216,683,554	49.3
Union or cotton mixed	37,453,351	63,197,407	57,334,570	−34.7
Cotton warp	210,452,401	182,135,011	152,931,012	37.6
Per cent of total	**100.0**	**100.0**	**100.0**	.....
All wool	56.6	51.5	50.8	.....
Union or cotton mixed	6.6	12.5	13.4	.....
Cotton warp	36.8	36.0	35.8	.....
Cassimeres, tweeds, cheviots, etc., for men's wear	253,881,644	188,474,272	169,177,028	50.1
All wool	160,499,048	102,080,377	88,584,945	81.2
Union or cotton mixed	18,917,478	35,103,110	30,767,915	−38.5
Cotton warp	74,465,118	51,290,785	49,824,168	49.5
Per cent of total	100.0	100.0	100.0	.....
All wool	63.2	54.2	52.4	.....
Union or cotton mixed	7.5	18.6	18.2	.....
Cotton warp	29.3	27.2	29.4	.....
Overcoatings, cloakings, etc	22,019,399	37,040,657	29,614,919	−25.6
All wool	15,352,174	23,469,198	19,610,055	−21.7
Union or cotton mixed	4,281,739	5,373,053	6,087,366	−29.7
Cotton warp	2,385,486	8,198,406	3,917,498	−39.1
Per cent of total	100.0	100.0	100.0	.....
All wool	69.7	63.4	66.2	.....
Union or cotton mixed	19.4	14.5	20.6	.....
Cotton warp	10.8	22.1	13.2	.....
Dress goods, sackings, tricots, etc.	217,627,885	188,717,073	155,767,439	39.7
All wool	135,279,305	115,586,884	91,309,778	48.2
Union or cotton mixed	4,319,530	11,690,740	11,176,752	−61.4
Cotton warp	78,029,041	61,439,449	53,280,909	46.4
Per cent of total	100.0	100.0	100.0	.....
All wool	62.2	61.2	58.6	.....
Union or cotton mixed	2.0	6.2	7.2	.....
Cotton warp	35.9	32.6	34.2	.....
Carriage cloths (all wool)	1,782,855	1,741,765	1,220,408	46.1
Flannels for underwear	15,491,690	20,269,730	20,117,663	−23.0
All wool	3,856,353	8,710,131	9,345,556	−58.7
Union or cotton mixed	7,063,572	7,273,761	6,217,094	13.6
Cotton warp [2]	4,571,765	4,285,838	4,555,013	0.4
Flannels for underwear—Contd.				
Per cent of total	100.0	100.0	100.0	.....
All wool	24.9	43.0	46.5	.....
Union or cotton mixed	45.6	35.9	30.9	.....
Cotton warp	29.5	21.1	22.6	.....
Astrakhan (cotton warp)	17,680	(3)	32,576	−45.7
Satinets and linseys (cotton warp)	5,102,460	22,343,617	13,051,729	−60.9
Linings, Italian cloths, and lastings (cotton warp)	28,928,148	17,619,325	10,157,039	184.8
Blankets	17,209,353	19,869,262	18,155,505	−5.2
All wool	5,638,434	7,414,563	5,465,277	3.2
Union or cotton mixed	1,717,758	3,114,110	1,530,696	12.2
Cotton warp	9,853,161	9,340,589	11,159,532	−11.7
Per cent of total	100.0	100.0	100.0	.....
All wool	32.7	37.3	30.1	.....
Union or cotton mixed	10.0	15.7	8.4	.....
Cotton warp	57.3	47.0	61.5	.....
Horse blankets	5,151,669	7,666,873	7,315,304	−29.6
All wool	247,395	740,237	518,452	−52.3
Union or cotton mixed	694,176	618,800	1,094,537	−36.5
Cotton warp	4,210,098	6,307,836	5,702,315	−26.2
Per cent of total	100.0	100.0	100.0	.....
All wool	4.8	9.7	7.1	.....
Union or cotton mixed	13.5	8.1	15.0	.....
Cotton warp	81.7	82.3	78.0	.....
Carriage robes	3,433,712	1,375,186	1,739,422	97.4
All wool	85,179	42,187	28,979	193.9
Union or cotton mixed	459,089	23,833	460,210	−0.2
Cotton warp	2,889,444	1,309,166	1,250,233	131.1
Per cent of total	100.0	100.0	100.0	.....
All wool	2.5	3.1	1.7	.....
Union or cotton mixed	13.4	1.7	26.5	.....
Cotton warp	84.1	95.2	71.9	.....
Woven shawls (all wool)	704,153	895,777	600,104	17.3

[1] A minus sign (−) denotes decrease. [2] Includes domett flannels and shirtings. [3] Not reported.

The table also shows the percentage of the total quantity of the principal classes of fabrics which was reported as all-wool, cotton-mixed, and cotton-warp, respectively, and the percentage of increase in each case for the decade 1899–1909. Upholstery goods and sundries have not been included in this table, because these products were not classified according to character—whether all-wool or not. The "all-wool" classification is not intended to include fabrics having any admixture of cotton or other fiber (aside from animal hair) except such as may have been used to bring up a pattern or design. The "cotton-warp" classification includes goods woven with cotton weft on warp of woolen or worsted yarn, as well as goods woven on cotton warps, with weft partly or wholly of wool, worsted, or hair.

In the case of cassimeres, tweeds, cheviots, etc., and of dress goods, sackings, tricots, etc., all-wool fabrics formed a larger proportion of the total in 1909 than in 1904 and 1899, while cotton-mixed fabrics formed a considerably smaller proportion. In the case of flannels for underwear, on the other hand, cotton-mixed goods constituted a much larger proportion in 1909 than at either of the preceding censuses and all-wool goods a smaller proportion.

Summary for the felt goods branch of the industry.—Table 34 shows the quantity and value of the principal products of the felt goods branch of the woolen industry for 1909, 1904, and 1899, together with the percentage of increase for the decade 1899–1909.

The value of products reported for this branch of the industry increased from $6,461,691 in 1899 to $11,852,626 in 1909, or 83.4 per cent, with especially large gains in both quantity and value of the products classified as trimming and lining felts, felt skirts, etc., and of hair felting.

Summary for the wool hat branch of the industry.—Table 35 presents statistics of the products of the wool hat branch of the industry for 1909, 1904, and 1899.

The total value of products for this branch of the industry shows an increase of 22 per cent for the decade 1899–1909. The number of wool-felt hats reported for 1909, though greater than that shown for 1904, was materially less than that for 1899.

Table 34 — PRODUCTS OF THE FELT GOODS BRANCH OF THE WOOLEN INDUSTRY.

PRODUCT.	1909	1904	1899	Per cent of increase:[1] 1899–1909
Total value	**$11,852,626**	**$8,948,594**	**$6,461,691**	**83.4**
Felt cloths:				
Square yards	3,764,468	3,689,610	2,056,002	83.1
Value	$1,381,854	$1,830,627	$548,543	151.9
Trimming and lining felts, felt skirts, etc.:				
Square yards	5,953,410	5,145,340	2,469,830	.....
Value	$1,329,680	$1,188,908	$796,718	.....
Saddle felts:				
Pounds	1,650,994			
Value	$575,849			
Endless belts:				
Pounds	3,243,034	1,770,124	[2] 1,114,357	(3)
Value	$3,417,822	$1,707,216	$1,084,835	215.1
Boot and shoe linings:				
Square yards	1,661,060	2,823,137	1,052,538	57.8
Value	$544,456	$781,450	$540,110	−5.8
Hair felting:				
Square yards	1,159,999	605,214	125,000	828.0
Value	$531,045	$191,998	$56,950	832.5
All other felts	$3,549,876	$2,592,894	$2,261,918	(3)
All other products	$552,038	$655,501	$1,172,617	−52.9

[1] A minus sign (−) denotes decrease. [2] Square yards. [3] Comparable figures not available.

Table 35 — PRODUCTS OF THE WOOL HAT BRANCH OF THE WOOLEN INDUSTRY.

PRODUCT.	1909	1904	1899	Per cent of increase:[1] 1899–1909
Total value	**[2] $4,362,411**	**$3,457,266**	**$3,591,940**	**22.0**
Wool-felt hats:				
Dozens	590,957	446,124	811,425	−27.2
Value	$3,646,787	$3,290,070	$3,161,361	15.4
Wool-felt hat bodies and hats in the rough:				
Dozens	53,896	18,587	56,006	−3.8
Value	$309,492	$100,491	$120,262	157.3
All other products	$426,132	$66,705	$310,317	37.3

[1] A minus sign (−) denotes decrease.
[2] In addition, 67,571 dozen wool-felt hats, valued at $904,643, were made by establishments engaged primarily in other industries.

Total production of yarns and shoddy in the woolen industry (exclusive of carpets and rugs).—The total production of yarns and of shoddy, mungo, and wool extract in the four branches of the industry combined in 1909 is given in Table 36, the figures covering stock made for use in further processes of manufacture in the same mill, as well as that made for sale.

Table 36 — TOTAL PRODUCTION OF YARNS, SHODDY, ETC., IN THE WOOLEN INDUSTRY, EXCLUSIVE OF CARPETS AND RUGS (POUNDS): 1909

PRODUCT.	Total.	For sale.	For use in the same establishment.			
			Total.	Made in woolen mills.	Made in worsted mills.	Made in felt mills.
Yarns	**345,990,979**	**134,051,361**	**211,939,618**	**116,623,156**	**90,742,195**	**4,574,267**
Woolen	124,568,522	28,520,493	96,048,029	80,761,458	10,743,304	4,543,267
Worsted	168,748,960	[1] 89,193,920	79,555,040	3,097,658	76,457,382	.....
Merino	45,330,262	14,011,362	31,318,900	30,124,141	1,163,759	31,000
Cotton	7,343,235	2,325,586	5,017,649	2,639,899	2,377,750	.....
Shoddy, mungo, and wool extract	**33,378,690**	**437,057**	**32,941,633**	**31,021,323**	**1,045,310**	**875,000**

[1] Includes 869,967 pounds of mohair yarn.

Products of the woolen industry as a whole, by states.—Table 37 shows, by states, the quantities and values of the different products of the woolen industry as a whole in 1909, and the quantities produced in 1904 and 1899.

Table 37

PRODUCT AND STATE.	PRINCIPAL PRODUCTS OF THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS). 1909 Value.	1909 Quantity.	1904 Quantity.	1899 Quantity.
		Square yds.	*Square yds.*	*Square yds.*
All-wool woven goods	**$220,079,555**	**323,444,896**	**260,681,119**	**216,683,554**
Connecticut	15,103,628	17,987,303	18,377,887	11,549,809
Maine	8,607,710	15,089,929	12,990,152	15,213,365
Massachusetts	78,873,571	109,221,437	85,615,420	72,351,338
New Jersey	18,921,354	26,793,087	16,804,826	8,178,522
New York	12,830,093	17,243,027	12,459,072	9,464,705
Pennsylvania	22,653,317	33,149,873	26,622,510	19,498,412
Rhode Island	36,055,860	53,661,591	43,831,236	30,698,062
All other states	27,034,022	50,298,049	43,970,116	49,729,341
Wool cloths, doeskins, cassimeres, cheviots, etc., for men's wear	29,291,059	40,843,979	42,487,566	34,551,266
Connecticut	3,834,073	4,371,262	4,318,678	2,201,081
Maine	3,546,999	6,189,031	2,925,363	4,175,588
Massachusetts	9,156,465	13,096,953	14,308,537	12,830,426
New York	1,450,578	1,762,748	4,427,304	2,626,599
Rhode Island	3,436,215	4,716,866	4,555,010	2,394,323
All other states	7,866,729	10,707,119	11,952,674	[1] 10,323,249
Worsted coatings, serges, and suitings, for men's wear	101,903,153	119,655,069	59,592,811	54,033,679
Connecticut	6,783,552	6,993,858	3,678,079	2,975,355
Massachusetts	48,051,832	56,772,066	20,514,811	22,055,157
New Jersey	3,643,739	2,660,339	1,370,951	868,859
New York	6,420,930	6,823,860	3,195,395	3,132,310
Rhode Island	24,280,705	30,517,666	18,793,540	16,629,693
All other states	12,722,395	15,887,280	12,040,035	8,372,305
Woolen overcoatings, cloakings, kerseys, etc	11,230,856	14,697,770	22,411,530	18,732,922
Connecticut	2,618,255	2,827,661	1,905,798	2,213,987
Maine	1,490,455	1,857,948	1,406,334	1,779,389
Massachusetts	3,648,648	4,538,769	10,570,499	7,517,646
Rhode Island	120,488	178,227	592,199	810,894
All other states	3,353,010	5,295,165	7,936,700	[1] 6,411,006
Wool dress goods, sackings, tricots, etc., and opera and similar flannels	16,385,498	29,099,956	48,889,643	33,597,692
Connecticut	902,806	1,610,689	4,171,561	2,301,173
Maine	1,954,016	4,354,196	5,876,735	5,403,946
Massachusetts	6,220,727	11,731,023	24,017,924	12,606,040
All other states	7,307,949	11,404,048	14,823,423	[1] 13,286,533
Worsted dress goods, cashmeres, serges, bunting, etc	54,030,376	105,801,349	66,428,825	57,712,086
Massachusetts	10,856,014	21,469,961	13,559,326	14,112,645
New Jersey	10,855,092	19,126,851	11,693,773	4,368,475
New York	2,728,242	5,375,780	3,857,323	740,724
Pennsylvania	11,247,377	18,492,858	11,662,226	5,812,516
Rhode Island	8,096,724	18,069,251	18,276,957	9,850,120
All other states	10,246,927	23,266,648	7,379,220	22,827,606
Carriage cloths	947,862	1,782,855	1,741,765	1,220,408
Flannels for underwear	1,257,271	3,856,353	8,710,131	9,345,556
Massachusetts	207,183	506,182	1,349,300	2,219,563
Pennsylvania	430,876	796,097	436,723	633,091
All other states	619,212	2,554,074	6,924,108	[1] 6,492,902
Blankets	3,454,585	5,638,434	7,414,563	5,465,277
Pennsylvania	1,153,048	1,424,062	1,395,707	1,463,544
All other states	2,301,537	4,214,372	6,018,856	4,001,733
Union or cotton-mixed woven goods	**14,327,973**	**37,453,351**	**63,197,407**	**57,334,570**
Connecticut	1,105,667	2,168,484	4,178,500	3,376,062
Maine	1,919,118	3,996,585	6,224,365	4,686,466
Massachusetts	3,332,690	10,236,836	13,401,999	13,706,236
Pennsylvania	2,070,669	5,104,428	14,026,477	17,389,245
Rhode Island	1,044,706	1,996,140	4,030,440	1,800,201
All other states	4,855,123	13,950,878	21,335,626	16,376,360
Unions, tweeds, cheviots, cassimeres, etc	7,780,854	18,917,478	35,103,110	30,767,915
Connecticut	366,593	860,666	2,821,517	2,001,035
Maine	1,288,515	2,682,295	3,816,292	2,664,583
Massachusetts	1,631,006	4,837,123	7,130,838	3,849,310
Pennsylvania	1,255,914	3,344,826	8,058,592	12,049,057
Rhode Island	984,481	1,831,640	3,708,784	1,244,332
All other states	2,254,345	5,360,928	9,567,087	8,959,598
Overcoatings and cloakings	2,363,381	4,281,739	5,373,053	6,087,366
Massachusetts	678,910	1,241,172	1,369,028	1,430,836
All other states	1,684,471	3,040,567	4,004,025	4,647,530
Cotton-warp woven goods	**62,323,086**	**210,452,401**	**182,135,011**	**152,931,012**
Connecticut	1,255,204	4,307,416	5,904,201	5,657,479
Maine	4,832,482	14,591,748	12,175,805	6,615,014
Massachusetts	24,858,337	104,303,227	87,766,935	55,244,610
Pennsylvania	10,570,357	30,735,963	19,452,881	31,460,590
Rhode Island	9,609,533	20,782,229	12,059,420	17,669,848
All other states	11,197,083	35,641,818	44,775,769	36,283,471
Cotton-warp woven goods—Continued.				
Wool-filling cassimeres, doeskins, jeans, tweeds, coatings, etc	12,107,320	45,244,866	34,602,165	37,160,449
Connecticut	544,425	2,108,671	1,766,051	1,927,154
Massachusetts	4,229,797	18,793,980	11,095,728	7,416,602
Pennsylvania	3,562,508	10,080,033	4,813,757	8,162,477
All other states	3,770,570	14,262,182	17,016,629	19,654,216
Worsted-filling cassimeres, doeskins, jeans, tweeds, coatings, etc	15,009,081	29,220,252	16,688,620	12,663,719
Massachusetts	3,132,929	6,936,133	2,880,672	2,574,582
Pennsylvania	3,996,018	8,347,362	3,859,898	631,131
Rhode Island	5,030,340	8,453,778	6,772,247	6,738,436
All other states	2,849,794	5,482,979	3,175,803	2,719,570
Wool-filling overcoatings and cloakings	771,879	2,075,502	8,198,406	3,917,498
Massachusetts	448,995	1,550,017	3,870,781	1,055,861
All other states	322,884	525,485	4,327,625	2,861,637
Worsted-filling dress goods, cashmeres, serges, mohairs, etc	14,798,965	65,112,981	49,300,369	45,784,011
Massachusetts	10,140,751	51,588,003	34,683,359	21,794,250
New York	1,056,731	3,376,396	1,518,326	4,914,479
Rhode Island	2,275,346	7,187,938	2,995,144	8,835,833
All other states	1,326,137	2,960,644	10,103,540	10,239,449
		Dozens.	*Dozens.*	*Dozens.*
Wool-felt hats	**3,646,787**	**590,957**	**446,121**	**823,425**
Massachusetts	941,502	148,457	(2)	247,163
New York	1,185,298	133,678	136,481	284,494
Pennsylvania	1,431,342	303,398	158,585	279,768
All other states	88,645	5,424	151,055	12,000
		Pounds.	*Pounds.*	*Pounds.*
Yarns for sale	**94,541,753**	**134,051,361**	**113,314,731**	**[3] 96,252,866**
Connecticut	675,155	751,185	413,581	801,629
Maine	1,211,143	1,477,360	639,615	656,237
Massachusetts	22,770,827	26,970,327	16,779,465	11,510,222
New Jersey	11,594,086	11,242,062	5,994,987	4,744,938
New York	1,187,300	1,241,041	2,206,680	1,822,410
Pennsylvania	34,372,739	67,310,683	66,082,601	60,641,607
Rhode Island	19,259,262	19,530,045	15,724,189	11,229,866
All other states	3,471,241	5,528,658	5,473,613	4,845,957
Woolen	7,505,412	28,520,493	42,901,823	32,738,851
Maine	12,181	16,779	95,531	30,100
Massachusetts	383,327	929,184	1,333,033	1,110,332
New Jersey	26,910	55,772	(2)	79,255
New York	2,779	3,949	(2)	491,900
Pennsylvania	5,965,431	25,211,815	37,044,638	20,161,975
Rhode Island	368,165	661,234	1,339,608	579,528
All other states	746,619	1,641,760	3,089,013	[1] 1,285,761
Worsted	80,395,543	88,323,953	55,475,235	[3] 43,003,343
Maine	1,156,075	1,353,845	366,715	358,500
Massachusetts	20,858,951	24,106,586	13,834,224	8,878,568
New Jersey	11,517,331	11,100,625	5,676,075	4,665,683
New York	1,184,521	1,237,092	1,051,528	980,510
Pennsylvania	23,978,942	28,656,142	23,371,803	16,313,647
Rhode Island	18,634,773	18,264,920	9,155,469	8,789,306
All other states	3,064,950	3,604,743	2,019,421	2,517,129
Woolen, union or merino	2,143,416	10,249,625	8,824,064	[4] 15,974,567
Massachusetts	265,288	579,958	(2)	1,075,706
Pennsylvania	1,488,774	8,725,079	5,013,928	12,294,674
Rhode Island	225,317	534,654	2,341,087	1,187,639
All other states	164,037	409,934	1,469,049	1,416,548
Worsted, union or merino	3,522,812	3,761,737	3,314,549	(5)
Massachusetts	778,405	703,303	483,127	.....
Pennsylvania	2,692,200	2,985,877	(2)	.....
All other states	52,207	72,557	2,831,422	.....
Noils	**8,938,589**	**27,479,293**	**15,379,600**	**12,176,843**
Massachusetts	3,576,221	10,894,622	4,835,934	4,880,617
New Jersey	588,740	1,628,352	878,838	708,793
New York	531,897	1,793,580	858,972	526,925
Pennsylvania	1,895,601	6,006,239	3,888,629	2,984,381
Rhode Island	1,819,094	5,199,661	3,319,117	2,099,777
All other states	527,036	1,956,839	1,598,110	976,350
Waste	**3,539,812**	**24,327,757**	**18,377,326**	**8,181,554**
Massachusetts	711,529	6,476,439	4,802,626	1,576,293
New Jersey	528,524	2,102,373	1,136,229	702,392
New York	145,921	838,887	852,243	281,804
Pennsylvania	590,466	5,236,102	4,759,554	725,532
Rhode Island	1,316,779	7,106,426	5,837,000	3,292,631
All other states	246,593	2,567,530	989,674	[1] 1,602,902

[1] Includes total production of felt goods establishments.
[2] Figures not shown to avoid disclosure of individual operations.
[3] Includes tops.
[4] Includes worsted merino.
[5] Included with woolen, union, or merino.

Of the total number of square yards of all-wool woven goods, Massachusetts produced 33.8 per cent in 1909, Rhode Island 16.6 per cent, and Pennsylvania 10.2 per cent, these proportions differing but little from those in 1899. In the total production of union or cotton-mixed goods also Massachusetts ranked first in 1909, while Pennsylvania ranked second and Maine third. Of the total quantity of cotton-warp goods, Massachusetts reported 49.6 per cent in 1909, as compared with 36.1 per cent in 1899, Pennsylvania and Rhode Island ranking second and third, respectively, at both censuses.

Pennsylvania reported 51.3 per cent of the total production of wool-felt hats in 1909, and ranked first also in the quantity of yarns made for sale, with 50.2 per cent of the total for the United States.

EQUIPMENT.

Summary for the United States.—Table 38 shows the number of sets of woolen cards and the number of combing machines, spindles, and looms used in the woolen industry, as reported at the censuses of 1909, 1904, and 1899.

Table 38	EQUIPMENT USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).					
	Number.			Per cent of increase.[1]		
	1909	1904	1899	1899-1909	1904-1909	1899-1904
Woolen cards (sets)[2]	5,099	5,753	6,137	−16.9	−11.4	−6.3
Combing machines	1,978	1,440	1,317	50.2	37.4	9.3
Spindles	4,317,993	3,765,751	3,301,803	30.8	14.7	14.0
Looms[3]	72,940	64,132	61,537	18.5	13.7	4.2

[1] A minus sign (−) denotes decrease. [2] Includes shoddy cards.
[3] Exclusive of carpet looms.

The number of sets of woolen cards decreased steadily between 1899 and 1909, this decrease resulting in part from the relative decline in the carded-woolen branch of the industry. The growth of the worsted branch is indicated by the increase of 50.2 per cent during the decade in the number of combing machines. The increase in the number of spindles between 1899 and 1909 was 30.8 per cent, and in the number of looms 18.5 per cent.

Sets of cards.—Table 39 gives for the United States, and for each of the leading states, the number of sets of woolen cards used in 1909 and 1904.

With the woolen cards, as given in the table, are included the shoddy cards which were in operation in the various mills manufacturing woolen, worsted, and felt goods, and wool hats. The decrease in the number of sets of woolen cards, including such shoddy cards, was 654, or 11.4 per cent. It must be remembered, however, that the card is not in any case an absolutely accurate standard, because of variations in the width of the cards, the diameter of the cylinders, and the speed at which they are operated.

Table 39 STATE AND YEAR.	Sets of woolen cards used in the woolen industry (exclusive of carpets and rugs).[1]	STATE AND YEAR.	Sets of woolen cards used in the woolen industry (exclusive of carpets and rugs).[1]
United States:		New York:	
1909	5,099	1909	
1904	5,753	1904	364
Connecticut:		Pennsylvania:	452
1909	408	1909	
1904	442	1904	840
Maine:		Rhode Island:	856
1909	441	1909	
1904	456	1904	305
Massachusetts:		Wisconsin:	360
1909	1,403	1909	
1904	1,587	1904	84
New Hampshire:		All other states:	78
1909	357	1909	
1904	393	1904	766
New Jersey:			950
1909	131		
1904	139		

[1] Includes shoddy cards.

Table 40 shows the number of sets of cards reported in 1909, 1904, and 1899, classified according to width.

Table 40 CLASS.	SETS OF WOOLEN CARDS USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).[1]		
	1909	1904	1899
Total number	5,099	5,753	[2] 6,498
Classified according to width:			
24 inches	92	85	290
30 inches	28	53	126
36 inches	26	32	56
40 inches	702	1,118	1,176
42 inches	9	12	23
44 inches	108	140	133
46 inches	.....	16	67
48 inches	2,624	2,896	3,372
54 inches	8	9	22
60 inches	1,320	1,287	1,136
72 inches	53	51	29
All other (including unspecified)	129	144	68

[1] Includes shoddy cards.
[2] Does not include sets of cards for which the width was not reported, but includes cards used in the carpet and rug industry.

The decrease which has already been spoken of took place principally among the narrower cards, those 60 and 72 inches in width showing an increase. The decrease in capacity, therefore, was not as great as would be inferred from the decrease in the number of sets of cards.

Table 41 shows, by states, for 1909, the distribution of woolen cards according to width.

The 40, 48, and 60 inch cards are the most important, representing over 90 per cent of the total number of sets. Of these, the 48-inch cards are by far the most generally used, forming 51.4 per cent of the entire number in 1909. Pennsylvania is the only state of importance in the industry in which more 60-inch cards were used than 48-inch.

Table 41

STATE.	SETS OF WOOLEN CARDS USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS): 1909											
	Total.	24-inch.	30-inch.	36-inch.	40-inch.	42-inch.	44-inch.	48-inch.	54-inch.	60-inch.	72-inch.	All other widths.
United States	5,099	92	28	26	702	9	108	2,624	8	1,320	53	129
Connecticut	408	....	....	....	76	....	14	260	....	41	14	3
Maine	441	7	3	3	66	....	14	285	2	54	....	7
Massachusetts	1,403	28	....	12	270	4	65	706	....	259	27	32
New Hampshire	357	2	....	....	146	....	....	197	....	7	....	5
New Jersey	131	....	....	....	....	....	....	78	....	50	1	2
New York	364	....	1	2	34	1	2	213	....	56	10	45
Pennsylvania	840	39	2	1	7	....	2	274	....	503	....	12
Rhode Island	305	....	....	....	4	....	....	234	6	61	....	....
Wisconsin	84	3	1	4	18	....	....	44	....	7	....	7
All other states	766	13	21	4	81	4	11	333	....	282	1	16

Combing machines.—Table 42 shows the distribution of the wool-combing machines by states for 1909, 1904, and 1899.

Table 42

STATE.	COMBING MACHINES USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).					
	Number.			Per cent distribution.		
	1909	1904	1899	1909	1904	1899
United States	1,978	1,440	1,317	100.0	100.0	100.0
Connecticut	33	18	40	1.7	1.2	3.0
Maine	29	26	19	1.5	1.8	1.4
Massachusetts	657	450	377	33.0	31.2	28.6
New Hampshire	52	24	34	2.6	1.7	2.6
New Jersey	265	166	125	13.3	11.5	9.5
New York	89	62	66	4.5	4.3	5.0
Pennsylvania	342	349	340	17.2	24.2	25.8
Rhode Island	461	291	287	23.2	20.2	21.8
Wisconsin	13	8	(1)	0.7	0.6	.....
All other states	37	46	29	2.4	3.2	2.2

[1] Included under "all other states."

Massachusetts at all three censuses reported more combing machines than any other state, and shows the greatest absolute increase during the decade 1899–1909, reporting 657 machines in 1909 as compared with 377 in 1899. Pennsylvania ranked second in 1904 and 1899 in the number of combing machines reported, but was outranked by Rhode Island in 1909, the latter state reporting 23.2 per cent of the total in that year as compared with 21.8 per cent in 1899. New Jersey reported 13.3 per cent of the combing machines used in the industry in 1909, as compared with 9.5 per cent in 1899, and shows the greatest relative increase for the decade, 112 per cent.

Table 43 shows the number of combing machines of domestic manufacture and of foreign manufacture, respectively, for the two branches of the industry in which these machines are used.

The proportion of combing machines of American manufacture has decreased somewhat since 1899, such machines forming 22.1 per cent of the total in that year and only 20.3 per cent in 1909.

Table 43

CLASS.	COMBING MACHINES USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).		
	1909	1904	1899
Total	1,978	1,440	1,317
Of domestic manufacture	402	340	291
Per cent of total	20.3	23.6	22.1
Of foreign manufacture	1,576	1,100	1,026
Per cent of total	79.7	76.4	77.9
In worsted mills	1,925	1,312	1,194
Of domestic manufacture	370	259	214
Of foreign manufacture	1,555	1,053	980
In woolen mills	53	128	123
Of domestic manufacture	32	81	77
Of foreign manufacture	21	47	46

Spindles.—Table 44 gives the number of spindles used in the woolen industry as reported for 1909, 1904, and 1899, with separate figures for producing spindles (mule and frame) and doubling and twisting spindles employed, respectively, upon woolen, worsted, and cotton yarns.

As a standard of capacity the spindle is not altogether satisfactory, as the output of a spindle varies with the kind and size of yarn spun. The number of spindles, however, serves as a rough measure of the growth of the industry.

The total number of spindles of all kinds was 3,301,893 in 1899 and 4,317,993 in 1909, an increase of 1,016,100, or 30.8 per cent. The percentage of increase in producing spindles was somewhat lower. The increase was practically all in worsted spindles, as there was a decline during the decade in the number of woolen and cotton producing spindles, and but a small increase in the number of woolen and cotton doubling and twisting spindles.

The number of mule spindles declined between the censuses of 1904 and 1909, 7.7, per cent, but the number of frame spindles increased 62.1 per cent and was more than half as great as that of mule spindlesin 1909.

The number of doubling and twisting spindles increased from 405,130 in 1899 to 735,336 in 1909, or 81.5 per cent. Since a large number of doubling and twisting spindles implies a greater use of 2-ply yarns and a higher grade of manufacture, the ratio of doubling and twisting spindles to producing spindles is of interest. For woolen spindles the ratio was 1 to 16.8 in 1909, as compared with 1 to 19.1 in 1904 and 1 to 20.3 in 1899. In the case of worsted spindles the ratio was 1 to 2.7 in 1909 and 1904, and 1 to 2.9 in 1899.

Table 44

CLASS.	SPINDLES USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).										
	United States.	Connecticut.	Maine.	Massachusetts.	New Hampshire.	New Jersey.	New York.	Pennsylvania.	Rhode Island.	Wisconsin.	All other states.
All classes:											
1909	4,317,993	198,042	235,960	1,362,856	193,704	277,458	189,783	784,347	632,537	36,991	406,315
1904	3,765,751	182,260	210,992	1,063,025	234,974	216,598	213,292	709,093	489,340	37,398	408,779
1899	3,301,893	196,722	[1] 178,215	902,510	[2] 125,532	172,996	184,027	598,731	527,099	25,904	390,157
Producing spindles:											
1909	3,582,657	179,688	214,584	1,121,303	177,860	230,714	154,359	642,430	459,127	32,734	369,858
1904	3,245,880	166,422	189,684	917,873	222,054	181,293	177,487	590,916	379,374	32,558	388,219
1899	2,896,763	176,892	162,921	799,898	119,204	147,084	152,369	521,726	419,844	23,672	373,153
Woolen—											
1909	1,814,668	166,768	161,568	490,252	115,600	51,218	73,629	302,000	124,729	25,974	302,930
1904	2,078,721	159,666	169,560	541,930	178,630	70,276	100,401	329,276	151,860	28,438	348,684
1899	1,871,691	[3] 152,678	[3] 145,853	476,620	113,604	64,158	97,451	323,700	[3] 144,078	[3] 22,760	330,789
Worsted—											
1909	1,655,400	12,920	48,020	544,334	61,024	179,496	80,410	337,630	333,246	6,760	49,760
1904	1,077,561	6,756	17,060	320,941	43,424	111,017	76,766	255,840	227,514	4,120	14,123
1899	883,644	14,214	13,484	271,946	[4] 5,600	82,926	54,918	184,566	224,646	[4] 912	30,452
Cotton—											
1909	112,589	.....	4,096	86,717	336	.....	320	2,800	1,152	.....	17,168
1904	89,598	.....	3,064	55,002	.....	.....	320	5,800	.....	.....	25,412
1899	141,428	10,000	3,584	51,332	.....	.....	.....	13,460	51,120	.....	11,932
Mule spindles:											
1909	2,218,152	172,768	161,304	549,052	125,576	152,318	93,144	416,330	218,224	26,854	302,582
1904	2,404,240	159,366	160,908	612,624	180,010	125,076	124,661	440,122	215,920	28,058	357,495
Woolen—											
1909	1,791,303	166,768	161,304	477,508	115,600	51,218	65,889	300,796	124,104	25,534	302,582
1904	2,050,058	159,366	159,408	536,778	176,370	64,276	100,401	327,846	151,860	28,058	345,595
Worsted—											
1909	423,393	6,000	.....	71,544	9,640	101,100	26,935	112,734	94,120	1,320	.....
1904	313,862	.....	1,500	53,146	3,640	60,800	23,940	106,476	64,060	.....	300
Cotton—											
1909	3,456	.....	.....	.....	336	.....	320	2,800	.....	.....	.....
1904	40,320	.....	.....	22,700	.....	.....	320	5,800	.....	.....	11,500
Frame spindles:											
1909	1,364,505	6,920	53,280	572,251	52,284	78,396	61,215	226,100	240,903	5,880	67,276
1904	841,640	7,056	28,776	305,249	42,044	56,217	52,826	150,794	163,454	4,500	30,724
Woolen—											
1909	23,365	.....	264	12,744	.....	.....	7,740	1,264	625	440	348
1904	28,063	300	10,152	5,152	2,260	6,000	.....	1,430	.....	380	2,989
Worsted—											
1909	1,232,007	6,920	48,020	472,790	52,284	78,396	53,475	224,896	239,126	5,440	49,760
1904	763,699	6,756	15,560	267,795	39,784	56,217	52,826	149,364	163,454	4,120	13,823
Cotton—											
1909	109,133	.....	4,096	86,717	.....	.....	.....	.....	1,152	.....	17,168
1904	49,278	.....	3,064	32,302	.....	.....	.....	.....	.....	.....	13,912
Doubling and twisting spindles:											
1909	735,336	18,354	21,376	241,553	15,844	46,744	35,424	141,917	173,410	4,257	36,457
1904	519,871	15,838	21,308	145,152	12,020	35,305	35,805	118,177	109,966	4,840	20,560
1899	405,130	19,830	15,294	102,612	6,328	25,912	31,658	77,005	107,255	2,232	17,004
Woolen—											
1909	107,894	13,550	6,684	23,053	2,836	.....	5,567	24,056	15,040	2,041	14,467
1904	108,838	12,278	16,530	18,986	4,400	2,420	7,377	16,301	13,874	2,374	14,298
1899	92,304	[3] 9,290	[3] 7,206	18,502	3,320	1,056	8,534	14,313	[3] 15,121	[3] 1,878	13,084
Worsted—											
1909	616,800	4,804	14,692	212,580	13,008	46,744	29,857	116,439	156,870	2,216	19,590
1904	402,310	3,560	4,778	119,023	8,520	32,885	28,428	100,496	96,092	2,466	5,162
1899	307,762	10,540	8,088	84,062	[4] 3,008	24,856	23,124	61,832	87,978	[4] 354	3,920
Cotton—											
1909	10,642	.....	.....	5,020	.....	.....	.....	822	1,500	.....	2,400
1904	8,723	.....	.....	6,243	.....	.....	.....	1,380	.....	.....	1,100
1899	5,064	.....	.....	48	.....	.....	.....	860	4,156	.....	.....

[1] In addition, there were 3,406 spindles, not classified, included under "all other states."
[2] In addition, there were 20,760 spindles, not classified, included under "all other states."
[3] A few spindles in felt mills for which separate figures are not available are included in the figures for "all other states."
[4] Worsted spindles in worsted mills for which separate figures are not available are included in the figures for "all other states."

Looms.—Table 45 gives for the United States and for the leading states the total number of looms in operation in the industry in 1909, 1904, and 1899, with separate figures for broad and narrow looms and hand looms.

Table 45

STATE.	LOOMS USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).			
	Total.	Broad.[1]	Narrow.[2]	Hand.
United States:				
1909	72,940	53,893	19,006	41
1904	64,132	46,088	17,978	66
1899	61,537	38,260	23,243	34
Connecticut—				
1909	3,409	3,145	264	.....
1904	3,201	2,581	619	1
1899	3,108	2,595	512	1
Maine—				
1909	4,024	2,967	1,057	.....
1904	3,689	2,993	696	.....
1899	[3] 2,646	2,516	130	.....
Massachusetts—				
1909	25,185	16,572	8,612	1
1904	20,588	13,734	6,853	1
1899	18,523	10,818	7,705	.....
New Hampshire—				
1909	4,230	3,743	487	.....
1904	4,397	3,198	1,199	.....
1899	[4] 2,071	1,738	333	.....
New Jersey—				
1909	4,991	4,887	102	2
1904	3,799	3,519	280	.....
1899	2,639	2,205	434	.....
New York—				
1909	3,035	2,534	475	26
1904	2,899	2,334	514	51
1899	3,033	2,300	718	15
Pennsylvania—				
1909	11,420	7,624	3,786	10
1904	9,848	6,474	3,363	11
1899	10,681	5,116	5,555	10
Rhode Island—				
1909	9,252	7,210	2,042	.....
1904	8,103	6,455	1,648	.....
1899	8,007	5,811	2,195	1
Wisconsin—				
1909	327	309	18	.....
1904	297	277	20	.....
1899	272	236	36	.....
All other states—				
1909	7,067	4,902	2,163	2
1904	7,311	4,523	2,786	2
1899	10,557	4,925	5,625	7

[1] Fifty inches reed space or over.
[2] Under 50 inches reed space.
[3] In addition, there were 156 looms, not classified, included in "all other states."
[4] In addition, there were 3,241 looms, not classified, included in "all other states."

The total number of looms in the industry increased from 61,537 in 1899 to 72,940 in 1909, or 18.5 per cent. The broad looms (that is, those with 50 inches or more of reed space) increased in number 15,633, or 40.9 per cent, while in the number of narrow looms there was a decrease of 4,237, or 18.2 per cent. Of the states listed in the table, New Jersey shows the highest rate of increase in the total number of looms (89.1 per cent).

Table 46 gives for 1909, 1904, and 1899 the number of looms employed on woolen goods and on worsted goods, respectively, classified as broad looms, narrow looms, and hand looms.

Table 46

CLASS.	LOOMS USED IN THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).		
	1909	1904	1899
Total	**72,590**	**64,132**	**61,537**
Broad looms: [1]			
On woolen goods	24,956	26,493	21,567
On worsted goods	28,796	19,595	16,693
Narrow looms: [2]			
On woolen goods	8,117	10,107	13,618
On worsted goods	10,680	7,871	9,625
Hand looms	41	66	34

[1] Fifty inches reed space or over. [2] Under 50 inches reed space.

The number of narrow looms employed in weaving woolen goods decreased between 1899 and 1909, while the number employed in weaving worsted goods increased. The number of broad looms on both woolen and worsted goods shows an increase for the decade, the greatest gain being in the number of broad looms used in weaving worsted goods.

Table 47 gives, by states, the number of pickers and garnet machines used in the industry in 1909 and 1904.

Table 47

STATE.	Census.	THE WOOLEN INDUSTRY (EXCLUSIVE OF CARPETS AND RUGS).	
		Number of pickers.	Number of garnet machines.
United States	**1909**	**1,425**	**224**
	1904	**1,733**	**227**
Connecticut	1909	100	18
	1904	124	16
Maine	1909	105	18
	1904	135	17
Massachusetts	1909	370	45
	1904	404	34
New Hampshire	1909	98	12
	1904	127	17
New Jersey	1909	59	1
	1904	71	3
New York	1909	73	20
	1904	92	18
Pennsylvania	1909	242	44
	1904	293	53
Rhode Island	1909	72	15
	1904	94	24
Wisconsin	1909	35	8
	1904	32	6
All other states	1909	271	43
	1904	361	39

DETAILED STATE TABLES.

The principal statistics secured by the census inquiry concerning the four branches of the woolen industry are presented, by states, in Tables 48 and 49.

Table 48 shows for 1909, 1904, and 1899 the number of establishments, number of persons engaged in the industry, primary horsepower, capital invested, salaries, wages, cost of materials, value of products, and value added by manufacture.

Table 49 gives more detailed statistics for the industry for 1909 only.

WOOLEN, WORSTED, AND FELT GOODS, AND WOOL HATS—COMPARATIVE STATISTICS, BY STATES: 1909, 1904, AND 1899.

Table 48

STATE.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY. Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).	Primary horsepower.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture (value of products less cost of materials).
								Expressed in thousands.					
United States	1909	985	175,176	732	5,722	168,722	362,209	$430,579	$10,097	$72,427	$282,878	$435,979	$153,101
	1904	1,074	152,306	958	4,593	146,755	288,969	314,081	6,781	57,073	204,613	319,348	114,735
	1899	1,281	.....	.....	3,808	130,697	244,825	265,730	5,574	46,812	153,930	248,798	94,868
California	1909	5	324	2	50	272	495	1,564	66	130	319	585	266
	1904	[1] 7	456	1	25	430	1,025	961	33	159	467	754	287
	1899	5	449	1	18	430	560	1,050	25	160	409	687	278
Connecticut	1909	56	8,140	31	320	7,789	17,518	20,011	564	3,485	12,838	19,363	6,525
	1904	[1] 59	7,748	39	280	7,429	14,949	15,031	416	2,998	10,073	15,483	5,410
	1899	[2] 61	7,113	47	200	6,866	15,454	14,195	313	2,608	7,923	12,637	4,714
Georgia	1909	7	692	4	28	660	1,437	1,415	36	175	443	871	428
	1904	8	668	4	17	647	1,181	815	22	129	424	656	232
	1899	14	575	1	13	561	715	455	17	97	280	491	211
Illinois	1909	9	543	6	38	499	1,342	1,063	75	237	773	1,314	541
	1904	[1] 9	491	8	37	446	1,150	1,030	53	162	495	783	288
	1899	[1] 13	747	4	50	693	1,229	1,572	69	210	492	933	441
Indiana	1909	11	825	12	37	776	1,678	1,555	71	293	1,056	1,570	514
	1904	[1] 13	1,038	10	35	993	1,945	1,645	49	306	997	1,597	600
	1899	[1] 20	1,118	12	58	1,048	1,945	1,849	68	307	877	1,491	614
Iowa	1909	8	148	5	9	134	922	519	11	54	228	350	122
	1904	10	268	5	17	246	1,101	713	16	89	365	573	208
	1899	12	293	11	26	256	485	494	17	65	175	297	122
Kentucky	1909	14	858	8	32	818	2,506	1,646	56	241	858	1,278	420
	1904	21	990	26	47	917	2,016	1,036	69	261	775	1,273	498
	1899	[1] 36	656	18	20	618	1,232	1,589	29	145	406	747	341
Maine	1909	65	9,070	22	294	8,754	22,299	19,834	424	3,870	11,362	18,490	7,128
	1904	[2] 72	9,062	36	283	8,743	18,226	17,552	391	3,514	10,811	17,580	6,769
	1899	[2] 79	7,409	37	217	7,155	15,170	14,129	269	2,689	7,945	13,413	5,468
Massachusetts	1909	183	55,533	103	1,557	53,873	117,110	133,055	2,964	24,593	87,976	141,067	53,991
	1904	[2] 190	45,264	141	1,073	44,050	88,896	104,257	1,750	18,137	62,778	99,314	36,536
	1899	187	.....	.....	977	37,589	76,270	80,728	1,583	14,338	45,130	74,075	28,945
Michigan	1909	15	610	18	38	554	1,900	1,421	53	235	863	1,571	708
	1904	[1] 15	529	20	27	482	1,186	767	24	170	595	977	382
	1899	[1] 16	376	16	23	337	1,076	776	18	108	407	627	220
Minnesota	1909	16	306	13	16	277	642	957	26	123	429	699	270
	1904	16	386	15	28	343	941	634	34	129	463	791	328
	1899	19	326	6	20	300	941	763	23	91	272	497	225
New Hampshire	1909	39	9,701	21	194	9,486	30,485	15,103	289	3,649	11,095	16,731	5,636
	1904	44	6,820	32	207	6,581	18,437	14,411	257	2,755	9,479	14,284	4,805
	1899	[2] 43	4,208	37	129	4,042	10,106	8,161	153	1,572	4,741	7,624	2,883
New Jersey	1909	33	13,119	28	439	12,652	20,254	36,301	885	4,964	21,033	33,939	12,906
	1904	35	9,301	38	280	8,983	14,008	18,979	465	2,051	10,628	16,394	5,766
	1899	[2] 28	7,235	14	163	7,058	11,326	17,437	303	2,194	7,626	12,270	4,644
New York	1909	64	9,907	66	381	9,460	22,374	25,208	819	4,145	14,744	23,739	8,995
	1904	67	9,435	74	419	8,942	21,738	20,516	668	3,520	10,715	19,477	8,762
	1899	88	9,923	91	408	9,424	19,180	19,228	615	3,302	8,684	15,784	7,100
North Carolina	1909	11	461	12	25	424	968	1,159	37	116	392	675	283
	1904	12	381	15	23	343	849	419	21	71	406	556	150
	1899	16	234	11	17	206	608	348	9	39	205	290	85
Ohio	1909	20	2,711	23	122	2,566	6,504	7,159	207	925	4,616	7,690	3,074
	1904	27	1,886	38	75	1,773	3,178	3,685	92	563	2,137	3,587	1,450
	1899	38	.....	.....	84	1,234	1,783	2,710	95	384	1,681	2,826	1,145
Oregon	1909	8	508	2	37	469	1,628	1,265	42	202	527	929	402
	1904	7	594	3	25	566	955	1,272	43	220	496	1,034	538
	1899	11	704	3	29	672	1,113	1,176	33	209	466	898	432
Pennsylvania	1909	217	28,692	245	1,038	27,409	50,405	75,170	1,746	10,947	54,634	77,447	22,813
	1904	232	25,367	291	825	24,251	39,682	45,193	1,151	8,791	37,247	55,934	18,687
	1899	260	25,496	301	564	24,631	36,013	39,739	692	8,715	31,364	48,765	17,401
Rhode Island	1909	88	25,673	26	723	24,924	43,715	68,867	1,322	11,538	51,025	74,600	23,575
	1904	82	22,090	44	436	21,610	35,981	45,660	654	9,102	35,936	52,641	16,705
	1899	[1] 77	18,069	62	401	17,606	28,420	41,018	737	6,641	24,878	38,672	13,794
Tennessee	1909	21	1,737	21	62	1,654	2,371	2,515	73	410	1,127	1,802	675
	1904	27	1,481	22	44	1,415	2,590	2,310	54	327	945	1,706	761
	1899	51	1,725	29	64	1,632	2,692	2,400	68	294	874	1,517	643
Vermont	1909	17	2,371	4	73	2,294	7,213	6,906	88	1,043	2,879	4,497	1,618
	1904	17	2,350	17	98	2,235	7,120	5,669	153	923	2,794	4,698	1,904
	1899	[1] 23	1,556	21	51	1,484	4,509	3,001	71	577	1,555	2,573	1,018
Virginia	1909	16	590	18	30	542	1,352	1,101	33	176	567	999	432
	1904	24	701	23	29	649	1,656	1,046	29	179	760	1,250	490
	1899	28	416	15	39	362	937	784	38	104	392	628	236
West Virginia	1909	13	640	10	31	599	1,327	1,106	31	222	795	1,224	429
	1904	[2] 12	324	13	21	290	726	426	24	106	218	469	251
	1899	[1] 33	412	12	16	384	1,118	684	17	99	319	507	188
Wisconsin	1909	33	1,178	23	109	1,046	3,059	2,574	127	381	1,376	2,230	854
	1904	[1] 29	1,228	27	64	1,137	2,476	2,346	84	381	1,400	2,298	898
	1899	35	.....	.....	65	1,063	2,076	2,396	87	316	1,163	1,856	693
All other states	1909	16	839	9	39	791	2,696	2,115	52	264	923	1,419	496
	1904	39	3,448	16	178	3,254	6,957	6,977	220	1,130	3,209	5,239	2,030
	1899	88	.....	.....	156	5,046	9,858	9,048	225	1,548	5,666	8,693	3,027

[1] Excluding statistics for one establishment, to avoid disclosure of individual operations.
[2] Excluding statistics for two establishments, to avoid disclosure of individual operations.

WOOLEN, WORSTED, AND FELT GOODS, AND WOOL HATS—DETAILED STATISTICS, BY STATES: 1909.

Table 49

STATE.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY. Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks. Male.	Clerks. Female.	Wage earners. Average number.	Number, 15th day of— Maximum month.	Number, 15th day of— Minimum month.	WAGE EARNERS—DEC. 15, OR NEAREST REPRESENTATIVE DAY. Total.	16 and over. Male.	16 and over. Female.	Under 16. Male.	Under 16. Female.	Primary horsepower.
United States	**985**	**175,176**	**722**	**2,460**	**2,470**	**792**	**168,722**	No 173,943	Ja 158,318	**175,171**	**92,820**	**72,409**	**4,459**	**5,483**	**362,209**
California	5	324	2	9	34	7	272	Jy 357	Se 238	356	262	88	2	4	495
Connecticut	56	8,140	31	196	96	28	7,789	De 8,071	Ja 7,110	8,179	5,434	2,361	178	206	17,518
Georgia	7	692	4	17	7	4	660	Oc 699	My 639	672	347	257	44	24	1,437
Illinois	9	543	6	22	13	3	499	No 518	Ap 482	513	353	154	4	2	1,342
Indiana	11	825	12	23	12	2	776	Jy 830	Ja 727	810	344	431	12	23	1,678
Iowa	8	148	5	3	4	2	134	No 159	Mh 109	156	96	59	.....	1	922
Kentucky	14	858	8	23	5	4	818	No 873	Ja 680	873	308	501	46	18	2,506
Maine	65	9,070	22	160	94	40	8,754	De 9,373	Ja 8,021	9,397	5,868	3,332	86	111	22,299
Massachusetts	183	55,533	103	634	598	325	53,873	Oc 55,879	Ja 49,715	56,182	31,553	21,368	1,420	1,841	117,119
Michigan	15	610	18	26	9	3	554	De 606	Jy 515	607	344	261	.....	2	1,900
Minnesota	16	306	13	8	7	1	277	Oc 306	Ja 224	293	156	135	2	.....	642
New Hampshire	39	9,701	21	102	59	33	9,486	Au 9,694	Fe 9,237	9,752	5,488	4,112	73	79	30,485
New Jersey	33	13,119	28	96	324	19	12,652	De 13,712	Ja 11,816	13,716	6,110	6,984	326	296	20,254
New York	64	9,907	66	154	185	42	9,460	Je 9,950	Ja 8,771	9,596	5,333	4,068	85	110	22,374
North Carolina	11	461	12	17	7	1	424	Au 461	Ap 392	481	253	193	13	22	968
Ohio	20	2,711	23	41	65	16	2,566	Au 2,724	Ja 2,358	2,688	857	1,594	42	195	6,504
Oregon	2	508	2	12	22	3	469	De 573	My 420	573	339	214	16	4	1,628
Pennsylvania	217	28,692	245	422	475	141	27,409	No 28,383	Ja 25,796	28,226	12,494	13,053	1,187	1,492	50,405
Rhode Island	88	25,073	26	330	311	82	24,924	Se 25,604	Ja 24,072	24,739	12,879	10,317	726	817	43,715
Tennessee	21	1,737	21	27	30	5	1,654	Je 1,746	Ja 1,569	1,686	751	753	88	94	2,371
Vermont	17	2,371	4	30	29	14	2,294	De 2,508	Au 2,143	2,507	1,528	943	9	27	7,213
Virginia	16	590	18	22	7	1	542	Je 564	Fe 515	579	376	183	12	8	1,352
West Virginia	13	640	10	17	11	3	599	My 622	Se 552	620	370	231	15	13	1,327
Wisconsin	33	1,178	23	47	53	9	1,046	Je 1,116	Oc 975	1,116	452	597	25	42	3,059
All other states [1]	16	830	9	22	13	4	791	.....	.....	845	525	220	48	52	2,696

STATE.	Capital.	EXPENSES. Total.	Services. Officials.	Services. Clerks.	Services. Wage earners.	Materials. Fuel and rent of power.	Materials. Other.	Miscellaneous. Rent of factory.	Miscellaneous. Taxes, including internal revenue.	Miscellaneous. Contract work.	Miscellaneous. Other.	Value of products.	Value added by manufacture (value of products less cost of materials).
United States	**$430,578,574**	**$387,998,515**	**$6,706,353**	**$3,390,804**	**$72,426,619**	**$6,489,196**	**$276,388,843**	**$759,373**	**$1,672,165**	**$3,456,384**	**$16,708,778**	**$435,978,558**	**$153,100,519**
California	1,563,715	588,741	31,647	34,279	129,506	27,610	291,043	1,454	6,648	.....	66,485	585,410	266,748
Connecticut	20,011,122	17,514,379	417,619	145,959	3,485,157	329,872	12,508,270	42,873	68,644	5,782	510,803	19,363,228	6,525,086
Georgia	1,415,021	708,964	29,675	6,100	175,221	18,559	424,173	.....	3,586	5,472	46,178	870,520	427,788
Illinois	1,063,075	1,100,230	60,938	14,054	236,760	21,119	752,037	2,720	5,917	.....	96,685	1,314,100	540,944
Indiana	1,555,245	1,541,216	59,650	11,531	293,317	30,040	1,025,643	450	10,027	12,317	98,241	1,569,965	514,282
Iowa	518,751	308,495	6,020	5,031	53,869	11,406	216,462	.....	3,015	.....	12,692	349,569	121,701
Kentucky	1,645,642	1,241,089	49,165	6,816	241,467	24,433	833,815	2,250	6,028	.....	77,115	1,277,917	419,669
Maine	19,833,906	16,654,758	313,749	110,442	3,869,785	397,760	10,963,837	12,750	90,967	23,704	871,764	18,490,120	7,128,523
Massachusetts	133,955,422	123,597,299	2,147,773	815,986	24,592,763	2,360,970	85,615,361	183,864	773,838	1,524,423	5,582,321	141,966,882	53,990,551
Michigan	1,421,040	1,248,058	41,650	11,807	234,657	34,899	827,940	4,140	11,603	.....	81,362	1,571,364	708,525
Minnesota	956,714	621,754	18,900	6,760	123,368	13,424	415,304	1,500	5,532	1,200	35,766	698,576	269,848
New Hampshire	15,102,739	15,950,446	197,755	91,460	3,648,713	365,525	10,729,545	3,757	114,381	2,274	797,036	16,730,652	5,635,582
New Jersey	36,390,714	28,095,452	447,612	437,315	4,964,299	403,317	20,629,562	7,715	98,267	41,626	1,065,739	33,938,637	12,905,758
New York	25,207,821	21,379,217	468,652	349,907	4,144,918	370,969	14,378,059	31,722	79,289	170,876	1,389,825	23,739,421	8,995,393
North Carolina	1,159,005	593,465	31,110	5,700	116,331	14,431	377,538	50	6,265	.....	42,040	675,265	283,296
Ohio	7,158,812	6,767,443	115,080	91,688	924,844	61,360	4,554,669	2,785	32,612	479,818	504,587	7,690,149	3,074,120
Oregon	1,264,624	822,127	18,240	23,696	202,461	32,320	494,453	675	7,449	.....	42,833	928,654	401,881
Pennsylvania	75,170,431	71,177,842	1,091,736	654,062	10,947,225	789,043	53,845,042	255,773	99,864	802,120	2,602,977	77,446,996	22,812,911
Rhode Island	68,866,620	66,063,375	879,448	443,019	11,537,699	906,926	50,118,450	197,913	187,959	364,260	2,027,701	74,600,240	23,574,864
Tennessee	2,515,275	1,745,636	55,842	16,764	419,233	29,476	1,097,257	450	10,660	.....	115,954	1,802,311	675,578
Vermont	6,906,319	4,326,842	59,817	28,199	1,042,769	145,331	2,733,670	.....	22,013	22,075	272,968	4,496,903	1,617,902
Virginia	1,100,760	816,757	28,353	4,850	175,659	12,819	554,274	450	2,195	131	38,026	999,441	432,348
West Virginia	1,105,810	1,116,167	21,159	9,756	221,613	18,301	776,258	70	3,135	.....	65,875	1,224,247	429,688
Wisconsin	2,573,827	2,000,125	73,570	52,981	380,927	47,291	1,328,566	3,812	14,852	.....	98,126	2,229,708	853,851
All other states [1]	2,116,164	1,328,638	41,193	12,642	263,998	21,986	902,615	2,200	8,019	306	75,679	1,418,283	493,682

[1] All other states embrace: Alabama, 2 establishments; Arkansas, 2; Delaware, 2; Idaho, 1; Kansas, 2; Maryland, 2; Missouri, 2; South Carolina, 1; Texas, 1; Utah, 1.

THE CARPET AND RUG INDUSTRY.

GENERAL STATISTICS.

Scope of the industry.—This section of the report covers the operations of establishments which manufacture woven carpets and rugs from materials other than rags. The formal designation of the industry is "carpets and rugs, other than rag," the manufacture of rag carpets (as a primary product) being treated as a separate industry.

Although the most important material of the carpet and rug industry is wool, and the machinery employed is similar in general character to that used in the manufacture of other woolen products, this industry has been given a separate classification because of the importance and the distinctive characteristics of the carpet mills and their products. For purposes of comparison with previous censuses, the combined totals for the wool industry proper and the carpet and rug industry are given in the preceding section on wool manufactures.

Comparative summary for the United States.—At the census of 1849, 116 establishments were reported as engaged in the manufacture of carpets and rugs, these establishments giving employment to an average of 6,186 hands and manufacturing products valued at $5,401,234. At the census of 1859, 213 establishments were reported, giving employment to an average of 6,681 hands and manufacturing products to the value of $7,857,636. Table 50 summarizes the statistics of the industry for each census from 1869 to 1909, inclusive. The financial figures for 1869 are given in currency, which at that time was worth only about 80 cents, gold, to the dollar. For strict comparison, therefore, the financial figures for that year should be reduced about 20 per cent.

Table 50 — THE CARPET AND RUG INDUSTRY.

	Number or amount.						Per cent of increase.[1]					
	1909	1904	1899	1889	1879	1869	1899-1909	1904-1909	1899-1904	1889-1899	1879-1889	1869-1879
Number of establishments	139	130	133	173	195	215	4.5	.....	4.5	−23.1	−11.3	−9.3
Persons engaged in the industry	34,706	34,393	29,209	(2)	(2)	(2)	18.8	0.9	17.7	.....	.....	.....
Proprietors and firm members	134	149	111	(2)	(2)	(2)	20.7	−10.1	34.2	.....	.....	.....
Salaried employees	1,265	1,023	687	(2)	(2)	(2)	84.1	23.7	48.9	.....	.....	.....
Wage earners (average number)	33,307	33,221	28,411	28,736	20,371	12,098	17.2	0.3	16.9	(3)	(3)	(3)
Primary horsepower	38,553	33,945	26,740	22,084	10,491	3,719	44.2	13.6	26.9	17.9	116.2	182.1
Capital	$75,627,010	$56,781,074	$44,449,299	$38,208,842	$21,468,587	$12,540,750	70.1	33.2	27.7	16.3	78.0	71.2
Expenses	62,311,110	57,231,024	41,983,379	42,097,402	(2)	(2)	48.4	8.9	36.3	−0.3	.....	.....
Services	17,745,092	15,120,924	12,002,781	11,033,116	6,835,218	4,681,718	47.8	17.4	26.0	3.2	70.2	46.0
Salaries	2,209,042	1,396,691	881,308	(2)	(2)	(2)	150.6	58.2	58.5	.....	.....	.....
Wages	15,536,050	13,724,233	11,121,383	(2)	(2)	(2)	39.7	13.2	23.4	.....	.....	.....
Materials	39,563,004	37,947,954	27,228,719	28,044,905	18,984,877	13,577,993	45.3	4.3	39.4	−4.9	50.9	39.8
Miscellaneous	5,003,014	4,162,146	2,751,879	1,819,441	(2)	(2)	81.8	20.2	51.2	51.3	.....	.....
Value of products	71,188,152	61,586,433	48,192,351	47,770,193	31,792,802	21,761,573	47.7	15.6	27.8	0.9	50.3	46.1
Value added by manufacture (value of products less cost of materials)	31,625,148	23,638,479	20,963,632	19,125,288	12,807,925	8,183,580	50.9	33.8	12.8	9.6	49.3	56.5

[1] A minus sign (−) denotes decrease. Where percentages are omitted, comparable figures are not available.
[2] Comparable figures not available.
[3] Figures not strictly comparable.

The number of wage earners employed in this industry in 1909 was nearly three times the number in 1869, and the value of products in the later year was more than three times as great as that in the earlier. The number of establishments, however, decreased gradually from 1869 to 1899, although increasing slightly between 1899 and 1904, and the increase in the number of wage earners in the latter part of the period covered by the table was not very great, a decrease occurring during the decade 1889–1899, while the increase for the last five-year period, 1904–1909, was only three-tenths of 1 per cent. The greatest relative increase in value of products shown for any decade is that for the decade 1879–1889 (50.3 per cent), although the increases for the decades 1899–1909 and 1869–1879 were nearly as large. For the decade 1899–1909 the increase in the number of wage earners was 17.2 per cent; in the amount of wages paid, 39.7 per cent; in the cost of materials, 45.3 per cent; and in value of products, 47.7 per cent. Some part, however, of the increase in cost of materials and value of products was due to the general advance in prices which took place during the decade. Both the cost of materials and the value of products involve some duplication, due to the sale of yarns by some carpet and rug mills to other establishments in the industry, but the amount of such duplication is relatively small, since the bulk of the yarns purchased by the carpet and rug mills are produced by mills in the woolen industry. The value of the yarn made for sale in 1909 by carpet and rug mills was only $732,846.

Summary, by states.—Table 51 summarizes, by states, the more important statistics of the industry, the states being arranged according to the value of products reported for 1909. Connecticut, which state ranked fourth both in 1909 and 1904 in number of wage earners, value of products, and value added by manufacture, is included under "all other states" in order to avoid the disclosure of individual operations.

Table 51

THE CARPET AND RUG INDUSTRY.

STATE.	Number of establishments: 1909	Wage earners. Average number: 1909	Wage earners. Per cent of total: 1909	Wage earners. Rank. 1909	Wage earners. Rank. 1904	Value of products. Amount: 1909	Value of products. Per cent of total: 1909	Value of products. Rank. 1909	Value of products. Rank. 1904	Value added by manufacture. Amount: 1909	Value added by manufacture. Per cent of total: 1909	Value added by manufacture. Rank. 1909	Value added by manufacture. Rank. 1904	Per cent of increase.[1] Wage earners (average number). 1899–1909	1904–1909	1899–1904	Value of products. 1899–1909	1904–1909	1899–1904	Value added by manufacture. 1899–1909	1904–1909	1899–1904
United States	139	33,307	100.0	....	....	$71,188,152	100.0	....	....	$31,625,148	100.0	....	....	17.2	0.3	16.9	47.7	15.6	27.8	50.9	33.8	12.8
New York	16	11,898	35.7	1	2	25,606,262	36.0	1	2	12,291,090	38.9	1	2	38.3	7.4	28.8	70.4	32.0	29.1	67.3	48.6	12.6
Pennsylvania	93	11,510	34.6	2	1	24,879,232	34.9	2	1	10,230,934	32.4	2	1	−10.9	−16.1	6.2	7.6	−8.3	17.3	9.6	−1.8	11.5
Massachusetts	11	5,954	17.9	3	3	12,811,981	18.0	3	3	5,310,871	16.8	3	3	32.9	15.0	15.6	83.9	31.9	39.4	78.5	76.4	1.2
New Jersey	9	884	2.7	5	5	1,945,217	2.7	5	5	1,047,702	3.3	5	5	−24.5	−23.3	−1.5	27.7	11.2	14.8	59.8	36.0	17.6
All other states	10	3,061	9.2	....	....	5,945,460	8.4	....	....	2,744,551	8.7	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....

[1] Percentages are based on figures in Table 75. A minus sign (−) denotes decrease.

Carpet and rug factories were reported from only 11 states in 1909. New York ranked first at the census of 1909 in the average number of wage earners employed in the industry, in value of products, and in value added by manufacture, having advanced from second place since 1904; the value of products reported for this state in 1909 represented 36 per cent of the total value of products for the industry in the United States. The number of wage earners in New York increased 38.3 per cent between 1899 and 1909, and the value of products 70.4 per cent. Pennsylvania, which ranked first among the states in 1904 in all three items, was second in 1909, contributing 34.9 per cent of the total value of products for the industry. Massachusetts, which ranked third in all three items in both 1909 and 1904, shows a greater percentage of increase in value of products for the decade than either New York or Pennsylvania, the gain being 83.9 per cent.

Persons engaged in the industry.—Table 52 shows, for 1909, the number of persons engaged in the carpet and rug industry, classified according to occupational status and sex, and in the case of wage earners according to age also. It should be borne in mind that the sex and age classification of the average number of wage earners in this and in other tables is an estimate obtained by the method described in the Introduction.

Table 52

PERSONS ENGAGED IN THE CARPET AND RUG INDUSTRY: 1909

CLASS.	Total.	Male.	Female.
All classes	34,706	20,725	13,981
Proprietors and officials	448	444	4
Proprietors and firm members	134	134	.....
Salaried officers of corporations	115	113	2
Superintendents and managers	199	197	2
Clerks	951	801	150
Wage earners (average number)	33,307	19,480	13,827
16 years of age and over	31,956	18,720	13,236
Under 16 years of age	1,351	760	591

The average number of persons engaged in the industry during 1909 was 34,706, of whom 33,307, or 96 per cent, were wage earners, 448, or 1.3 per cent, proprietors and officials, and 951, or 2.7 per cent, clerks, this class including other subordinate salaried employees. Of the total number of persons engaged in the industry, 20,725, or 59.7 per cent, were males, and 13,981, or 40.3 per cent, females. The average number of children under 16 years of age employed as wage earners was 1,351, or 3.9 per cent of the total number of persons engaged in the industry.

The average number of wage earners employed in each state in 1909, 1904, and 1899 is given in Table 75. The average number distributed by sex and age is not shown for the individual states, but Table 76 gives such a distribution of the number employed on December 15, or the nearest representative day. Female wage earners were reported as employed in nine states, the largest number, 5,406, being reported for New York, and the next largest number, 4,354, for Pennsylvania. The employment of children under 16 years of age was practically confined to five states; the largest number, 639, was reported for Pennsylvania, and the next largest, 366, for Massachusetts.

In order to compare the distribution of the persons engaged in the industry according to occupational status in 1909 with that in 1904, it is necessary to use the classification employed at the earlier census. (See Introduction.) Such a comparison is made in Table 53.

Table 53

PERSONS ENGAGED IN THE CARPET AND RUG INDUSTRY.

CLASS.	1909. Number.	1909. Per cent distribution.	1904. Number.	1904. Per cent distribution.	Per cent of increase:[1] 1904–1909
Total	34,706	100.0	34,393	100.0	0.9
Proprietors and firm members	134	0.4	149	0.4	−10.1
Salaried employees	1,265	3.6	1,023	3.0	23.7
Wage earners (average number)	33,307	96.0	33,221	96.6	0.3

[1] A minus sign (−) denotes decrease.

Table 54 shows the average number of wage earners in the carpet and rug industry distributed according to age, and in the case of those 16 years of age and over, according to sex, for 1909, 1904, and 1899.

Table 54 — AVERAGE NUMBER OF WAGE EARNERS IN THE CARPET AND RUG INDUSTRY.

CLASS.	1909		1904		1899	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total	**33,307**	**100.0**	**33,221**	**100.0**	**28,411**	**100.0**
16 years of age and over	31,956	95.9	31,338	94.3	26,328	92.7
Male	18,720	56.2	16,930	51.0	13,860	48.8
Female	13,236	39.7	14,408	43.4	12,468	43.9
Under 16 years of age	1,351	4.1	1,883	5.7	2,083	7.3

While the figures indicate that there has been a gradual increase in the relative number of men and a corresponding decrease in the number of women employed in the industry, the most noticeable fact brought out by the table is the decrease from census to census in the absolute number of children employed.

Wage earners classified according to nature of employment.—Table 55 gives the total number of wage earners employed as spinners, as weavers, and in all other capacities, in the carpet and rug industry classified according to age and sex for 1909 and 1904, together with similar statistics for 1909 only for selected states.

The total number of wage earners employed on December 15 (or the nearest representative day) in 1909 was 34,874, of whom 3.3 per cent were spinners and 30.9 per cent weavers. The corresponding percentages for 1904 were 4.9 and 36.6 per cent, respectively. Both spinners and weavers declined in absolute number as well as in their proportion of the total, some part of the decline probably being attributable to the improvement of carpet and rug making machinery.

Table 55 — NUMBER OF WAGE EARNERS IN THE CARPET AND RUG INDUSTRY.[1]

CLASS.	Total.	Spinners.		Weavers.		All other.	
		Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.
United States:							
1909	**34,874**	**1,133**	**3.3**	**10,779**	**30.9**	**22,957**	**65.8**
1904	**33,221**	**1,621**	**4.9**	**12,154**	**36.6**	**19,446**	**58.5**
16 years and over:							
1909	33,400	1,062	3.2	10,755	32.1	21,643	64.7
1904	31,338	1,467	4.7	12,105	38.6	17,766	56.7
Male—							
1909	19,601	511	2.6	6,936	35.4	12,154	62.0
1904	16,930	531	3.1	7,055	41.7	9,344	55.2
Female—							
1909	13,859	551	4.0	3,819	27.6	9,489	68.5
1904	14,408	936	6.5	5,050	35.0	8,422	58.5
Under 16 years:							
1909	1,414	76	5.4	24	1.7	1,314	92.9
1904	1,883	154	8.2	49	2.6	1,680	89.2
Male, 1909	796	35	4.4	.....	.....	761	95.6
Female, 1909	618	41	6.6	24	3.9	553	89.5
Selected states, 1909:							
Massachusetts	6,087	237	3.9	1,233	20.3	4,617	75.8
16 years and over	5,721	207	3.6	1,231	21.5	4,283	74.9
Male	3,155	75	2.4	553	17.5	2,527	80.1
Female	2,566	132	5.1	678	26.4	1,756	68.4
Under 16 years	366	30	8.2	2	0.5	334	91.3
Male	213	10	4.7	.....	.....	203	95.3
Female	153	20	13.1	2	1.3	131	85.6
Selected states, 1909—Continued.							
New Jersey	1,008	27	2.7	297	29.5	684	67.9
16 years and over	991	27	2.7	297	30.0	667	67.3
Male	697	19	2.7	254	36.4	424	60.8
Female	294	8	2.7	43	14.6	243	82.7
Under 16 years	17	.....	.....	.....	.....	17	100.0
Male	15	.....	.....	.....	.....	15	100.0
Female	2	.....	.....	.....	.....	2	100.0
New York	12,102	535	4.4	2,912	23.9	8,745	71.7
16 years and over	12,114	526	4.3	2,912	24.0	8,676	71.6
Male	6,708	242	3.6	1,390	20.7	5,076	75.7
Female	5,406	284	5.3	1,522	28.2	3,600	66.6
Under 16 years	78	9	11.5	.....	.....	69	88.5
Male	51	1	2.0	.....	.....	50	98.0
Female	27	8	29.6	.....	.....	19	70.4
Pennsylvania	12,454	232	1.9	5,705	45.8	6,517	52.3
16 years and over	11,815	195	1.7	5,683	48.1	5,937	50.2
Male	7,461	131	1.8	4,324	58.0	3,006	40.3
Female	4,354	64	1.5	1,359	31.2	2,931	67.3
Under 16 years	639	37	5.8	22	3.4	580	90.8
Male	342	24	7.0	.....	.....	318	93.0
Female	297	13	4.4	22	7.4	262	88.2

[1] For 1909 the figures are those reported for December 15, or the nearest representative day; for 1904 the average number is given.

Table 56 shows the percentage of men, women, and children, respectively, in the total number of wage earners employed in the industry and in each of the three classes for which statistics are presented in Table 55, together with similar statistics for 1909 only for selected states.

In Massachusetts and New York more than half of the spinners and weavers were women, while in New Jersey and Pennsylvania men were largely in the majority. In Massachusetts and Pennsylvania children constituted a considerable proportion of the spinners and of "all other" wage earners.

Table 56

CLASS.	WAGE EARNERS EMPLOYED IN THE CARPET AND RUG INDUSTRY—PER CENT OF TOTAL.		
	16 years and over.		Under 16 years.
	Male.	Female.	
United States:			
1909	56.2	39.7	4.1
1904	51.0	43.4	5.7
Spinners:			
1909	62.5	36.7	0.8
1904	55.1	43.5	1.5
Weavers:			
1909	64.3	35.4	0.2
1904	58.0	41.6	0.4
All other:			
1909	52.0	41.3	5.7
1904	47.0	42.3	8.6
Selected states, 1909:			
Massachusetts:			
All wage earners	51.8	42.2	6.0
Spinners	31.6	55.7	12.7
Weavers	44.8	55.0	0.2
All other	54.7	38.0	7.2
Selected states, 1909—Continued.			
New Jersey:			
All wage earners	69.1	29.2	1.7
Spinners	70.4	29.6	.....
Weavers	85.5	14.5	.....
All other	62.0	35.5	2.5
New York:			
All wage earners	55.0	44.3	0.6
Spinners	45.2	53.1	1.7
Weavers	47.7	52.3	.....
All other	58.0	41.2	0.8
Pennsylvania:			
All wage earners	59.9	35.0	5.1
Spinners	56.5	27.6	15.9
Weavers	75.8	23.8	0.4
All other	46.1	45.0	8.9

Wage earners employed, by months.—Table 57 gives the number of wage earners employed on the 15th (or the nearest representative day) of each month during the year 1909 for the five states in which an average of 500 or more wage earners were employed during the year.

Table 57

STATE.	WAGE EARNERS EMPLOYED IN THE CARPET AND RUG INDUSTRY: 1909 [1]												
	Average number during the year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
United States	33,307	33,312	33,603	33,313	32,719	32,835	33,186	33,297	33,387	33,462	33,082	33,397	**34,097**
Connecticut	2,999	2,971	2,978	2,978	2,940	2,939	*2,933*	3,014	3,029	3,029	3,041	**3,086**	3,065
Massachusetts	5,954	6,037	6,102	5,977	*5,855*	5,927	5,880	5,974	5,888	5,930	5,898	5,893	6,087
New Jersey	884	902	940	925	824	867	*779*	833	898	865	853	914	**1,008**
New York	11,898	*11,570*	11,654	11,704	11,804	11,747	11,859	11,952	12,007	12,015	12,032	12,154	**12,192**
Pennsylvania	11,510	11,778	**11,875**	11,581	11,238	11,292	11,672	11,460	11,500	11,558	*11,189*	11,300	11,677

[1] The month of maximum employment for each state is indicated by boldface figures and that of minimum employment by italic figures.

The largest number of wage earners employed during any month of 1909 was 34,097, in December, and the smallest number, 32,719, in April, the minimum number being equal to 96 per cent of the maximum. In 1904 the maximum number, 34,514, was shown for February, and the minimum number, 31,570, for September, the latter number being equal to 91.5 per cent of the former. In New York and New Jersey the month of maximum employment in 1909 was December; in Connecticut, November; and in Pennsylvania and Massachusetts, February.

Prevailing hours of labor.—In Table 58 the wage earners in the industry have been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. In making this classification the average number of wage earners employed during the year in each establishment was classified as a total according to the hours prevailing in that establishment, even though a few employees worked a greater or smaller number of hours.

Only 1 per cent of the wage earners employed in 1909 were in establishments where the prevailing number of hours was less than 54 per week, and none were in establishments where the prevailing hours were over 60 per week. In Massachusetts and New Jersey the most common working time was between 54 and 60 hours per week; in New York, 54 hours; and in Pennsylvania, 60 hours. In Connecticut all the wage earners were reported as employed in establishments where the prevailing hours of work were between 54 and 60 per week.

Table 58

STATE.	AVERAGE NUMBER OF WAGE EARNERS IN THE CARPET AND RUG INDUSTRY: 1909					
	Total.	In establishments with prevailing hours—				
		48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.
United States	33,307	**165**	**178**	**7,078**	13,802	**12,084**
Connecticut	2,999	.....	.....	.....	2,999	.....
Massachusetts	5,954	.....	45	.....	5,909	.....
New Jersey	884	36	3	.....	845	.....
New York	11,898	.....	124	6,463	742	4,569
Pennsylvania	11,510	129	.....	615	3,267	7,499

Character of ownership.—Table 59 presents statistics with respect to the character of ownership of the establishments in the carpet and rug industry for 1909 and 1904.

Table 59

CHARACTER OF OWNERSHIP.	THE CARPET AND RUG INDUSTRY.			
	Number of establishments.		Value of products.	
	1909	1904	1909	1904
Total	139	139	$71,188,152	$61,586,433
Individual	45	44	7,073,752	7,919,719
Firm	37	46	17,215,357	17,690,846
Corporation	57	49	46,899,043	35,975,868
Per cent of total	100.0	100.0	100.0	100.0
Individual	32.4	31.7	9.9	12.9
Firm	26.6	33.1	24.2	28.7
Corporation	41.0	35.3	65.9	58.4

In 1909, of the total number of establishments, 41 per cent were under corporate ownership, as compared with 35.2 per cent in 1904. In 1909 the value of products of these establishments, however, represented 65.9 per cent of the total for the industry, and 58.4 per cent in 1904.

Of the total number of wage earners reported for 1909, 2,546, or 7.6 per cent, were employed in establishments under individual ownership; 8,879, or 26.7 per cent, in those under firm ownership; and 21,882, or 65.7 per cent, in those owned by corporations.

Size of establishments.—Table 60 presents statistics for 1909 and 1904 for the establishments in the industry grouped according to the value of their products.

Of the 139 establishments reported for 1909 and 1904, only 16 manufactured products valued at $1,000,000 and over; but these reported 71.7 per cent of the total value of products in 1909 and 62.8 per cent in 1904.

Establishments manufacturing products valued at less than $20,000 constituted more than one-sixth (17.2 per cent) of the total number of mills in 1909, but the value of their products amounted to only two-tenths of 1 per cent of the total.

The average value of products per establishment increased from $443,068 in 1904 to $512,145 in 1909, and the average value added by manufacture, as computed from the figures in Table 1, from $170,061 to $227,519. The average number of wage earners per establishment was 239 in 1904 and 240 in 1909.

Table 60

VALUE OF PRODUCTS PER ESTABLISHMENT.	THE CARPET AND RUG INDUSTRY.			
	Number of establishments.		Value of products.	
	1909	1904	1909	1904
Total	139	139	$71,188,152	$61,586,433
Less than $5,000	12	6	30,390	15,398
$5,000 and less than $20,000	12	6	134,346	61,527
$20,000 and less than $100,000	43	46	2,217,254	2,717,194
$100,000 and less than $1,000,000	56	65	17,772,495	20,101,544
$1,000,000 and over	16	16	51,033,667	38,690,770
Per cent of total	100.0	100.0	100.0	100.0
Less than $5,000	8.6	4.3	(1)	(1)
$5,000 and less than $20,000	8.6	4.3	0.2	0.1
$20,000 and less than $100,000	30.9	33.1	3.1	4.4
$100,000 and less than $1,000,000	40.3	46.8	25.0	32.6
$1,000,000 and over	11.5	11.5	71.7	62.8

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

Table 61 classifies the establishments in the carpet and rug industry in the five leading states according to the number of wage earners employed.

Of the 139 establishments reported in 1909, 4.3 per cent employed no wage earners, 27.3 per cent employed from 1 to 20 wage earners, 38.1 per cent from 21 to 100, 20.1 per cent from 101 to 500, and 10.1 per cent more than 500.

Of the total number of wage earners, 3.9 per cent were reported by establishments employing from 1 to 50 wage earners, 13.3 per cent by establishments employing from 51 to 250, 24.2 per cent by establishments employing from 251 to 1,000, and 58.6 per cent by those employing more than 1,000 wage earners. In New York 83.9 per cent of the wage earners were reported by establishments employing more than 1,000 wage earners.

Table 61

STATE.	THE CARPET AND RUG INDUSTRY.																			
	Total.		Establishments employing in 1909—																	
			No wage earners.	1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
	Establishments.	Wage earners (average number).	Establishments.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.
United States	139	33,307	6	10	21	28	357	27	923	26	2,025	16	2,416	12	4,144	6	3,906	8	19,515
Connecticut	3	2,999								1	88	1	144					1	2,767
Massachusetts	11	5,954		1	3	1	13	1	45	1	80	1	168	2	747	2	1,644	2	3,254
New Jersey	9	884		2	3	2	26	1	36	1	84	1	144	2	591				
New York	16	11,898				4	46	1	47	4	324	1	225	2	718	1	554	3	9,984
Pennsylvania	93	11,510	6	4	10	18	247	23	763	19	1,449	12	1,735	6	2,088	3	1,708	2	3,510

Expenses.—As stated in the Introduction, the census figures for expenses do not purport to show the total cost of manufacture, since they take no account of interest or depreciation; hence they can not properly be used for determining profits. Facts of interest can be brought out, however, concerning the relative importance of the different classes of expenses which were reported. Table 50 shows the total expenses in 1909 to have been $62,311,110, distributed as follows: Cost of materials, $39,563,004, or 63.5 per

cent; wages, $15,536,050, or 24.9 per cent; salaries, $2,209,042, or 3.5 per cent; and miscellaneous expenses, made up of advertising, ordinary repairs of buildings and machinery, insurance, traveling expenses, and other sundry expenses, $5,003,014, or 8 per cent. Table 62 shows the per cent distribution of the expenses reported by the four states for which financial statistics can be given.

Table 62

STATE.	PER CENT OF TOTAL EXPENSES REPORTED IN THE CARPET AND RUG INDUSTRY: 1909			
	Salaries.	Wages.	Cost of materials.	Miscellaneous expenses.
United States	3.5	24.9	63.5	8.0
Massachusetts	4.2	24.7	67.0	4.2
New Jersey	5.0	25.0	59.8	9.4
New York	3.2	27.1	61.4	8.3
Pennsylvania	3.4	22.8	64.7	9.1
All other states	3.9	25.7	60.4	10.0

Engines and power.—The amount of power used in the industry was first reported at the census of 1869. Table 50 shows that the total horsepower used in the carpet and rug industry increased from 3,719 in 1869 to 38,553 in 1909. Table 63 shows the statistics of power as reported at the censuses of 1909, 1904, and 1899.

The total primary power increased from 26,740 horsepower in 1899 to 38,553 horsepower in 1909, or 44.2 per cent. In 1909, as in 1904 and 1899, the power of steam engines constituted a very large part of the total primary power, but it formed a smaller proportion of the total in 1909 than in 1899—79.6 per cent, as compared with 86.4 per cent. Water power, also, showed a slight decrease in its proportion of the total in 1909, compared with 1904. There was an increase in the relative importance of the power of gas and other internal-combustion engines and of rented electric power. A great increase also appears in the use of electric motors for the distribution of power by means of current generated in the same establishment.

Table 63

POWER.	THE CARPET AND RUG INDUSTRY.								
	Number of engines or motors.			Horsepower.			Per cent distribution of horsepower.		
	1909	1904	1899	1909	1904	1899	1909	1904	1899
Primary power, total	**366**	**208**	**178**	**38,553**	**33,945**	**26,740**	**100.0**	**100.0**	**100.0**
Owned	175	193	178	34,485	32,686	26,271	89.5	96.3	98.2
Steam	143	166	155	30,680	29,631	23,091	79.6	87.3	86.4
Gas	8	2	1	500	55	35	1.3	0.2	0.1
Water wheels	24	25	22	3,305	2,988	3,145	8.6	8.8	11.7
Other	.....	.....	.....	.....	12	.....	.....	(1)	.....
Rented	191	15	.....	4,068	1,259	469	10.5	3.7	1.8
Electric	191	15	.....	2,709	293	.....	7.0	0.9	.....
Other	.....	.....	.....	1,359	966	469	3.5	2.8	1.8
Electric motors	**546**	**196**	**5**	**10,906**	**5,587**	**192**	**100.0**	**100.0**	**100.0**
Run by current generated by establishment	355	181	5	8,197	5,294	192	75.2	94.8	100.0
Run by rented power	191	15	.....	2,709	293	.....	24.8	5.2	.....

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

SPECIAL STATISTICS RELATING TO MATERIALS, PRODUCTS, AND EQUIPMENT.

Materials.—Table 64 shows the quantity and cost of the materials used in the carpet and rug industry for 1909, 1904, and 1899.

The total quantity of wool used, on the scoured equivalent basis, decreased somewhat between 1899 and 1904, but the increase from 1904 to 1909 was sufficient to make a net increase of 37 per cent for the decade. Practically all the wool used was of foreign origin, domestic wool constituting only four-tenths of 1 per cent of the total consumption of wool (in condition purchased) in 1909, 1.7 per cent in 1904, and two-tenths of 1 per cent in 1899. Most of the wool used in the manufacture of carpets and rugs is of comparatively low grade (coarse fiber), and domestic wool, which is nearly all of medium or high grade, is chiefly used in the mills making woolen and worsted cloths.

The importation of carpet wool (designated "class 3" in the statistics of imports and exports) in 1909 aggregated 101,876,052 pounds. (See report on the woolen industry.) The difference between the imports of carpet wool and the quantity reported as material by the carpet and rug mills represents for the most part the carpet wool spun into yarn in woolen and worsted mills and sold in that form to carpet and rug mills.

Table 64

MATERIAL.	MATERIALS USED IN THE CARPET AND RUG INDUSTRY.			
	1909	1904	1899	Per cent of increase:[1] 1899–1909
Total cost	**$39,563,004**	**$37,947,954**	**$27,228,719**	**45.3**
Wool, in condition, purchased:				
Pounds	64,135,020	51,320,521	51,871,334	23.6
Cost	$11,752,396	$10,431,146	$8,104,107	45.0
Equivalent of above in scoured condition, pounds	51,474,353	31,551,895	37,560,231	37.0
Animal hair:				
Pounds	5,400,944	6,805,802	6,189,757	−12.7
Cost	$474,057	$593,588	$549,610	−13.7
Cotton:				
Pounds	5,147,130	1,997,369	1,943,942	164.8
Cost	$533,302	$251,112	$129,449	312.0
Waste and noils, purchased:				
Pounds	2,732,034	2,172,481	2,325,054	17.5
Cost	$513,392	$341,309	$305,733	67.9
Yarns, purchased:				
Woolen—				
Pounds	25,718,747	32,431,400	32,996,316	−22.1
Cost	$5,036,118	$6,648,001	$5,030,654	0.1
Worsted—				
Pounds	11,292,749	11,355,993	9,218,267	22.5
Cost	$5,588,915	$5,405,072	$3,544,860	57.7
Cotton—				
Pounds	26,166,241	27,421,831	19,823,561	32.0
Cost	$4,772,594	$4,757,850	$2,744,928	73.9
Linen—				
Pounds	8,792,876	8,228,200	8,388,211	4.8
Cost	$1,606,009	$1,355,892	$1,164,826	37.9
Jute, ramie, and other vegetable fiber—				
Pounds	55,592,343	49,119,558	38,846,413	43.1
Cost	$3,926,694	$3,404,516	$2,476,029	58.6
Chemicals and dyestuffs	$1,729,492	$1,467,476	$1,151,726	50.2
All other materials	$3,630,035	$3,291,992	$2,026,797	79.1

[1] A minus sign (−) denotes decrease.

Establishments in the woolen industry in 1909 reporting specifically the manufacture of carpet yarns used over 28,000,000 pounds of wool and nearly 9,000,000 pounds of animal hair. It thus appears that in the year 1909 there were used in the manufacture of carpets and rugs and of yarns intended for carpets and rugs at least 92,000,000 pounds of wool and 14,000,000 pounds of animal hair.

The purchased waste and noils used in 1909 included 107,863 pounds of mohair noils, costing $18,362, the balance being wool waste and noils. In 1909 the carpet and rug mills made for their own consumption 51,277,848 pounds of wool yarns, of which 37,184,277 pounds were woolen (carded) and 14,093,571 pounds were worsted (combed), making, with the yarns purchased, a total consumption of 88,289,344 pounds of wool yarn, of which 62,903,024 pounds were woolen and 25,386,320 pounds were worsted. Thus approximately two-fifths of the wool yarns used, both woolen and worsted, were purchased and three-fifths made in the mills where used.

The quantity of purchased cotton yarns used increased 32 per cent from 1899 to 1909. In addition to the purchased cotton yarns used in 1909, the carpet and rug mills themselves produced 3,023,102 pounds, making a total consumption of 29,189,343 pounds. The increase for the decade in the quantity of purchased linen yarn used was only 4.8 per cent, though the increase in its cost was 37.9 per cent, but the consumption of purchased yarns of jute, ramie, and other vegetable fibers increased 43.1 per cent. The carpet and rug mills purchase practically all the yarns of these classes that they use.

Included under the heading of "all other materials" in 1909 were 584,188 pounds of merino yarns, costing $85,950; 196,840 pounds of spun silk, costing $322,171; 824,827 pounds of shoddy, mungo, and wool extract, costing $56,345; 111,548 pounds of tops, costing $39,267; other and unitemized materials entering into the composition of the products, costing $836,375; fuel and power, costing $939,568; freight on materials, not included in their cost, $106,387; and other materials, such as mill supplies, costing $1,243,972.

Table 65 shows the quantity of each of the principal fibers and purchased yarns used in 1909 and 1899 and the percentage which each formed of the total quantity.

The table shows a decrease in the relative quantity of wool materials—scoured wool, waste and noils, and woolen and worsted yarns—used, such materials forming 47.5 per cent of the total in 1909 as compared with 52.3 per cent in 1899. On the other hand, the quantity of cotton materials—cotton and cotton yarns—used increased from 13.8 per cent of the total in 1899 to 16.3 per cent in 1909, and that of jute, ramie, and similar yarns from 24.7 per cent to 28.9 per cent during the same period.

Table 65 — FIBERS AND PURCHASED YARNS USED IN THE CARPET AND RUG INDUSTRY.

MATERIAL.	1909		1899	
	Quantity (pounds).	Per cent of total.	Quantity (pounds).	Per cent of total.
Total	**192,317,417**	**100.0**	**157,291,752**	**100.0**
Scoured wool	51,474,353	26.8	37,560,231	23.9
Animal hair	5,400,944	2.8	6,189,757	3.9
Cotton	5,147,130	2.7	1,943,942	1.2
Waste and noils, purchased	2,732,034	1.4	2,325,054	1.5
Yarns, purchased:				
Woolen	25,718,747	13.4	32,996,316	21.0
Worsted	11,292,749	5.9	9,218,267	5.9
Cotton	26,166,241	13.6	19,823,561	12.6
Linen	8,792,876	4.6	8,388,211	5.3
Jute, ramie, etc	55,592,343	28.9	38,846,413	24.7

Table 66 gives statistics regarding the principal materials, by states.

Table 66 — MATERIALS USED IN THE CARPET AND RUG INDUSTRY.

MATERIAL AND STATE.	1909		1904	1899
	Cost.	Quantity.	Quantity.	Quantity.
		Pounds.	*Pounds.*	*Pounds.*
Wool, in condition purchased	$11,752,396	64,135,020	51,320,521	51,871,334
Massachusetts	2,516,995	12,221,681	12,201,063	13,746,907
New York	6,256,326	36,177,487	23,552,683	23,207,198
Pennsylvania	1,047,177	5,787,409	9,126,230	11,568,721
All other states	1,931,898	9,948,443	6,350,545	3,258,508
Equivalent of above in scoured condition	.....	51,474,353	31,551,895	37,560,231
Massachusetts	.....	9,547,507	9,552,710	10,096,801
New York	.....	29,779,516	12,212,682	17,224,476
Pennsylvania	.....	4,309,413	4,818,741	8,189,811
All other states	.....	7,837,917	4,967,753	2,049,143
Animal hair	474,057	5,400,944	6,805,802	6,189,757
Cotton	533,302	5,147,130	1,997,369	1,943,942
Waste and noils, purchased	513,392	2,732,034	2,172,481	2,325,054
Yarns, purchased:				
Woolen	5,036,118	25,718,747	32,431,400	32,996,316
Massachusetts	238,161	1,480,811	(1)	.....
New Jersey	201,074	678,411	897,536	2,036,980
New York	137,408	564,924	4,239,395	1,594,801
Pennsylvania	4,306,006	22,320,073	26,077,669	28,029,987
All other states	153,469	674,528	1,216,800	1,334,548
Worsted	5,588,915	11,292,749	11,355,993	9,218,267
Massachusetts	2,017,780	3,900,736	(1)	2,142,847
New Jersey	187,731	371,157	.....	37,047
New York	770,688	1,638,596	1,053,638	281,830
Pennsylvania	2,592,410	5,360,220	6,292,815	6,504,583
All other states	11,306	22,040	3,409,540	251,960
Cotton	4,772,594	26,166,241	27,421,831	19,823,561
Massachusetts	587,501	3,309,016	3,381,011	2,163,677
New Jersey	155,780	869,578	849,377	432,983
New York	1,141,669	6,599,109	4,801,611	3,617,216
Pennsylvania	2,674,819	14,385,059	17,206,402	13,215,750
All other states	212,825	1,003,479	1,093,430	393,935
Linen	1,606,009	8,792,876	8,228,200	8,388,211
Massachusetts	215,556	1,195,599	1,588,434	1,175,131
New York	866,837	4,858,864	5,049,746	5,382,255
Pennsylvania	285,481	1,483,096	1,232,433	1,699,108
All other states	238,135	1,255,317	357,587	131,717
Jute, ramie, and other vegetable fiber	3,926,694	55,592,343	49,119,558	38,846,413
Massachusetts	465,123	6,243,685	5,067,155	2,931,326
New Jersey	105,193	1,352,412	2,406,587	3,091,776
New York	1,880,798	27,836,891	21,403,311	16,411,276
Pennsylvania	1,213,413	16,646,563	17,990,828	15,784,309
All other states	262,167	3,512,702	2,251,677	627,726
			Cost.	*Cost.*
Chemicals and dyestuffs	1,729,492	.....	$1,467,476	$1,151,726
Massachusetts	252,819	.....	208,288	126,315
New Jersey	32,624	.....	55,511	37,856
New York	417,770	.....	468,372	384,835
Pennsylvania	861,323	.....	681,247	550,542
All other states	164,956	.....	54,058	52,178

[1] Figures can not be shown without disclosing individual operations.

Products.—The value of all products of the establishments in the carpet and rug industry in 1909 was $71,188,152, the value of carpets and rugs alone being $66,966,338. In addition, woolen and worsted rugs to the value of $479,161 were reported as subsidiary products by establishments engaged primarily in the manufacture of cotton goods and of wool hats. The total value of the carpets and rugs manufactured in all industries was therefore $67,445,499.

Table 67 shows the quantity and value of the principal products of the carpet and rug industry for 1909, 1904, and 1899. In comparing the percentages of increase in quantity with those in value, it should be remembered that each class of products includes a number of grades and styles, varying greatly in price, and that the relative quantities of these may have changed considerably from census to census. Prior to the census of 1909 carpets were reported in running yards (ingrain 36 inches wide and others 27 inches wide), while rugs woven whole were reported in square yards. In 1909 both carpets and rugs were reported in square yards; the figures for 1904 and 1899, therefore, have been reduced to square yards for the sake of comparability.

The total production of carpets and rugs in the industry in 1909 was 81,218,881 square yards, representing an increase of 6.3 per cent as compared with 1899, but a slight decrease (1.8 per cent) as compared with 1904. The total value of the carpets and rugs produced shows an increase of 53.8 per cent for the decade and an increase of 17.8 per cent for the five-year period 1904–1909.

The great decrease in the production of ingrain carpets between 1899 and 1909 was only partly counterbalanced by increases in other kinds of carpet, and the total production of carpets alone shows a decrease of 11 per cent for the decade. There was an increase, however, in all the principal classes of rugs except Smyrna rugs, the total production of rugs in 1909 being nearly twice that in 1899; and rugs constituted 29.6 per cent of the combined output of carpets and rugs in 1909, as compared with 15.9 per cent in 1899.

With the exception of ingrains, which still held the lead in quantity in 1909, tapestry and Axminster carpets are made in the greatest quantity; in fact, the increase in the production of Axminster carpets and rugs may be considered the leading feature of the industry for the decade.

The rugs reported included only those woven whole (seamless), those woven in strips and sewed together being reported as carpet, although the inclusion of the border in the pattern of this carpet permits of its being used only in rug form. In the case of body Brussels and Wilton rugs only the small sizes are woven whole. Ingrain art squares, however, are commonly woven seamless, and there is a marked tendency toward weaving tapestry, velvet, and Axminster rugs on wide looms, and the production of seamless rugs is rapidly increasing. Although exact data in regard to the production of pieced rugs are not available, it is roughly estimated that the production of such rugs amounted to approximately 21,000,000 square yards in 1909.

Table 67 — PRODUCTS OF THE CARPET AND RUG INDUSTRY.

PRODUCT.	1909	1904	1899	Per cent of increase:[1] 1899–1909
Total value	[2] $71,188,152	[2] $61,586,433	$48,192,351	47.4
Carpets:				
Square yards	57,176,729	66,426,033	64,238,761	−11.0
Value	$48,475,889	$43,991,125	$35,405,926	36.9
Axminster and Moquette—				
Square yards	12,507,261	6,413,686	5,026,778	148.8
Value	$13,680,806	$6,368,757	$4,762,269	187.3
Wilton—				
Square yards	4,576,368	1,297,872	[3] 3,587,126	27.6
Value	$8,737,768	$2,726,667	[3] $4,030,842	116.8
Brussels—				
Square yards	3,960,626	3,024,162	2,686,493	47.4
Value	$5,216,607	$3,898,675	$2,979,867	75.1
Tapestry velvet—				
Square yards	[3] 6,927,198	[3] 8,033,288	4,280,066	61.8
Value	[3] $5,514,130	[3] $7,754,681	$3,743,353	47.3
Tapestry Brussels—				
Square yards	11,405,514	14,099,074	8,737,449	30.5
Value	$8,576,906	$9,955,043	$5,520,665	55.4
Ingrain—				
Square yards	17,799,762	33,557,951	39,920,849	−55.4
Value	$6,749,672	$13,287,302	$14,368,930	−53.0
2-ply—				
Square yards	15,439,260	30,492,156	36,698,292	−57.9
Value	$5,620,542	$11,841,732	$13,222,657	−57.5
3-ply—				
Square yards	2,360,502	3,065,795	3,222,557	−26.8
Value	$1,129,130	$1,445,570	$1,146,273	−1.5
Rugs, woven whole:				
Square yards	24,042,152	16,244,810	12,171,289	97.5
Value	$18,490,449	$12,870,650	$8,145,232	127.0
Axminster and Moquette—				
Square yards	3,184,097	1,767,920	327,598	872.0
Value	$3,691,900	$2,107,383	$342,262	978.7
Wilton—				
Square yards	767,248	1,097,186	339,784	125.8
Value	$1,381,562	$1,983,777	$545,967	153.0
Brussels—				
Square yards	475,831	([4])	([4])	.....
Value	$333,582	([4])	([4])	.....
Tapestry velvet—				
Square yards	3,732,972	([4])	([4])	.....
Value	$3,513,063	([4])	([4])	.....
Tapestry Brussels—				
Square yards	5,672,962	2,009,834	18,750	.....
Value	$4,422,427	$1,509,673	$9,000	.....
Ingrain art squares—				
Square yards	6,131,802	7,135,546	2,722,323	125.2
Value	$2,408,960	$2,785,457	$1,175,951	104.9
Smyrna—				
Square yards	1,400,233	3,828,282	3,651,661	−61.7
Value	$1,660,322	$4,134,500	$3,680,618	−54.9
Other—				
Square yards	2,676,947	406,042	5,111,173	−47.6
Value	$1,078,633	$349,860	$2,391,434	−54.9
All other products	$4,221,814	$4,724,658	$4,641,193	−9.0

[1] A minus sign (−) denotes decrease.
[2] In addition, in 1909, carpets and rugs to the value of $479,161 were reported by establishments engaged primarily in the manufacture of cotton goods and wool hats; in 1904, carpets and rugs to the value of $70,000 were reported by establishments engaged primarily in the manufacture of other products.
[3] Includes Wilton velvet.
[4] Not reported separately.

Table 68 shows the percentage that the different kinds of carpets and of rugs manufactured in the industry formed of the total production of each of these two classes of products in 1909, 1904, and 1899.

Table 68 — KIND OF CARPETS AND RUGS.	PER CENT OF TOTAL PRODUCTION. 1909	1904	1899
Carpets	100.0	100.0	100.0
Axminster and Moquette	21.9	9.7	7.8
Wilton	8.0	2.0	5.6
Brussels	6.9	4.6	4.2
Tapestry velvet	12.1	12.1	6.7
Tapestry Brussels	19.9	21.2	13.6
Ingrain	31.1	50.5	62.1
2-ply	27.0	45.9	57.1
3-ply	4.1	4.6	5.0
Rugs, woven whole	100.0	100.0	100.0
Axminster and Moquette	13.2	10.9	2.7
Wilton	3.2	6.8	2.8
Brussels	2.0	(1)	(1)
Tapestry velvet	15.5	(1)	(1)
Tapestry Brussels	23.6	12.4	0.2
Ingrain art squares	25.5	43.9	22.4
Smyrna	5.8	23.6	30.0
Other	11.1	2.5	42.0

[1] Not reported separately.

The production of ingrain carpets dropped from 62.1 per cent of the total number of square yards of carpet in 1899 to 31.1 per cent in 1909, while all other kinds show gains, the production of Axminster and Moquette carpets increasing from 7.8 per cent of the total to 21.9 per cent.

Tapestry velvet and tapestry Brussels rugs contributed largely to the great increase in the rug production, their combined output amounting to 9,405,934 square yards, or 39.1 per cent of the total in 1909. Ingrain art squares represented 25.5 per cent of the total in 1909, as compared with 22.4 per cent in 1899.

Table 69 shows the quantity of the various kinds of carpets reported at each census from 1879 to 1909, inclusive. The quantities are expressed in running yards, and for 1909 in square yards also.

Table 69 — PRODUCT.	CARPETS PRODUCED IN THE CARPET AND RUG INDUSTRY. 1909 Square yards.	1909 Running yards.	1904 Running yards.	1899 Running yards.	1889 Running yards.	1879 Running yards.
Carpets, total	**57,176,729**	**70,302,385**	**77,382,060**	**72,344,732**	**74,090,220**	**39,282,634**
Ingrain	17,799,762	17,799,762	33,557,951	39,920,849	36,170,027	22,848,828
2-ply	15,439,260	15,439,260	30,492,156	[1] 36,698,292	[1] 32,918,659	[1] 21,986,434
3-ply	2,360,502	2,360,502	3,065,795	[1] 3,222,557	3,251,368	[1] 862,394
Tapestry Brussels	11,405,514	15,207,352	13,798,765	11,649,932	20,008,961	9,441,195
Body Brussels	3,960,626	5,280,835	4,032,216	3,581,991	9,442,348	4,077,190
Wilton and tapestry velvet	11,503,566	15,338,088	12,441,547	10,489,589	3,512,229	217,629
Wilton	4,576,368	6,101,824	1,730,496	[2] 4,782,835	[2] 1,030,101	[2] 157,629
Tapestry velvet	[3] 6,927,198	[3] 9,236,264	[3] 10,711,051	5,706,754	2,482,128	60,000
Axminster and Moquette	12,507,261	16,676,348	8,551,581	6,702,371	[1] 3,572,527	303,366
All other	.....	.....	.....	.....	[1] 1,384,128	2,394,426

[1] In addition, a small quantity was made in the woolen mills. [2] Includes Wilton velvet.
[3] Includes Wilton velvet, which was included with Wilton in 1899 and prior years.

In this table, to make the statistics for the several censuses comparable, Wilton velvet and tapestry velvet carpets have been combined. The separate statistics for Wilton, in 1909 and 1904, refer to Wilton proper, which is woven on a Jacquard loom with a cut pile; Wilton velvet, so called, which is woven on a tapestry loom with a cut pile being included under tapestry velvet. In 1899 and at previous censuses, however, Wilton and Wilton velvet were reported together.

The production of ingrain carpets increased from 1879 to 1899 and then declined, the output in 1909 of 2-ply and 3-ply combined being materially less than in 1879. The largest production of tapestry Brussels and also of body Brussels was reported for 1889, but that of Wilton and tapestry velvets combined, and of Axminister and Moquette carpets, increased throughout the period covered by the table.

Table 70 gives, by states, the output of carpets and rugs for the years 1909, 1904, and 1899, with the value for 1909 only.

Although the manufacture of carpets and rugs was reported from 11 states in 1909, the output was practically all reported from the states of Massachusetts, New Jersey, New York, Pennsylvania, and Connecticut, the last-named state, though ranking fourth in production and value of products, being included with "all other states" to avoid disclosing the operations of individual establishments.

Table 70 — PRODUCT AND STATE.	THE CARPET AND RUG INDUSTRY. 1909 Value.	1909 Quantity (square yards).	1904 Quantity (square yards).	1899 Quantity (square yards).
Carpets	$48,475,889	57,176,729	66,426,033	64,238,761
Massachusetts	10,358,191	7,496,772	6,760,552	6,818,672
New York	16,177,227	17,430,969	19,206,368	16,038,562
Pennsylvania	15,373,145	26,305,322	36,953,509	38,373,245
All other states	6,567,326	5,943,666	3,505,604	3,008,282
Rugs	18,490,449	24,042,152	16,244,810	12,171,289
Massachusetts	1,802,066	2,740,115	1,673,915	506,099
New Jersey	1,081,252	1,680,086	1,451,616	1,007,786
New York	9,300,529	9,542,662	3,353,505	5,765,593
Pennsylvania	6,197,173	9,916,758	8,810,343	4,073,052
All other states	109,429	162,531	955,431	218,759

New York, the most important state in the industry when measured by value of products, shows an increase of 8.7 per cent for the decade 1899–1909 in the number of square yards of carpet produced, but shows a decrease of 9.2 per cent for the five-year period 1904–1909. There was, however, a substantial increase in the combined production of carpets and rugs in the state during this five-year period.

Pennsylvania, while ranking second in value of products, was by far the most important state as re-

gards the number of square yards of carpets and rugs produced in 1909, as well as in 1904 and 1899. The total production in 1909, however, was only 36,222,080 square yards, as compared with 43,046,297 in 1899, most of the decrease being in ingrain carpets, which form a very large proportion of the total output of carpets in Pennsylvania—90.7 per cent in 1909 and 82.8 per cent in 1899.

Equipment.—Table 71 shows, by states, the number of sets of cards and the number of wool-combing machines, pickers, and garnet machines in use in the carpet and rug mills in 1909, 1904, and 1899.

Table 71

KIND OF EQUIPMENT.	THE CARPET AND RUG INDUSTRY.					
	United States.	Connecticut.	Massachusetts.	New Jersey.	New York.	Pennsylvania.
Woolen cards:						
1909	456	54	80	8	242	72
1904	[1] 389	48	[1] 80	5	180	76
1899	468	25	66	10	275	92
Wool-combing machines:						
1909	132	19	46	3	52	12
1904	109	19	47	3	12	28
1899	134	17	47	3	50	17
Of American manufacture—						
1909	68	4	30	.....	31	3
1904	46	3	22	3	9	9
1899	46	.....	29	1	11	5
Of foreign manufacture—						
1909	64	15	16	3	21	9
1904	63	16	25	.....	3	19
1899	88	17	18	2	39	12
Pickers: [2]						
1909	[3] 140	6	77	1	39	16
1904	79	5	23	2	26	23
Garnet machines: [2]						
1909	27	4	11	.....	12	.....
1904	18	4	9	.....	3	2

[1] Includes 3 sets of shoddy cards. [2] Figures for 1899 not available.
[3] Includes 1 in Ohio.

The number of woolen cards and of wool-combing machines reported in 1909 was slightly smaller than in 1899, although somewhat larger than in 1904. Since the amount of wool used has increased during the decade, it would appear that there has been either an increase in the capacity of the machinery or more efficient use of it. Pennsylvania, which ranked first in the production of carpets and rugs in 1909, ranked third in number of sets of cards used, a large percentage of the wool used in that state being purchased in the form of yarn.

Wool-combing machines of American manufacture formed a somewhat larger proportion of the total number in 1909 than in 1904 or 1899.

Spindles.—Table 72 gives the spindle equipment of the carpet and rug mills for 1909, 1904, and 1899.

The number of producing spindles reported for the carpet and rug industry for 1909 was 211,472, of which New York reported 115,390, or over one-half. A marked increase in the number of producing spindles took place between 1899 and 1904, but the number in 1909 was substantially the same as that five years earlier.

The number of woolen and cotton spindles increased during each five-year period, but that of worsted spindles decreased between 1904 and 1909. The number of mule spindles was somewhat larger and that of frame spindles somewhat smaller in 1909 than in 1904. Cotton spindles in this industry were reported from Massachusetts and New York only.

Table 72

CLASS.	NUMBER OF SPINDLES USED IN THE CARPET AND RUG INDUSTRY.					
	United States.	Connecticut.	Massachusetts.	New Jersey.	New York.	Pennsylvania.
Total:						
1909	252,096	17,176	68,380	4,852	131,154	30,534
1904	255,347	25,221	55,524	3,888	121,380	49,334
1899	209,206	22,610	50,344	3,344	89,982	42,926
Producing spindles:						
1909	211,472	13,768	53,244	3,904	115,390	25,166
1904	211,331	21,559	42,464	3,240	104,450	39,618
1899	167,123	18,004	39,388	2,480	72,568	34,683
Woolen—						
1909	97,298	1,768	12,426	1,888	65,050	16,166
1904	90,695	7,355	12,156	1,224	52,942	17,018
1899	63,836	4,780	10,164	752	26,724	21,416
Worsted—						
1909	95,046	12,000	28,722	2,016	43,308	9,000
1904	112,044	14,204	28,436	2,016	44,788	22,600
1899	97,191	13,224	27,352	1,728	41,620	13,267
Cotton—						
1909	19,128	.....	12,096	.....	7,032	.....
1904	8,592	.....	1,872	.....	6,720	.....
1899	6,096	.....	1,872	.....	4,224	.....
Mule spindles (woolen)—						
1909	94,798	1,768	12,426	1,888	62,550	16,166
1904	90,695	7,355	12,156	1,224	52,942	17,018
Frame spindles—						
1909	116,674	12,000	40,818	2,016	52,840	9,000
1904	120,636	14,204	30,308	2,016	51,508	22,600
Woolen—						
1909	2,500	.....	.....	.....	2,500	.....
1904	.....	.....	.....	.....	.....	.....
Worsted—						
1909	95,046	12,000	28,722	2,016	43,308	9,000
1904	112,044	14,204	28,436	2,016	44,788	22,600
Cotton—						
1909	19,128	.....	12,096	.....	7,032	.....
1904	8,592	.....	1,872	.....	6,720	.....
Doubling and twisting spindles:						
1909	40,624	3,408	15,136	948	15,764	5,368
1904	44,016	3,662	13,060	648	16,930	9,716
1899	42,083	4,606	10,956	864	17,414	8,243
Woolen—						
1909	2,594	.....	980	300	1,098	216
1904	1,788	142	1,090	.....	540	16
1899	3,197	.....	680	.....	1,944	573
Worsted—						
1909	31,250	3,408	10,556	648	11,486	5,152
1904	38,728	3,520	11,382	648	13,478	9,700
1899	36,658	4,606	9,688	864	13,874	7,626
Cotton—						
1909	6,780	.....	3,600	.....	3,180	.....
1904	3,500	.....	588	.....	2,912	.....
1899	2,228	.....	588	.....	1,596	44

Looms.—Table 73 gives the loom equipment of the carpet and rug mills for 1909, 1904, and 1899.

Table 73

KIND OF LOOM.	NUMBER OF LOOMS USED IN THE CARPET AND RUG INDUSTRY.		
	1909	1904	1899
Looms on carpets and rugs, total	**11,943**	**11,692**	**[1] 10,754**
Power looms	11,736	11,002	9,706
Hand looms	207	690	1,048
Carpet looms	10,032	9,691	8,416
Ingrain—			
Power	2,884	4,189	4,354
Hand	26	82	92
Broad ingrain—			
Power	788	412	246
Hand	7	42	1
Tapestry Brussels	1,016	1,207	1,094
Tapestry velvet	1,138	1,047	737
Body Brussels	636	549	544
Wilton	956	639	507
Axminster and Moquette	2,562	1,433	761
Venetian—			
Power	18	88	80
Hand	1	3	.....
Rug looms	1,911	2,001	2,338
Tapestry	526	236	3
Smyrna—			
Power	964	1,131	1,358
Hand	57	563	955
Wilton	62	71	22
Colonial or rag—			
Power	186	(2)	(2)
Hand	116	(2)	(2)

[1] In addition, in 1899, 135 power looms and 7 hand looms were employed by establishments engaged primarily in the manufacture of woolen and worsted goods.
[2] Figures not available.

There were 11,943 carpet and rug looms of all classes reported by carpet and rug mills in 1909, of which 11,736 were power looms and 207 were hand looms. In 1899 there were 9,706 power looms and 1,048 hand looms. The proportion which hand looms formed of the total number thus decreased from 9.7 per cent in 1899 to 1.7 per cent in 1909. In 1889 there were 10,898 looms, of which 2,598, or 23.8 per cent, were hand looms. The number of narrow ingrain looms decreased 34.5 per cent during the decade from 1899 to 1909, while that of broad ingrain looms increased 221.9 per cent. Tapestry velvet, body Brussels, Wilton, and Axminster and Moquette looms, notably the last-named, also show decided gains.

Table 74 gives the loom equipment of the carpet and rug mills, by states, for 1909.

As shown by the table, Pennsylvania ranked first in 1909 in the number of nearly every kind of loom, reporting a total of 5,637, or 47.2 per cent of the looms used in the carpet and rug industry in the United States. New York ranked second, with 3,238 looms, or 27.1 per cent of the total, and Massachusetts third, with 1,778, or 14.9 per cent of the total. Pennsylvania reported 77.9 per cent of all looms used in the manufacture of ingrain carpets, while New York ranked first in the number of tapestry Brussels and Axminster looms, and Massachusetts in the number of looms used on body Brussels and Wilton carpets.

Table 74

NUMBER OF LOOMS USED IN THE CARPET AND RUG INDUSTRY: 1909

KIND.	United States.	Connecticut.	Massachusetts.	New Jersey	New York.	Pennsylvania.	All other states.
Looms on carpets and rugs, total	**11,943**	**781**	**1,778**	**432**	**3 238**	**[1] 5,637**	**77**
Power looms	11,736	781	1,774	415	3,186	5,530	50
Hand looms	207	.....	4	17	52	107	27
Carpet looms	10,032	781	1,763	277	2,517	4,655	39
Ingrain—							
Power	2,884	88	225	.....	100	2,439	32
Hand	26	.....	.....	.....	20	6	.....
Broad ingrain—							
Power	788	17	259	62	11	436	3
Hand	7	.....	.....	.....	.....	7	.....
Tapestry Brussels	1,016	187	125	10	413	281	.....
Tapestry velvet	1,138	67	24	80	377	590	.....
Body Brussels	636	17	346	3	107	159	4
Wilton	956	40	444	96	56	320	.....
Axmister	2,562	365	340	26	1,433	398	.....
Venetian—							
Power	18	.....	.....	.....	.....	18	.....
Hand	1	.....	.....	.....	.....	1	.....
Rug looms	1,911	.....	15	155	721	982	38
Tapestry	526	.....	.....	37	395	93	1
Smyrna—							
Power	964	.....	.....	101	277	576	10
Hand	57	.....	.....	13	29	15	.....
Wilton	62	.....	11	.....	5	46	.....
Colonial or rag—							
Power	186	.....	.....	.....	12	174	.....
Hand	116	.....	4	4	3	78	27

[1] In addition, 328 broad looms were employed on worsted goods, not carpets and rugs.

DETAILED STATE TABLES.

The principal statistics secured by the census inquiry concerning the carpet and rug industry, other than those relating to materials, products, and equipment, are presented, by states, in Tables 75 and 76.

Table 75 shows, for 1909, 1904, and 1899, the number of establishments, number of persons engaged in the industry, primary horsepower, capital invested, salaries, wages, cost of materials, value of products, and value added by manufacture.

Table 76 gives more detailed statistics for 1909.

CARPETS AND RUGS, OTHER THAN RAG—COMPARATIVE STATISTICS, BY STATES: 1909, 1904, AND 1899.

Table 75

STATE.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY. Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).	Primary horsepower.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture (value of products less cost of materials).
								Expressed in thousands.					
United States	**1909**	**139**	**34,706**	**134**	**1,265**	**33,307**	**38,553**	**$75,627**	**$2,209**	**$15,536**	**$39,563**	**$71,188**	**$31,625**
	1904	**139**	**34,393**	**149**	**1,023**	**33,221**	**33,945**	**56,781**	**1,397**	**13,724**	**37,948**	**61,586**	**23,638**
	1899	**133**	**29,209**	**111**	**687**	**28,411**	**26,740**	**44,449**	**881**	**11,121**	**27,229**	**48,192**	**20,963**
Massachusetts	1909	11	6,251	3	294	5,954	10,037	11,450	466	2,763	7,501	12,812	5,311
	1904	10	5,267	2	86	5,179	7,875	7,905	141	2,188	6,703	9,714	3,011
	1899	8	4,552	1	71	4,480	5,875	9,401	127	1,720	3,990	6,966	2,976
New Jersey	1909	9	939	6	49	884	970	2,511	88	375	898	1,945	1,047
	1904	8	1,203	3	47	1,153	1,268	2,098	90	418	979	1,749	770
	1899	13	1,221	3	47	1,171	1,051	1,487	73	379	868	1,523	655
New York	1909	16	12,272	11	363	11,898	11,901	27,528	686	5,870	13,315	25,606	12,291
	1904	12	11,354	8	269	11,077	10,151	19,830	328	4,567	11,133	19,404	8,271
	1899	12	8,795	3	189	8,603	7,783	12,870	250	3,308	7,681	15,029	7,348
Pennsylvania	1909	93	12,078	108	460	11,510	13,073	24,721	762	5,169	14,648	24,879	10,231
	1904	102	14,356	136	504	13,716	11,871	22,284	652	5,829	16,706	27,120	10,414
	1899	93	13,358	103	336	12,919	10,537	17,958	375	5,331	13,774	23,113	9,339
All other states	1909	10	3,166	6	99	3,061	2,572	9,417	207	1,359	3,201	5,946	2,745
	1904	7	2,213	.....	117	2,096	2,780	4,664	186	722	2,427	3,599	1,172
	1899	7	1,283	1	44	1,238	1,494	2,733	56	383	916	1,561	645

CARPETS AND RUGS, OTHER THAN RAG—DETAILED STATISTICS, BY STATES: 1909.

Table 76

STATE.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY. Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks. Male.	Clerks. Female.	Wage earners. Average number.	Wage earners. Number, 15th day of— Maximum. month.	Wage earners. Number, 15th day of— Minimum. month.	WAGE EARNERS—DEC. 15, OR NEAREST REPRESENTATIVE DAY. Total.	16 and over. Male.	16 and over. Female.	Under 16. Male.	Under 16. Female.	Primary horsepower.
United States	139	34,706	134	314	801	150	33,307	De 34,097	Ap 32,719	34,874	19,601	13,859	796	618	38,553
Massachusetts	11	6,251	3	46	205	43	5,954	Fe 6,102	Ap 5,855	6,087	3,155	2,566	213	153	10,037
New Jersey	9	939	6	26	21	2	884	De 1,008	Je 779	1,008	697	294	15	2	970
New York	16	12,272	11	70	264	29	11,898	De 12,192	Ja 11,570	12,192	6,708	5,406	51	27	11,901
Pennsylvania	93	12,078	108	151	246	63	11,510	Fe 11,875	Oc 11,189	12,454	7,461	4,354	342	297	13,073
All other states [1]	10	3,166	6	21	65	13	3,061	.....	.....	3,133	1,580	1,239	175	139	2,572

STATE.	Capital.	EXPENSES. Total.	Services. Officials.	Services. Clerks.	Services. Wage earners.	Materials. Fuel and rent of power.	Materials. Other.	Miscellaneous. Rent of factory.	Miscellaneous. Taxes, including internal revenue.	Miscellaneous. Contract work.	Miscellaneous. Other.	Value of products.	Value added by manufacture (value of products less cost of materials).
United States	$75,627,010	$62,311,110	$1,144,419	$1,064,623	$15,536,050	$939,568	$38,623,436	$212,621	$281,763	$172,873	$4,335,757	$71,188,152	$31,625,148
Massachusetts	11,450,096	11,202,188	202,914	262,873	2,763,263	237,869	7,263,241	9,923	138,591	3,400	320,114	12,811,981	5,310,871
New Jersey	2,510,704	1,500,709	59,802	28,032	374,823	13,711	883,804	240	8,775	.....	131,522	1,945,217	1,047,702
New York	27,527,617	21,680,151	423,580	362,836	5,870,298	309,336	13,005,837	106,555	65,661	35,523	1,600,526	25,606,262	12,291,090
Pennsylvania	24,720,792	22,632,265	450,043	312,227	5,169,275	276,388	14,371,910	95,528	38,627	125,712	1,792,555	24,879,232	10,230,934
All other states [1]	9,417,801	5,295,797	108,080	98,655	1,358,391	102,265	3,098,644	375	30,109	8,238	491,040	5,945,460	2,744,551

[1] All other states embrace: Connecticut, 3 establishments; Indiana, 1; Maryland, 1; New Hampshire, 1; Ohio, 2; Virginia, 1; Wisconsin, 1.

THE SHODDY INDUSTRY.

GENERAL STATISTICS.

Scope of the industry.—Shoddy, as a generic term, refers to reclaimed wool and cotton fiber of any sort—that is, to the fiber obtained by passing woolen, worsted, or union rags, tailors' clippings, and all kinds of mill wastes through "pickers," which reduce them to a fibrous form so that they can be mixed with new wool and spun into yarn. Following the English custom, the term "shoddy" is applied to the fiber manufactured from waste yarn and soft fabrics, that made from hard-spun fabrics being termed "mungo," while that obtained from union or cotton-mixed fabrics by carbonizing the cotton fiber with chemicals is called "wool extract." The shoddy mills also make considerable quantities of flocks, which consists of short, refuse wool, the shearings of woolen goods, or wool dust, and is utilized to weight certain kinds of woolen cloth, to coat waterproof garments, in the surfacing of some wall papers, and for other purposes. The statistics presented in this report, except as otherwise noted, relate only to establishments manufacturing shoddy, mungo, carbonized rags, or wool extract as a primary product, including, as at previous censuses, mills engaged primarily in the cutting of flocks and the cleaning or garnetting of mill waste.

Comparison with earlier censuses.—Statistics for the shoddy industry were first obtained at the census of 1859, when 30 establishments, giving employment to an average of 290 hands, and manufacturing products to the value of $402,590, were reported. At the census of 1869, 56 establishments were reported, these establishments employing an average of 632 hands and manufacturing products to the value of $1,768,592. Table 77 summarizes the statistics of the shoddy industry for each census from 1879 to 1909, inclusive.

Table 77 THE SHODDY INDUSTRY.

	Number or amount.					Per cent of increase.[1]				
	1909	1904	1899	1889	1879	1899-1909	1904-1909	1899-1904	1889-1899	1879-1889
Number of establishments	88	97	105	94	73	−16.2	−9.3	−7.6	11.7	28.8
Persons engaged in the industry	2,320	2,371	2,167	(2)	(2)	7.1	−2.2	9.4	.....	.....
Proprietors and firm members	83	110	102	(2)	(2)	−18.6	−24.5	7.8	.....	.....
Salaried employees	196	172	130	(2)	(2)	41.0	14.0	23.7	.....	.....
Wage earners (average number)	2,041	2,089	1,926	2,155	1,282	6.0	−2.3	8.5	(3)	(3)
Primary horsepower	13,820	12,244	11,455	7,059	(2)	20.6	12.9	6.9	62.3	.....
Capital	$6,886,825	$5,804,164	$5,272,929	$3,754,063	$1,165,100	30.6	18.7	10.1	40.5	222.2
Expenses	6,656,311	7,597,483	6,083,993	(2)	(2)	9.4	−12.4	24.9	.....	.....
Services	1,196,376	1,080,225	915,652	707,099	400,326	30.7	10.8	18.0	29.5	76.6
Salaries	289,685	245,403	166,704	(2)	(2)	73.8	18.0	47.2	.....	.....
Wages	906,691	834,822	748,948	(2)	(2)	21.1	8.6	11.5	.....	.....
Materials	5,000,706	6,055,731	4,875,192	6,003,035	3,366,650	2.6	−17.4	24.2	−18.8	78.3
Miscellaneous	459,229	461,527	293,149	238,094	(2)	56.7	−0.5	57.4	23.1	.....
Value of products	7,446,364	8,406,425	6,730,974	7,887,000	4,989,615	10.6	−11.4	24.9	−14.7	58.1
Value added by manufacture (value of products less cost of materials)	2,445,658	2,350,694	1,855,782	1,883,965	1,622,965	31.8	4.0	26.7	−1.5	16.1

[1] A minus sign (−) denotes decrease. Where percentages are omitted, comparable figures are not available.
[2] Comparable figures not available.
[3] Figures not strictly comparable.

The number of establishments reporting in 1909 was smaller than at any census since 1879. The value of products in 1909 represented an increase of 49.2 per cent as compared with 1879, and a decrease of 5.6 per cent as compared with 1889. All the items included in the table, except number of establishments and of proprietors and firm members, show increases in 1909 as compared with 1899, that in the number of wage earners being 6 per cent, that in cost of materials 2.6 per cent, and that in value of products 10.6 per cent. These gains, however, were due to large increases during the first half of the decade, since decreases were reported for each of the items for the five-year period 1904–1909, that in wage earners amounting to 2.3 per cent, and that in value of products to 11.4 per cent. The value of the products of the shoddy industry in 1909 was $7,446,364, and the value added by manufacture (that is, the value of products less the cost of materials), $2,445,658, the cost of materials being equal to more than two-thirds (67.2 per cent) of the value of products.

Summary, by states.—Table 78 summarizes the more important statistics of the industry, by states, for 1909, 1904, and 1899.

Table 78

STATE.	Census.	Number of establishments.	Persons engaged in the industry. Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).	Primary horsepower.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture (value of products less cost of materials).
								Expressed in thousands.					
THE SHODDY INDUSTRY.													
United States	**1909**	**88**	**2,320**	**83**	**196**	**2,041**	**13,820**	**$6,887**	**$289**	**$907**	**$5,001**	**$7,446**	**$2,445**
	1904	97	2,371	110	172	2,089	12,244	5,804	245	835	6,056	8,406	2,350
	1899	105	2,167	102	139	1,926	11,455	5,273	167	749	4,875	6,731	1,856
Connecticut	1909	6	114	5	11	98	1,170	450	12	45	197	324	127
	1904	6	145	7	14	124	891	517	16	55	363	468	105
	1899	7	130	13	8	118	1,294	494	8	44	362	538	176
Massachusetts	1909	27	518	21	55	442	4,688	1,519	89	202	1,194	1,766	572
	1904	31	520	29	47	444	4,083	1,206	69	190	1,250	1,815	565
	1899	29	366	29	30	307	3,622	769	35	128	685	988	303
New York	1909	14	255	7	25	223	1,982	965	33	106	624	869	245
	1904	11	223	10	18	195	1,037	514	21	80	497	702	205
	1899	9	185	11	7	167	699	330	6	66	311	443	132
Ohio	1909	4	469	1	30	438	1,100	1,096	62	200	742	1,257	515
	1904	5	450	3	21	426	1,100	923	37	158	948	1,239	291
	1899	6	509	.....	35	474	1,035	1,398	55	165	1,078	1,479	401
Pennsylvania	1909	20	518	32	36	450	2,170	1,627	47	186	1,463	2,051	588
	1904	23	429	35	34	360	1,960	1,216	43	142	1,713	2,204	491
	1899	26	421	19	34	368	1,632	972	25	148	1,070	1,449	379
All other states	1909	17	446	17	39	390	2,710	1,230	46	168	781	1,179	398
	1904	21	604	26	38	540	3,173	1,428	59	210	1,285	1,978	693
	1899	28	547	30	25	492	3,173	1,310	38	198	1,369	1,834	465

In 1909 the state of Pennsylvania led in value of products, number of wage earners employed, and value added by manufacture. Massachusetts, Ohio, New York, and Connecticut followed in the order named. Pennsylvania, Massachusetts, and New York show increases in number of wage earners and value of products for the decade 1899–1909, although Massachusetts shows small decreases in both items and Pennsylvania a small decrease in value of products for the five-year period 1904–1909. Connecticut and Ohio, on the other hand, show decreases in both items for the decade as a whole, although in the case of Ohio all of the decrease took place during the five-year period 1899–1904. There was a decrease during the decade in the number of establishments in each state shown separately in Table 78, except New York.

Persons engaged in the industry.—Table 79 shows, for 1909, the number of persons engaged in the industry, classified according to occupational status and sex, and in the case of wage earners, according to age also. It should be borne in mind that the sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

The average number of persons engaged in the operation of the shoddy mills during 1909 was 2,320, of whom 2,041, or 88 per cent, were wage earners, 184, or 7.9 per cent, proprietors and officials, and 95, or 4.1 per cent, clerks, this class including other subordinate salaried employees. Of the total number of persons engaged in the industry, 1,840, or 79.3 per cent, were males and 480, or 20.7 per cent, females. Of the males, 86.7 per cent, and of the females, 92.9 per cent, were wage earners. Only two children under 16 years of age were reported as wage earners.

Table 79

CLASS.	PERSONS ENGAGED IN THE SHODDY INDUSTRY: 1909 Total.	Male.	Female.
All classes	**2,320**	**1,840**	**480**
Proprietors and officials	184	172	12
Proprietors and firm members	83	76	7
Salaried officers of corporations	48	45	3
Superintendents and managers	53	51	2
Clerks	95	73	22
Wage earners (average number)	2,041	1,595	446
16 years of age and over	2,039	1,593	446
Under 16 years of age	2	2	.....

Wage earners employed, by months.—Table 80 gives the number of wage earners employed in the shoddy industry on the 15th (or the nearest representative day) of each month during the year 1909.

Table 80

MONTH.	WAGE EARNERS EMPLOYED IN THE SHODDY INDUSTRY: 1909 Number.	Per cent of maximum.
January	1,980	91.9
February	2,025	94.0
March	2,041	94.7
April	2,010	93.3
May	2,024	93.9
June	2,040	94.7
July	2,035	94.4
August	2,003	92.9
September	2,033	94.3
October	2,070	96.1
November	2,077	96.4
December	2,155	100.0

The largest number of wage earners employed during any month of 1909 was 2,155 in December, and the smallest number 1,980 in January, the minimum number being equal to 91.9 per cent of the maximum. In 1904 the maximum number, 2,182, was shown for December, and the minimum number, 2,007, for June, the latter number being equal to 92 per cent of the former. The months of maximum and minimum employment for 1909, and the number of wage earners reported for these months, are given for the principal states in Table 89.

Prevailing hours of labor.—In Table 81 the wage earners in the shoddy industry have been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. In making this classification the average number of wage earners employed during the year in each establishment was classified as a total according to the hours prevailing in that establishment, even though a few employees worked a greater or smaller number of hours.

Table 81 — AVERAGE NUMBER OF WAGE EARNERS IN THE SHODDY INDUSTRY: 1909

STATE.	Total.	In establishments with prevailing hours—						
		48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.
United States	2,041	5	28	5	387	1,320	268	28
Connecticut	98	.....	.....	.....	.....	98	.....	.....
Massachusetts	442	.....	24	2	184	206	.....	26
New York	223	1	4	.....	30	186	.....	2
Ohio	438	.....	.....	.....	.....	170	268	.....
Pennsylvania	450	.....	.....	3	88	359	.....	.....
All other states	390	4	.....	.....	85	301	.....	.....

Of the 2,041 wage earners employed in the industry in 1909, 1,320, or 64.7 per cent, were employed in establishments where the prevailing hours were 60 per week; 387, or 19 per cent, were in establishments where the hours were between 54 and 60; and 268, or 13.1 per cent, in establishments where the hours were between 60 and 72. All the wage earners in this latter group were reported from Ohio, in which state this was the most common working time; in all the other states shown separately in the table the most common working time was 60 hours per week.

Character of ownership.—Table 82 presents statistics with respect to the character of ownership of the shoddy mills in the United States.

In 1909, of the total number of mills, 36.4 per cent were under corporate ownership, as compared with 27.8 per cent in 1904. The value of products of such establishments represented 53.3 per cent of the total for the industry in 1909, and 45.5 per cent in 1904. Establishments under firm ownership, which ranked second in importance in 1904 as measured by value of products, with more than one-third of the total, show a considerable decrease both in number and in value of products for the five-year period covered by the table, contributing only 18 per cent of the total value of products in 1909. Establishments under individual ownership, on the other hand, show a considerable increase in value of products for the five-year period, reporting 28.7 per cent of the total in 1909, as against 18.7 per cent in 1904.

Table 82 — THE SHODDY INDUSTRY.

CHARACTER OF OWNERSHIP.	Number of establishments.		Value of products.	
	1909	1904	1909	1904
Total	88	97	$7,446,364	$8,406,425
Individual	39	40	2,135,186	1,570,315
Firm	17	30	1,342,739	3,008,583
Corporation	32	27	3,968,439	3,827,527
Per cent of total	100.0	100.0	100.0	100.0
Individual	44.3	41.2	28.7	18.7
Firm	19.3	30.9	18.0	35.8
Corporation	36.4	27.8	53.3	45.5

Size of establishments.—Table 83 presents statistics for 1909 and 1904 for establishments in the shoddy industry grouped according to the value of their products.

Table 83 — THE SHODDY INDUSTRY.

VALUE OF PRODUCTS PER ESTABLISHMENT.	Number of establishments.		Value of products.	
	1909	1904	1909	1904
Total	88	97	$7,446,364	$8,406,425
Less than $5,000	18	15	48,473	36,525
$5,000 and less than $20,000	19	25	196,815	272,475
$20,000 and less than $100,000	27	29	1,403,160	1,495,369
$100,000 and over	24	28	5,797,916	6,602,056
Per cent of total	100.0	100.0	100.0	100.0
Less than $5,000	20.5	15.5	0.7	0.4
$5,000 and less than $20,000	21.6	25.8	2.6	3.2
$20,000 and less than $100,000	30.7	29.9	18.8	17.8
$100,000 and over	27.3	28.9	77.9	78.5

While establishments manufacturing products valued at over $100,000 represented only a little more than one-fourth of the total number at both censuses, they reported 77.9 per cent of the total value of products in 1909 and 78.5 per cent in 1904. None of the establishments reported products to the value of $1,000,000 in either year.

The average value of products per establishment decreased from $86,664 in 1904 to $84,618 in 1909, but the average value added by manufacture, as computed from the figures in Table 77, increased from $24,234 to $27,792. The average number of wage earners per establishment shows an increase from 21.5 in 1904 to 23.2 in 1909.

Expenses.—As stated in the Introduction, the census figures representing expenses do not purport to show the total cost of manufacture, since they take no account of interest or depreciation; hence they can not properly be used for determining profits.

Facts of interest can be brought out, however, concerning the relative importance of the different classes of expenses which were reported. Table 77 shows the total expenses in 1909 to have been $6,656,311, distributed as follows: Cost of materials, $5,000,706, or 75.1 per cent; wages, $906,691, or 13.6 per cent; salaries, $289,685, or 4.4 per cent; and miscellaneous expenses, made up of advertising, ordinary repairs of buildings and machinery, insurance, traveling expenses, and other sundry expenses, $459,229, or 6.9 per cent. There was considerable variation in the proportions represented by the different classes of expenses in the several states, the percentage for cost of materials ranging from 65.2 in Ohio to 82.7 in Pennsylvania, and that for wages from 10.5 in Pennsylvania to 17.6 in Ohio.

Engines and power.—Table 84 shows statistics of power as reported at the censuses of 1909, 1904, and 1899.

The total primary power used in the shoddy mills increased from 11,455 in 1899 to 13,820 in 1909, or 20.6 per cent. Power generated by steam engines forms the greater part of the power used in the industry, although such power represented a smaller proportion of the total primary power in 1909 than in 1904 and 1899. Water power represented about the same proportion of the total in both 1909 and 1899 (35.6 per cent and 35.5 per cent, respectively), the proportion decreasing during the first half of the decade, but increasing between 1904 and 1909.

Table 84 — THE SHODDY INDUSTRY.

POWER.	Number of engines or motors.			Horsepower.			Per cent distribution of horsepower.		
	1909	1904	1899	1909	1904	1899	1909	1904	1899
Primary power, total	164	163	155	13,820	12,244	11,455	100.0	100.0	100.0
Owned	147	155	155	13,107	11,426	11,237	94.8	93.3	98.1
Steam	80	89	90	8,135	7,825	7,123	58.9	63.9	62.2
Gas	1	.....	2	50	.....	45	0.4	.....	0.4
Water wheels	65	66	63	4,747	3,601	4,069	34.3	29.4	35.5
Water motors	1	.....	.....	175	.....	.....	1.3	.....	.....
Rented	17	8	.....	713	818	218	5.2	6.7	1.9
Electric	17	8	.....	545	417	.....	3.9	3.4	.....
Other	.....	.....	.....	168	401	218	1.2	3.3	1.9
Electric motors	42	16	3	953	618	105	100.0	100.0	100.0
Run by current generated by establishment	25	8	3	408	201	105	42.8	32.5	100.0
Run by rented power	17	8	.....	545	417	.....	57.2	67.5	.....

Fuel consumed.—Bituminous coal was the principal class of fuel used, 41,345 short tons being consumed in the industry in 1909. The total amount expended for fuel and rent of power, as shown in Table 89, was $168,398.

SPECIAL STATISTICS RELATING TO MATERIALS, PRODUCTS, AND EQUIPMENT.

Materials.—Table 85 shows statistics of the materials used in the industry for 1909, 1904, and 1899.

Table 85 — THE SHODDY INDUSTRY.

MATERIAL.	1909	1904	1899	Per cent of increase:[1] 1899–1909
Total cost	$5,000,706	$6,055,731	$4,875,192	2.6
Tailors' clippings, rags, etc.:				
Pounds	64,561,713	68,921,097	79,623,312	−18.9
Cost	$3,051,045	$4,295,641	$3,558,706	−14.3
Waste and noils of wool, mohair, camel's hair, etc.:				
Pounds	7,567,579	8,177,846	4,236,628	78.6
Cost	$917,976	$909,754	$693,072	32.3
Wool, in condition purchased:				
Pounds	237,097	597,492	422,349	−43.9
Cost	$98,032	$127,927	$127,099	−22.9
Equivalent of above in scoured condition, pounds	196,097	421,492	242,097	−19.3
Chemicals and dyestuffs	$138,241	$142,455	$111,095	24.4
All other materials	$795,412	$579,954	$384,320	107.0

[1] A minus sign (−) denotes decrease.

The total cost of materials increased 24.2 per cent from 1899 to 1904, but decreased 17.4 per cent from 1904 to 1909, the increase for the decade being 2.6 per cent. The quantity of tailors' clippings, rags, etc., used decreased from 79,623,312 pounds in 1899 to 64,561,713 pounds in 1909, or 18.9 per cent; the decrease in value was 14.3 per cent. The cost of this class of materials represented 73 per cent of the total cost of materials in 1899 and 61 per cent in 1909. The waste and noils of wool, mohair, camel's hair, etc., used in the industry show an increase of 78.6 per cent in quantity and of 32.3 per cent in value for the decade, although for the five-year period 1904–1909 there was a decrease of 7.5 per cent in consumption, the cost, however, increasing nine-tenths of 1 per cent.

Products and equipment.—Table 86 shows for 1909, 1904, and 1899 the quantity and value of the several kinds of products of the shoddy mills and the number of pickers and garnett machines employed.

Table 86 — THE SHODDY INDUSTRY.

PRODUCT.	1909	1904	1899	Per cent of increase:[1] 1899–1909
Total value	[2]$7,446,364	$8,406,425	$6,730,974	10.6
Shoddy and mungo:				
Pounds	48,375,724	54,401,205	39,014,661	24.0
Value	$5,099,260	$6,831,689	$5,388,378	5.8
Wool extract:				
Pounds	5,637,514	6,375,768	4,980,825	13.2
Value	$805,528	$727,912	$620,504	39.5
Flocks:				
Pounds	1,638,013	2,068,203	2,080,758	−21.3
Value	$107,697	$143,536	$131,894	−18.3
Waste:				
Pounds	2,237,748	42,504	1,608,470	39.1
Value	$275,545	$1,544	$148,043	86.1
All other products	$268,708	$365,805	$151,494	77.4
Receipts for work on materials for others	$229,626	$335,939	$290,661	−21.0
MACHINERY.				
Pickers, number	346	317	(3)	.....
Garnett machines, number	158	116	(3)	.....

[1] A minus sign (−) denotes decrease.
[2] In addition, shoddy to the value of $367,278 was made for sale by establishments engaged primarily in the manufacture of other products.
[3] Not reported.

The total value of the products of shoddy manufacturing establishments increased 24.9 per cent from 1899 to 1904, but decreased 11.4 per cent from 1904 to 1909, the increase for the decade being $715,390, or 10.6 per cent. The value of shoddy and mungo represented 76.5 per cent of the total for the industry in 1909 and 80.1 per cent in 1899. The output of these products shows an increase of 24 per cent, and their value an increase of 5.8 per cent, for the decade, although during the five-year period 1904–1909 there was a decrease of 11.1 per cent in quantity and 16.6 per cent in value. In the case of wool extract there was an increase of 13.2 per cent in output for the decade and of 39.5 per cent in its value; the output decreased 11.6 per cent between 1904 and 1909, however, although its value increased 18.9 per cent. The quantity and value of flocks manufactured decreased during the decade, all of the decrease, however, taking place between 1904 and 1909.

Table 87 shows, for 1909 and 1904, the total quantity of shoddy made in all mills manufacturing this product, whether for sale or for use in further manufacture.

Table 87	SHODDY PRODUCTION (POUNDS).	
	1909	1904
Total	84,500,665	127,897,263
For sale	51,555,032	57,095,269
By shoddy mills	48,375,724	54,401,295
By other establishments	3,179,308	2,693,974
For use in the same establishment	32,945,633	70,801,994
By establishments manufacturing primarily—		
Woolen goods	31,021,323	70,102,848
Worsted goods	1,045,310	256,567
Felt goods	875,000	442,079
Carpets and rugs	4,000	.....
Wool hats	.....	500

There was a decrease of 43,396,598 pounds, or 33.9 per cent, in the total production of shoddy by all industries in 1909 as compared with 1904. Of the shoddy used in 1909 in the establishments where manufactured, 94.2 per cent was made in establishments engaged primarily in the manufacture of woolen goods, the corresponding percentage for 1904 being 99. Establishments manufacturing shoddy for sale reported 44.6 per cent of the total production in 1904 and 61 per cent in 1909.

The inquiry relating to the amount of shoddy produced in woolen mills for their own use was, in some instances, answered unsatisfactorily by the manufacturers, and in such cases estimates were made. Since 41,517,552 pounds of tailors' clippings, rags, etc., were reported as consumed in the woolen industry, the quantity of shoddy reported as made in the industry (32,941,633 pounds) would appear to be approximately correct.

A feature of the development of the woolen industry during the five-year period 1904–1909 was the decrease in the amount of shoddy consumed and the increase in that of scoured wool. Table 88 shows the amount of scoured wool and shoddy used in the woolen industry, including that used in the manufacture of carpets and rugs, in 1909, 1904, and 1899, and the proportion which each represented of the combined total.

Table 88	SCOURED WOOL AND SHODDY USED IN WOOL MANUFACTURES.					
MATERIAL.	1909		1904		1899	
	Quantity (pounds).	Per cent of total.	Quantity (pounds).	Per cent of total.	Quantity (pounds).	Per cent of total.
Total	410,301,795	100.0	388,778,668	100.0	310,128,960	100.0
Scoured wool	352,478,605	85.9	282,194,618	72.6	238,632,452	76.9
Shoddy	57,823,190	14.1	106,584,050	27.4	71,496,508	23.1
Purchased	24,877,557	6.1	35,782,056	9.2	34,496,508	11.1
Made in establishments using	32,945,633	8.0	70,801,994	18.2	37,000,000	11.9

During the five-year period 1899–1904 there was an increase in the value of products of the woolen goods branch of the industry, in which shoddy is used as material to a considerable extent, this fact being reflected not only in the increase during that five-year period in the consumption of shoddy, as shown in the table, but in the increase in the proportion which it represented of the total consumption of scoured wool and shoddy combined. Between 1904 and 1909, however, the woolen goods branch of the industry declined, while the worsted goods branch, in which shoddy is used to only a slight extent, made a phenomenal gain, with the result that the consumption of shoddy fell off from 106,584,050 pounds in 1904 to 57,823,190 pounds in 1909, or 45.7 per cent, while the proportion which it represented of the combined total decreased from 27.4 per cent to 14.1 per cent.

Detailed state table.—The principal statistics secured by the census inquiry concerning the shoddy industry are presented, by states, in Table 89, which gives detailed statistics for 1909 only.

SHODDY—DETAILED STATISTICS, BY STATES: 1909.

Table 89

STATE.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY. Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks. Male.	Clerks. Female.	Wage earners. Average number.	Wage earners. Number, 15th day of— Maximum month.	Wage earners. Number, 15th day of— Minimum month.	WAGE EARNERS—DEC. 15, OR NEAREST REPRESENTATIVE DAY. Total.	16 and over. Male.	16 and over. Female.	Under 16. Male.	Under 16. Female.	Primary horsepower.
United States	88	2,320	83	101	73	22	2,041	De 2,155	Ja 1,980	2,186	1,706	478	2	.....	13,820
Connecticut	6	114	5	5	6	.....	98	De 107	Se 88	106	97	9	.....	.....	1,170
Massachusetts	27	518	21	34	14	7	442	Fe [1] 460	Se 422	474	414	58	2	.....	4,688
New York	14	255	7	18	5	2	223	No [1] 255	Ja [1] 189	255	213	42	.....	.....	1,982
Ohio	4	469	1	12	16	2	438	Mh [1] 442	Au 432	441	302	139	.....	.....	1,100
Pennsylvania	20	518	32	14	15	7	450	De 462	Ja 432	466	353	113	.....	.....	2,170
All other states [2]	17	446	17	18	17	4	390	.....	.....	444	327	117	.....	.....	2,710

STATE.	Capital.	EXPENSES. Total.	Services. Officials.	Services. Clerks.	Services. Wage earners.	Materials. Fuel and rent of power.	Materials. Other.	Miscellaneous. Rent of factory.	Miscellaneous. Taxes, including internal revenue.	Miscellaneous. Contract work.	Miscellaneous. Other.	Value of products.	Value added by manufacture (value of products less cost of materials).
United States	$6,886,825	$6,656,311	$182,993	$106,692	$906,691	$168,398	$4,832,308	$18,947	$40,763	$3,581	$395,938	$7,446,364	$2,445,658
Connecticut	450,459	267,170	5,760	5,970	45,305	9,049	188,151	150	1,781	.....	11,004	324,251	127,051
Massachusetts	1,518,773	1,608,530	64,031	24,665	202,252	51,814	1,141,587	4,436	12,597	669	106,479	1,765,609	572,208
New York	965,363	806,326	27,919	5,346	106,293	17,178	606,808	3,240	3,596	.....	35,946	869,364	245,378
Ohio	1,095,562	1,137,725	32,700	29,679	199,770	26,710	714,934	.....	10,761	.....	123,171	1,257,173	515,529
Pennsylvania	1,627,096	1,770,058	26,626	20,413	185,740	30,633	1,432,585	6,868	6,086	2,912	58,195	2,051,118	587,900
All other states [2]	1,229,572	1,066,502	25,957	20,619	167,331	33,014	748,243	4,253	5,942	.....	61,143	1,178,849	397,592

[1] Same number reported for one or more other months.
[2] All other states embrace: California, 1 establishment; Georgia, 1; Illinois, 1; Maine, 1; New Jersey, 5; North Carolina, 1; Rhode Island, 3; Tennessee, 1; Vermont, 2; and Wisconsin, 1.

WOOL PULLING AND WOOL SCOURING.

WOOL PULLING.

This industry includes establishments pulling wool, on contract, from pelts owned by others, and reporting as value of products only the amount received for work done, as well as establishments that buy the pelts and report their cost under cost of materials, and the value of the wool and skins under value of products. Variations in the relative importance of these two classes of establishments render it impracticable to make any significant comparisons of cost of materials and value of products for different censuses. Table 90 summarizes the statistics for the industry, that is, for the independent wool pulling establishments, for 1909, 1904, and 1899.

Table 90 — WOOL-PULLING INDUSTRY.

	Number or amount.			Per cent of increase.[1]		
	1909	1904	1899	1899–1909	1904–1909	1899–1904
Number of establishments	37	34	34	8.8	8.8	.....
Persons engaged in the industry	759	786	541	40.3	−3.4	45.3
Proprietors and firm members	37	40	31	19.4	−7.5	29.0
Salaried employees	91	65	35	160.0	40.0	85.7
Wage earners (average number)	631	681	475	32.8	−7.3	43.4
Primary horsepower	1,366	1,324	820	66.6	3.2	61.5
Capital	$3,247,928	$2,534,029	$944,715	243.8	28.2	168.2
Expenses	4,876,919	671,549	384,742	1,167.6	626.2	74.5
Services	518,511	439,169	283,372	83.0	18.1	55.0
Salaries	131,596	74,415	35,422	271.5	76.8	110.1
Wages	386,915	364,754	247,950	56.0	6.1	47.1
Materials	4,103,250	103,984	53,975	(2)	(2)	(2)
Miscellaneous	255,158	128,396	47,395	438.4	98.7	170.9
Value of products	5,180,856	881,706	531,287	(2)	(2)	(2)
Value added by manufacture (value of products less cost of materials)	1,077,606	777,722	477,312	125.8	38.6	62.9

[1] A minus sign (−) denotes decrease. [2] Figures not comparable.

Large quantities of wool are pulled in slaughtering and meat-packing establishments, which in 1909 reported 21,858,926 pounds, and tanning establishments, including those tanning leather for their own use, which reported 8,218,363 pounds in 1909.

WOOL SCOURING.

Wool scouring is now, and always has been, in this country, chiefly done in the mills. The independent scouring plants are a recent development.

Table 91 summarizes the statistics of the wool-scouring industry (that is, of the independent establishments engaged in wool scouring) for 1909, 1904, and 1899. The statistics for such establishments were not segregated prior to 1899.

Table 91 — WOOL-SCOURING INDUSTRY.

	Number or amount.			Per cent of increase.[1]		
	1909	1904	1899	1899–1909	1904–1909	1899–1904
Number of establishments	28	27	25	12.0	3.7	8.0
Persons engaged in the industry	1,262	852	776	62.6	48.1	9.8
Proprietors and firm members	18	18	11	63.6	.....	63.6
Salaried employees	102	55	45	126.7	85.5	22.2
Wage earners (average number)	1,142	779	720	58.6	46.6	8.2
Primary horsepower	6,782	3,478	2,900	133.9	95.1	19.9
Capital	$3,257,585	$1,187,716	$1,061,123	207.0	174.3	11.9
Expenses	2,967,331	839,284	706,482	320.0	253.6	18.8
Services	700,364	475,505	410,617	70.6	47.3	15.8
Salaries	142,646	77,694	72,011	98.1	83.6	7.9
Wages	557,718	397,811	338,606	64.7	40.2	17.5
Materials	2,122,102	214,624	193,826	(2)	(2)	(2)
Miscellaneous	144,865	149,155	102,039	42.0	−2.9	46.2
Value of products	3,289,215	1,052,909	889,809	(2)	(2)	(2)
Value added by manufacture (value of products less cost of materials)	1,167,113	838,285	695,983	67.7	39.2	20.4

[1] A minus sign (−) denotes decrease. [2] Figures not comparable.

The number of establishments engaged primarily in wool scouring increased only 12 per cent during the decade 1899–1909, though the average number of wage earners increased 58.6 per cent. In some cases the wool scoured is owned by the establishment and its cost is included in the cost of materials and its value in the value of products; in other cases, when the work is done under contract, the value of products represents only the amount received for work done on materials furnished by others. The statistics for 1909, in particular, cover a number of cases where the raw wool was purchased, and consequently the statistics for cost of materials and value of products as reported at the different censuses are not comparable. Statistics for the quantity of wool scoured by the independent establishments in 1909 are not available. The total quantity of scoured wool used in the textile industries was approximately 352,000,000 pounds, but the bulk of this was scoured in the establishments where it was used.

HATS, FUR-FELT

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Table 3 — CLASS.	PERSONS ENGAGED IN THE INDUSTRY: 1909 — Total.	Male.	Female.
All classes	**27,091**	**19,572**	**7,519**
Proprietors and officials	777	735	42
Proprietors and firm members	264	258	6
Salaried officers of corporations	137	136	1
Superintendents and managers	376	341	35
Clerks	1,250	1,022	228
Wage earners (average number)	25,064	17,815	7,249
16 years of age and over	24,533	17,526	7,007
Under 16 years of age	531	289	242

The average number of persons engaged in the fur-felt hat industry during 1909 was 27,091, of whom 25,064, or 92.5 per cent, were wage earners. Of the total number, 72.2 per cent were males and 27.8 per cent females. The average number of wage earners under 16 years of age was only 531, or 2.1 per cent of the total number of wage earners.

The average number of wage earners for each state, as reported at the censuses of 1909, 1904, and 1899, is given in Table 17. The distribution of the average number by sex and age is not shown for the individual states, but Table 18 gives such a distribution for the number employed on December 15, or the nearest representative day. Female wage earners were reported from all states in which the industry was located except three—Iowa, Michigan, and Mississippi.

Table 4 shows the average number of wage earners in the industry distributed according to age, and in the case of those 16 years of age and over, according to sex, for 1909, 1904, and 1899. There was little change in the distribution of the employees of the industry from census to census.

Table 4 — CLASS.	AVERAGE NUMBER OF WAGE EARNERS IN THE INDUSTRY. 1909 — Number.	1909 — Per cent distribution.	1904 — Number.	1904 — Per cent distribution.	1899 — Number.	1899 — Per cent distribution.
Total	**25,064**	**100.0**	**22,047**	**100.0**	**18,880**	**100.0**
16 years of age and over	24,533	97.9	21,598	98.0	18,623	98.6
Male	17,526	69.9	15,432	70.0	13,187	69.8
Female	7,007	28.0	6,166	28.0	5,436	28.8
Under 16 years of age	531	2.1	449	2.0	257	1.4

Wage earners employed, by months.—Table 5 gives the number of wage earners employed in the industry on the 15th (or the nearest representative day) of each month during the year 1909 for the five states in which an average of over 500 wage earners were employed during the year.

Table 5 — STATE.	WAGE EARNERS EMPLOYED IN THE INDUSTRY: 1909[1] — Average number during the year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
United States	**25,064**	**25,987**	**19,394**	**20,391**	**20,590**	**21,075**	**24,538**	**26,676**	**27,588**	**28,216**	**28,276**	**28,972**	**29,062**
Connecticut	5,217	5,880	*1,940*	2,188	2,283	2,472	5,330	6,856	7,109	7,289	7,266	7,045	6,941
Massachusetts	2,224	2,091	2,394	2,539	2,172	2,270	2,198	2,144	2,125	2,262	2,268	*2,065*	2,157
New Jersey	4,657	5,490	*2,860*	3,118	3,606	3,958	4,253	4,798	5,149	5,166	5,206	6,101	**6,186**
New York	5,013	4,587	*4,548*	4,790	4,735	4,710	4,868	5,009	5,232	5,407	5,411	**5,461**	5,396
Pennsylvania	7,220	7,229	*6,936*	7,026	7,072	6,956	7,169	7,163	7,250	7,361	7,358	7,521	**7,599**

[1] The month of maximum employment for each state is indicated by boldface figures and that of minimum employment by italic figures.

The largest number of wage earners employed in the industry during any month was 29,062, in December, and the smallest number 19,394, in February, the minimum number being equal to 66.7 per cent of the maximum. The statistics shown in Table 5 do not represent normal conditions because of an important strike which affected a large number of establishments in Connecticut and New Jersey. In Connecticut the strike lasted from January 16 to the middle of June, and in New Jersey for a somewhat longer period. In 1904 the maximum number, 22,840, was reported for September, and the minimum number, 20,879, for May. The minimum thus was equal to 91.4 per cent of the maximum, showing a much narrower range of variation than in 1909.

The months of maximum and minimum employment for 1909, and the number of wage earners reported for these months, are given for the principal states in Table 18.

Prevailing hours of labor.—In Table 6 the wage earners in the industry as a whole have been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. In making this classification the average number of wage earners employed during the year in each establishment was classified as a total according to the hours prevailing in that establishment, even though a few employees worked a greater or smaller number of hours.

Table 6 — STATE.	AVERAGE NUMBER OF WAGE EARNERS: 1909 — Total.	In establishments with prevailing hours— 48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.
United States	**25,064**	**2,182**	**7,985**	**5,163**	**8,957**	**773**	**4**
Connecticut	5,217	588	3,016	22	1,468	123	.....
Massachusetts	2,224	83	.....	20	2,121	.....	.....
New Jersey	4,657	619	3,295	108	366	269	.....
New York	5,013	672	1,060	36	3,236	9	.....
Pennsylvania	7,220	65	370	4,919	1,533	333	.....

Most of the wage earners were employed in establishments where the prevailing hours were more than 48 but less than 60. There was considerable diversity among the several states in the prevailing time of employment.

Character of ownership.—Table 7 presents data with respect to the character of ownership of the establishments in the industry for 1909 and 1904.

In 1909, of the total number of establishments, 38.1 per cent were under corporate ownership, as compared with 25.9 per cent in 1904. In 1909 the value of products of these establishments represented 66 per cent of the total, and in 1904, 55.1 per cent.

Table 7

CHARACTER OF OWNERSHIP.	NUMBER OF ESTABLISHMENTS.		VALUE OF PRODUCTS.	
	1909	1904	1909	1904
Total	273	216	$47,864,630	$36,629,353
Individual	108	92	5,679,082	4,418,694
Firm	61	68	10,578,321	12,028,079
Corporation	104	56	31,607,227	20,182,580
Per cent of total	100.0	100.0	100.0	100.0
Individual	39.6	42.6	11.9	12.1
Firm	22.3	31.5	22.1	32.8
Corporation	38.1	25.9	66.0	55.1

Table 8 gives statistics for the establishments in the industry classified according to form of ownership, by states.

Table 8

STATE.	NUMBER OF ESTABLISHMENTS OWNED BY—			WAGE EARNERS IN ESTABLISHMENTS OWNED BY—			VALUE OF PRODUCTS OF ESTABLISHMENTS OWNED BY—			VALUE ADDED BY MANUFACTURE IN ESTABLISHMENTS OWNED BY—		
	Individuals.	Firms.	Corporations.	Individuals.	Firms.	Corporations.	Individuals.	Firms.	Corporations.	Individuals.	Firms.	Corporations.
United States	108	61	104	2,672	4,995	17,397	$5,679,082	$10,578,321	$31,607,227	$2,778,486	5,406,625	$17,570,288
Connecticut	20	16	44	248	1,034	3,035	531,682	2,120,383	7,747,795	223,714	1,112,795	4,214,368
Massachusetts	3	3	5	20	478	1,726	43,879	823,654	2,878,340	20,041	421,915	1,372,015
New Jersey	22	14	22	719	1,308	2,630	1,210,551	2,801,454	4,813,212	655,535	1,541,420	2,516,694
New York	24	9	11	423	641	3,049	1,558,550	1,630,879	7,029,231	559,556	852,768	3,400,071
Pennsylvania	17	12	9	1,166	1,262	4,792	2,039,559	2,674,955	8,308,103	1,139,637	1,163,918	5,706,292

In 1909, of the total number of wage earners reported for the industry, 2,672, or 10.7 per cent, were employed in establishments under individual ownership; 4,995, or 19.9 per cent, in those under firm ownership; and 17,397, or 69.4 per cent, in those owned by corporations.

Size of establishment.—Table 9 presents statistics for 1909 and 1904 for establishments in the fur-felt hat industry grouped according to the value of their products.

In 1909 only six establishments manufactured products valued at $1,000,000 or over, but they reported 35 per cent of the total value of products for all establishments.

The average value of products per establishment increased from $169,580 in 1904 to $175,328 in 1909, but the average value added by manufacture, as computed from the figures in Table 1, decreased slightly, from $95,621 to $94,342; the average number of wage earners per establishment also shows a decrease from 102 in 1904 to 92 in 1909.

Table 9

VALUE OF PRODUCTS PER ESTABLISHMENT.	NUMBER OF ESTABLISHMENTS.		VALUE OF PRODUCTS.	
	1909	1904	1909	1904
Total	273	216	$47,864,630	$36,629,353
Less than $5,000	35	18	104,234	61,337
$5,000 and less than $20,000	63	61	695,573	655,316
$20,000 and less than $100,000	78	60	3,639,413	3,291,900
$100,000 and less than $1,000,000	91	71	26,673,802	21,389,673
$1,000,000 and over	6	6	16,751,608	11,231,127
Per cent of total	100.0	100.0	100.0	100.0
Less than $5,000	12.8	8.3	0.2	0.2
$5,000 and less than $20,000	23.1	28.2	1.5	1.8
$20,000 and less than $100,000	28.6	27.8	7.6	9.0
$100,000 and less than $1,000,000	33.3	32.9	55.7	58.4
$1,000,000 and over	2.2	2.8	35.0	30.7

Table 10 gives, for 1909, a classification of establishments according to the number of wage earners employed, for the industry as a whole and for the leading states.

Table 10

STATE.	TOTAL.		ESTABLISHMENTS EMPLOYING IN 1909—																
			No wage earners.	1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
	Establishments.	Wage earners (average number).	Establishments.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.
United States	273	25,064	12	71	200	56	687	47	1,597	32	2,224	31	4,600	19	6,579	2	1,102	3	8,075
Connecticut	80	5,217	2	17	47	12	172	17	629	13	884	14	1,983	5	1,502	.....	.....	.....	.....
Massachusetts	11	2,224	.....	2	3	2	31	.....	.....	4	234	1	176	1	386	.....	.....	1	1,394
New Jersey	58	4,657	1	11	37	8	88	12	436	10	746	11	1,549	4	1,226	1	575	.....	.....
New York	44	5,013	4	13	37	8	109	9	257	4	279	.....	.....	4	1,521	1	527	1	2,283
Pennsylvania	38	7,220	2	7	12	13	145	6	191	1	81	3	449	5	1,944	.....	.....	1	4,398

Of the total number of wage earners, 18.8 per cent were reported by establishments employing from 1 to 100, 44.6 per cent by establishments employing from 101 to 500, and 36.6 per cent by establishments employing more than 500 wage earners. There were only 24 establishments that employed more than 250 wage earners, 3 of which employed over 1,000.

Expenses.—As stated in the Introduction, the census figures for expenses do not purport to represent the total cost of manufacture, since they take no account of interest or depreciation.

Table 1 shows the total expenses reported for 1909 to have been $41,847,651, distributed as follows: Cost of materials, $22,109,231, or 52.8 per cent; wages, $14,223,192, or 34 per cent; salaries, $2,096,689, or 5 per cent; and miscellaneous expenses, made up of taxes, rent of factory or works, advertising, ordinary repairs of buildings and machinery, insurance, traveling expenses, and other sundry expenses, $3,418,539, or 8.2 per cent.

Engines and power.—Table 11 shows that the total amount of primary power used in the industry increased from 11,843 horsepower in 1899 to 19,245 in 1909, or 62.5 per cent. Steam and rented electric power are the leading kinds of primary power used.

Table 11 POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.			PER CENT DISTRIBUTION OF HORSEPOWER.		
	1909	1904	1899	1909	1904	1899	1909	1904	1899
Primary power, total	**483**	**251**	**147**	**19,245**	**16,630**	**11,843**	**100.0**	**100.0**	**100.0**
Owned	185	213	147	16,845	15,987	11,633	87.5	96.1	98.2
Steam	175	203	143	16,653	15,871	11,570	86.5	95.4	97.7
Gas	8	5	3	147	48	38	0.8	0.3	0.3
Water wheels	2	3	1	20	65	25	0.1	0.4	0.2
Water motors	.....	2	(1)	.....	3	(1)	.....	(2)	.....
Other	.....	.....	.....	25	.....	.....	0.1	.....	.....
Rented	298	38	(1)	2,400	643	210	12.5	3.9	1.8
Electric	298	38	(1)	2,172	369	79	11.3	2.2	0.7
Other	.....	.....	.....	228	274	131	1.2	1.7	1.1
Electric motors	**834**	**340**	**30**	**6,186**	**2,434**	**861**	**100.0**	**100.0**	**100.0**
Run by current generated by establishment	536	302	30	4,014	2,065	782	64.9	84.8	90.8
Run by rented power	298	38	(1)	2,172	369	79	35.1	15.2	9.2

[1] Not reported. [2] Less than one-tenth of 1 per cent.

Table 12 presents for 1909 statistics of the power and fuel used in the leading states.

Table 12 STATE.	PRIMARY HORSEPOWER.									ELECTRIC HORSEPOWER.		FUEL USED.					
	Number of establishments reporting.	Total horsepower.	Owned by establishments reporting.					Rented.		Total, rented and generated by establishment.	Generated in the establishment reporting.	Coal.		Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Electric.	Other.			Anthracite (long tons).	Bituminous (short tons).				
United States	**208**	**19,245**	**16,845**	**16,653**	**147**	**20**	**25**	**2,172**	**228**	**6,186**	**4,014**	**62,704**	**103,370**	**117**	**31**	**257**	**43,772**
Connecticut	68	5,619	4,589	4,464	100	.....	25	988	42	1,333	345	1,499	33,162	39	6	169	8,478
Massachusetts	9	1,149	1,125	1,125	.....	.....	.....	24	.....	274	250	30	33,773	.....	.....	.....	1,168
New Jersey	43	5,046	4,609	4,582	15	12	.....	392	45	986	594	29,097	8,902	.....	15	1	16,350
New York	30	1,451	1,114	1,110	4	.....	.....	252	85	314	62	4,465	7,790	.....	9	.....	5,525
Pennsylvania	31	5,335	4,951	4,925	18	8	.....	343	41	2,924	2,581	27,526	13,608	.....	.....	85	7,624
All other states	27	645	457	447	10	.....	.....	173	15	355	182	87	6,135	78	1	2	4,627

The total horsepower reported for the three leading states (Connecticut, Pennsylvania, and New Jersey) in 1909 was 16,000, and formed 83.1 per cent of the total for the United States. In every state steam was the most important form of power.

Fuel consumed.—Bituminous coal was the principal class of fuel used, 103,370 short tons being consumed during 1909. Anthracite coal was the fuel second in importance in the industry, the total amount used being 62,704 long tons.

SPECIAL STATISTICS REGARDING MATERIALS AND PRODUCTS.

Materials.—Table 13 presents statistics as to the materials used in the industry for 1909, 1904, and 1899, and shows also the percentage of increase from 1899 to 1909.

The total cost of the materials used by establishments in the fur-felt hat industry in 1909 was $22,109,231, as compared with $15,975,206 in 1904 and $13,513,668 in 1899, representing a gain of $8,595,563, or 63.6 per cent, for the decade. These totals involve some duplication due to the use of the products of one establishment, especially hat bodies and hats in the rough, as materials for another. Hatters' fur is the principal material used, and its cost formed 42 per cent of the total cost of materials in 1909 and 47.2 per cent in 1899. The quantity reported for 1909 was 40.2 per cent greater than that for 1899. The number of fur-felt hat bodies and hats in the rough purchased increased 174.2 per cent during the decade. The cost of "all other materials," amounting to $9,411,474 in 1909, includes the cost of leather bands, bindings, hat wires, and other trimmings, as well as of the cases required for packing and shipping the products.

Table 13	MATERIALS.			
	1909	1904	1899	Per cent of increase: 1899–1909
Total cost	$22,109,231	$15,975,206	$13,513,668	63.6
Hatters' fur:				
Pounds	8,645,576	6,718,359	6,166,269	40.2
Cost	$9,278,922	$6,743,936	$6,376,991	45.5
Fur-felt hat bodies and hats in the rough:				
Dozens	406,447	211,760	148,212	174.2
Cost	$2,575,248	$1,351,372	$882,936	191.7
Chemicals and dyestuffs	$843,587	$1,140,281	$656,794	28.4
All other materials	$9,411,474	$6,739,617	$5,596,897	68.2

Table 14 shows, for the principal states in the industry, the quantity of hatters' fur and of hat bodies and hats in the rough used in 1909, 1904, and 1899, together with their cost and that of all other materials for 1909.

Table 14	MATERIALS.			
MATERIAL AND STATE.	Quantity.			Cost: 1909
	1909	1904	1899	
	Pounds.	*Pounds.*	*Pounds.*	
Total				$22,109,231
Hatters' fur	8,645,576	6,718,359	6,166,269	9,278,922
Connecticut	1,673,332	1,385,325	1,499,767	1,909,915
Massachusetts	1,047,438	547,484	456,593	766,956
New Jersey	1,817,020	1,880,510	1,897,113	2,115,407
New York	1,883,207	1,503,680	1,281,452	1,860,052
Pennsylvania	1,976,118	1,227,951	817,311	2,420,635
All other states	248,461	113,409	214,033	205,957
	Dozens.	*Dozens.*	*Dozens.*	
Fur-felt hat bodies and hats in the rough	406,447	211,760	148,212	2,575,248
Connecticut	87,117	30,783	61,726	491,161
Illinois	12,993	6,640		121,850
Massachusetts	29,979	3,289	29,338	181,135
New Jersey	29,156	40,992	22,711	153,215
New York	194,268	92,984	24,620	1,250,824
Pennsylvania	26,984	23,512	5,045	175,642
All other states	25,950	13,560	4,772	201,421
All other materials				10,255,061

Products.—Table 15 gives the quantity and value of the products of the fur-felt hat industry in 1909, 1904, and 1899, and the percentage of increase from 1899 to 1909.

Fur-felt hats or bodies and hats in the rough to the value of $806,601 were manufactured during 1909 by establishments engaged chiefly in the production of straw hats, woolen goods, and millinery and lace goods.

Table 15	PRODUCTS.			
	1909	1904	1899	Per cent of increase: 1899–1909
Total value	[1] $47,864,630	[1] $36,629,353	$27,811,187	72.1
Fur-felt hats:				
Dozens	2,989,252	2,611,875	1,882,372	58.8
Value	$43,442,466	$34,314,234	$25,385,506	71.1
Fur-felt hat bodies and hats in the rough:				
Dozens	366,370	88,986	165,010	122.0
Value	$2,703,738	$660,959	$992,730	172.4
All other products, value	$1,164,872	$1,093,361	$941,032	23.8
Work on materials for others	$553,554	$560,799	$491,919	12.5

[1] In addition, fur-felt hats, to the value of $806,601 in 1909, and to the value of $333,441 in 1904, were made by establishments engaged primarily in the manufacture of products other than those covered by the industry designation.

The value of products of establishments in the fur-felt hat industry increased 72.1 per cent between 1899 and 1909. The number of finished hats increased 1,106,880 dozens, or 58.8 per cent, during the decade, while their value increased $18,056,960, or 71.1 per cent. The increase in output was greater from 1899 to 1904 than during the next five years. From 1899 to 1904 there was a decrease in the production of hat bodies and hats to be sold in the rough, but there was a great increase from 1904 to 1909.

Table 16 shows the output of the principal products for 1909, 1904, and 1899, and the value for 1909, for the principal states.

Table 16	PRODUCTS.			
PRODUCT AND STATE.	Quantity (dozens).			Value: 1909
	1909	1904	1899	
Total				$47,864,630
Fur-felt hats	2,989,252	2,611,875	1,882,372	43,442,466
Connecticut	530,558	600,312	497,683	7,858,882
Illinois	13,286			255,331
Massachusetts	320,587	234,792	227,032	3,544,067
New Jersey	579,596	676,906	590,939	8,121,205
New York	776,258	631,374	226,061	9,465,282
Pennsylvania	668,696	413,506	280,880	12,943,334
All other states	100,271	54,985	59,777	1,254,365
Fur-felt hat bodies and hats in the rough	366,370	88,986	165,010	2,703,738
Connecticut	335,947	63,676	153,188	2,407,044
All other states	30,423	25,310	11,822	296,694
All other products, including custom work				1,718,426

DETAILED STATE TABLES.

The principal data secured by the census inquiry concerning the manufacture of fur-felt hats are presented by states in Tables 17 and 18.

Table 17 shows for 1909, 1904, and 1899 the number of establishments, number of persons engaged in the industry, primary horsepower, capital invested, salaries, wages, cost of materials, value of products, and value added by manufacture.

Table 18 gives more detailed statistics for the industry for 1909 only.

HATS, FUR-FELT—COMPARATIVE STATISTICS, BY STATES: 1909, 1904, 1899.

Table 17

STATE.	Census.	Number of establishments.	Persons engaged in industry. Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).	Primary horsepower.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture (value of products less cost of materials).
								Expressed in thousands.					
United States	**1909**	**273**	**27,091**	**264**	**1,763**	**25,064**	**19,245**	**$35,734**	**$2,097**	**$14,223**	**$22,109**	**$47,865**	**$25,756**
	1904	**216**	**23,666**	**252**	**1,367**	**22,047**	**16,630**	**23,258**	**1,488**	**11,282**	**15,975**	**36,629**	**20,654**
	1899	**171**	**19,814**	**208**	**726**	**18,880**	**11,843**	**16,701**	**944**	**9,119**	**13,514**	**27,811**	**14,297**
Connecticut	1909	80	5,877	59	601	5,217	5,619	7,144	574	3,384	4,849	10,400	5,551
	1904	56	5,664	57	449	5,158	3,729	3,352	427	2,696	3,954	8,663	4,709
	1899	58	5,126	85	173	4,868	3,370	3,198	173	2,415	3,686	7,547	3,861
Illinois	1909	10	123	9	15	99	20	70	12	71	155	287	132
	1904	5	49	4	8	37	14	45	7	24	54	106	52
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts	1909	11	2,341	10	107	2,224	1,149	2,262	147	990	1,932	3,746	1,814
	1904	6	1,664	9	69	1,586	1,180	1,845	93	627	1,125	2,316	1,191
	1899	11	1,895	18	54	1,823	855	1,468	56	791	1,390	2,631	1,241
New Jersey	1909	58	5,104	63	384	4,657	5,046	5,335	478	2,969	4,112	8,825	4,713
	1904	63	6 078	81	292	5.705	5,016	4.331	318	3.276	4,227	9.540	5 313
	1899	59	4,965	66	154	4,745	3,709	2,932	186	2,487	3,637	7,211	3,574
New York	1909	44	5,379	47	319	5,013	1,451	5,702	393	2,725	5,406	10,219	4,813
	1904	43	4,684	52	235	4,397	3,487	4,441	264	2,309	3,478	7,740	4,262
	1899	15	4,280	12	135	4,133	1,840	3,050	224	2,079	2,607	5,602	2,995
Pennsylvania	1909	38	7,537	46	271	7,220	5,335	14,439	423	3,725	5,013	13,023	8,010
	1904	25	4,931	29	283	4,619	2,745	8,778	346	2,122	2,729	7,350	4,621
	1899	20	3,092	22	180	2,890	1,737	5,726	270	1,187	1,867	4,243	2,376
All other states	1909	32	730	30	66	634	625	782	70	359	642	1,365	723
	1904	18	596	20	31	545	459	466	33	228	408	914	506
	1899	8	456	5	30	421	332	327	35	160	327	577	250

HATS, FUR-FELT—DETAILED STATISTICS, BY STATES: 1909.

Table 18

STATE.	Number of establishments.	Persons engaged in industry. Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks. Male.	Clerks. Female.	Wage earners. Average number.	Wage earners. Number, 15th day of— Maximum month.		Wage earners. Number, 15th day of— Minimum month.		Wage earners—Dec. 15, or nearest representative day. Total.	16 and over. Male.	16 and over. Female.	Under 16. Male.	Under 16. Female.	Primary horsepower.
United States	**273**	**27,091**	**264**	**513**	**1,022**	**228**	**25,064**	**De**	**29,062**	**Fe**	**19,394**	**30,292**	**21,182**	**8,468**	**349**	**293**	**19,245**
Connecticut	80	5,877	59	170	343	88	5,217	Se	7,289	Fe	1,940	7,656	5,373	2,231	42	10	5,619
Illinois	10	123	9	1	11	3	99	De	111	Jy	93	111	61	50	.....	.....	20
Massachusetts	11	2,341	10	35	43	29	2,224	Mh	2,539	No	2,065	2,497	1,503	963	22	9	1,149
Missouri	4	41	3	2	2	2	32	Je [1]	34	Ja [1]	29	29	15	14	.....	.....	4
New Jersey	58	5,104	63	148	202	34	4,657	De	6,186	Fe	2,860	6,296	4,889	1,304	49	54	5,046
New York	44	5,379	47	74	202	43	5,013	No	5,461	Fe	4,548	5,417	3,597	1,777	21	22	1,451
Pennsylvania	38	7,537	46	67	183	21	7,220	De	7,599	Fe	6,936	7,643	5,313	1,934	203	193	5,335
Wisconsin	3	8	1	2	.....	.....	5	Oc [1]	8	Ja [1]	4	7	3	4	.....	.....	9
All other states [2]	25	681	26	14	36	8	597	.....		.....		636	428	191	12	5	612

STATE.	Capital.	Expenses. Total.	Services. Officials.	Services. Clerks.	Services. Wage earners.	Materials. Fuel and rent of power.	Materials. Other.	Miscellaneous. Rent of factory.	Miscellaneous. Taxes, including internal revenue.	Miscellaneous. Contract work.	Miscellaneous. Other.	Value of products.	Value added by manufacture (value of products less cost of materials).
United States	**$35,733,594**	**$41,847,651**	**$1,069,007**	**$1,027,682**	**$14,223,192**	**$651,632**	**$21,457,599**	**$184,065**	**$102,508**	**$326,697**	**$2,805,269**	**$47,864,630**	**$25,755,399**
Connecticut	7,143,713	9,395,203	297,723	276,613	3,384,364	175,076	4,673,907	42,689	21,796	28,013	495,022	10,399,860	5,550,877
Illinois	70,007	250,898	1,560	10,650	70,990	1,774	153,163	9,732	227	.....	2,802	286,721	131,784
Massachusetts	2,261,684	3,356,205	95,028	51,665	990,107	44,698	1,887,204	15,370	8,468	20,748	242,917	3,745,873	1,813,971
Missouri	29,042	58,353	2,500	1,820	14,740	1,544	20,084	6,900	135	.....	10,630	76,554	54,926
New Jersey	5,335,313	8,184,099	275,836	202,093	2,969,230	149,633	3,961,935	26,086	20,736	108,469	470,081	8,825,217	4,713,649
New York	5,702,386	9,620,859	161,713	230,948	2,725,118	107,491	5,298,774	49,709	17,832	163,464	875,810	10,218,660	4,812,395
Pennsylvania	14,438,611	9,877,996	204,902	217,814	3,724,699	150,930	4,861,840	18,233	30,492	15,753	653,333	13,022,617	8,009,847
Wisconsin	9,678	9,330	825	.....	3,608	216	3,507	696	12	.....	466	11,741	8,018
All other states [2]	743,160	1,094,708	28,920	36,079	340,336	20,270	597,185	14,650	2,810	250	54,208	1,277,387	659,932

[1] Same number reported for one or more other months.

[2] All other states embrace: California, 2 establishments; Delaware, 1; Indiana, 1; Iowa, 1; Kentucky, 2; Maine, 1; Maryland, 1; Michigan, 1; Minnesota, 3; Mississippi, 1; Nebraska, 1; New Hampshire, 1; Ohio, 3; Oklahoma, 1; Oregon, 1; Rhode Island, 2; Texas, 1; West Virginia, 1.

SILK MANUFACTURES

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SILK MANUFACTURES.

GENERAL STATISTICS.

Scope of the industry.—The silk manufacturing industry, according to the classification adopted for the presentation of the statistics of manufactures at the census of 1909, includes two classes of establishments, as follows: (1) Establishments manufacturing finished silk products, such as woven fabrics, braids, and trimmings, sewing, embroidery, and wash silks, machine twist, and fringe and floss silks; and (2) establishments manufacturing silk yarn, known technically as organzine, tram, and spun silk.[1] The concerns engaged only in the manufacture of organzine and tram are known as throwsters and winders, the latter performing the work of winding the threads on skeins and spools after they have been washed free from the gum which encases the raw fibers. In most cases it has not been deemed necessary to give separate statistics regarding the two branches of the industry, and except where otherwise stated the tables in this report present statistics only for the industry as a whole. The statistics for the industry do not cover the general manufacture of silk hosiery and knit goods, since establishments engaged primarily in such manufactures are included with the hosiery and knit goods industry. The total value of silk hosiery and knit underwear produced in all industries, so far as these figures are available, is, however, presented in Table 28.

Summary for the industry: 1909.—Table 1 presents a summary of the statistics for the silk manufacturing industry as a whole for 1909.

Few establishments include the entire process of silk manufacture in their operations, almost three-fourths of the total quantity of organzine and tram reported for 1909 being thrown under contract by independent throwsters. Although the establishments engaged solely in throwing, winding, etc., formed more than one-fifth of the total number of establishments in the industry and employed almost one-sixth of the total number of wage earners, they reported only 5.2 per cent of the total cost of materials and 6.5 per cent of the total value of products. This is due to the fact that the establishments operating on a commission basis did not include the value of the silk thrown, which belonged to the establishments for which the work is done, the cost of materials for the establishment throwing the silk consisting of the cost of mill supplies, fuel, etc., and the value of products mainly represents the amount received for the work performed. The establishment for which the throwing was done reported the cost of the thrown silk in its cost of materials and the amount paid for throwing as contract work under miscellaneous expenses.

[1] Organzine and tram constitute respectively the warp and the weft of silk fabrics, and are made from the best grades of the raw material by the process of throwing (doubling, twisting, and winding the filaments into yarn). Spun silk is produced by spinning, in much the same manner as wool fabrics are spun, the short-fibered silk from pierced cocoons or from waste silk of any sort which can not be thrown in the usual manner.

Table 1 — SILK MANUFACTURING INDUSTRY.

	Total.	Establishments engaged primarily in— Manufacturing finished silk products.	Throwing, winding, etc., only (throwsters).	Per cent of total. Finished silk products.	Throwsters.
Number of establishments	852	660	192	77.5	22.5
Persons engaged in the industry	105,238	88,567	16,671	84.2	15.8
Proprietors and firm members	664	536	128	80.7	19.3
Salaried employees	5,537	4,958	579	89.5	10.5
Wage earners (average number)	99,037	83,073	15,964	83.9	16.1
Primary horsepower	97,947	(1)	(1)	.....	.....
Capital	$152,158,002	$137,555,737	$14,602,265	90.4	9.6
Expenses	177,175,719	165,880,356	11,295,363	93.6	6.4
Services	46,097,364	41,409,408	4,687,956	89.8	10.2
Salaries	7,527,279	6,771,262	756,017	90.0	10.0
Wages	38,570,085	34,638,146	3,931,939	89.8	10.2
Materials	107,766,916	102,177,570	5,589,346	94.8	5.2
Miscellaneous	23,311,439	22,293,378	1,018,061	95.6	4.4
Contract work	12,008,744	11,726,868	281,876	97.7	2.3
All other	11,302,695	10,566,510	736,185	93.5	6.5
Value of products	196,911,667	184,099,555	12,812,112	93.5	6.5
Value added by manufacture (value of products less cost of materials)	89,144,751	81,921,985	7,222,766	91.9	8.1

[1] Figures not available.

NOTE.—The 852 establishments comprise 468 corporations, the officers of which are included under salaried employees. Proprietors and firm members pertain to individual and firm establishments (see Table 16).

Wages paid in dyeing, printing, finishing, embossing, etc., by establishments outside of the classified silk industry are reported elsewhere and appear here largely in the value of materials (see Table 3). Contract work is chiefly labor expended upon materials in other mills, and value added by manufacture does not include value added to materials by establishments elsewhere reported (see Tables 4 and 6).

For duplications in value of products see Tables 4 and 6, and for value of products used in other industries, Table 25.

Table 2 shows another classification of the two branches of the industry, for mills manufacturing the finished products and for plants reporting as engaged exclusively in throwing, winding, etc.

Table 2

CLASS.	Number of establishments.	Wage earners (average number).	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Total	852	99,037	$38,570,085	$107,766,916	$196,911,667	$89,144,751
Mills making finished products	637	81,391	34,023,194	99,679,000	179,765,675	80,086,675
Mills doing throwing, winding, etc.	215	17,646	4,546,891	8,087,916	17,145,992	9,058,076

The silk goods constituting the final products of the industry are to a considerable extent dyed and finished in establishments included in the industry designated "dyeing and finishing textiles," and a comprehensive view of the silk manufacturing industry should cover also such dyeing and finishing of silk goods in independent dyeing and finishing establishments. It is not possible, however, to give complete statistics on this subject, as the returns of the independent dyeing and finishing establishments do not in all cases indicate the kind of goods treated; of the 426 establishments included under the industry "dyeing and finishing textiles," however, the returns show 69 to have been engaged primarily in the dyeing and finishing of silk goods, and the principal statistics for these establishments are summarized in Table 3.

Table 3	Independent dyeing and finishing establishments engaged primarily in dyeing and finishing silk goods.
Number of establishments	69
Persons engaged in the industry	8,860
Proprietors and firm members	39
Salaried employees	514
Wage earners (average number)	8,307
Primary horsepower	13,067
Capital	$17,336,210
Expenses	12,273,237
Services	5,400,120
Salaries	1,045,760
Wages	4,354,360
Materials	5,814,716
Miscellaneous	1,058,401
Value of products	13,970,978
Value added by manufacture (value of products less cost of materials)	8,156,262

The figures for expenses for the silk manufacturing industry as a whole involve considerable duplication. The figures for miscellaneous expenses shown in Table 1 include $12,008,744, representing payments for contract work, a large part of which was made to other establishments in the industry for throwing organzine and tram or dyeing and finishing silk goods for the establishments reporting the payments. The establishments to which these payments were made, on the other hand, paid out the greater part of the amounts thus received for wages, materials, and other expenses, thus occasioning a duplication in the total expenses reported for the industry. Similarly, the establishments doing throwing or dyeing and finishing under contract reported the amounts received for this work in their value of products, while the cost of such contract work is one of the elements entering into the value of products of the establishments for which the work was done, so that a duplication thus arises in the total value of products for the industry as a whole.

It is impossible to determine the exact amount of duplication arising from the causes mentioned, since no segregation can be made between the amounts reported as received for contract work by establishments within the industry and the receipts for work done for merchants and for establishments in other industries, and no segregation can be made between the two classes of receipts. It is believed, however, that the amounts received for contract work from concerns not engaged in the silk manufacturing industry were comparatively small, so that the total amount reported as received for contract work by establishments within the industry ($8,364,350, of which $6,745,261 was reported by throwsters or by weaving mills also doing contract throwing) would represent approximately the amount of duplication in expenses and value of products resulting from this factor, although the actual duplication might be somewhat less. The difference ($3,644,394) between payments and receipts for contract work within the industry would then represent the payments for such work to establishments outside the industry.

Duplication also arises in the cost of materials and value of products for this industry from the fact that some establishments within the industry sell partly manufactured products, such as organzine, tram, spun silk, and fringe and floss, to other establishments in the industry for use as materials in further manufacturing processes. The value of such products is, of course, included in the value of products of the establishments reporting them, and also enters into the value of products of the establishments using them as materials, while the cost of the materials from which they were made constitutes part of the cost of materials of the establishment manufacturing them, and also enters into the cost of materials of the establishments using these products as materials for further manufacture. As the total amount of this class of products reported as purchased for use as materials exceeds the amount reported as sold, the value of the latter ($15,055,625) may be assumed to represent approximately the amount of duplication in the total value of products for the industry, although, as some of these products were sold to concerns outside the industry, the actual amount of duplication was less; the error, however, is comparatively small. The actual duplication in cost of materials was somewhat less than the figure just given, which includes the value added to the raw materials by manufacture in the establishments transforming them into the partly manufactured products, but it is impossible to determine the exact amount, as no segregation can be made in the returns between the materials entering into these products and those on which all the manufacturing processes to which they were subjected within the industry were performed in the same establishment. At the same time it should be noted that the amount obtained by subtracting the figure given above from the total cost of materials for the industry is more significant than that which would be obtained by merely eliminating the actual duplication, for the reason that it more nearly represents the original cost of the materials transformed by the manufacturing processes performed within the industry.

The extent to which the duplications referred to affect the value of products for the industry is brought out by Table 4, which shows the total value of products, the approximate amount of duplication arising from the causes mentioned, and the net value of products, eliminating the duplication.

Table 4	VALUE OF PRODUCTS OF SILK MANUFACTURING INDUSTRY: 1909	
	Amount.	Per cent of total.
Total value of products	$196,911,667	100.0
Duplications	23,419,975	11.9
Resulting from sale of partly finished products to other establishments in the industry for use as materials	15,055,625	7.6
Organzine and tram	12,550,510	6.4
Spun silk	2,104,066	1.1
Fringe and floss	401,049	0.2
Resulting from contract work	8,364,350	4.3
Net value of products	173,491,692	88.1

Comparison with earlier censuses.—Table 5 summarizes the statistics of the industry as a whole for each census from 1869 to 1909, inclusive. The financial figures for 1869 are given in currency, which at that time was worth only about 80 cents, gold, to the dollar. For strict comparison, therefore, these figures should be reduced about 20 per cent.

Statistics for the silk manufacturing industry were first obtained at the census of 1849, when 67 establishments, employing an average of 1,723 hands, and manufacturing products valued at $1,809,476, were reported. At the census of 1859, 139 establishments were reported, giving employment to an average of 5,435 hands, and manufacturing products valued at $6,607,771. The figures for 1869 include those for establishments that reported silk hose and silk knit goods as their products of chief value, while such establishments are now classified under the hosiery and knit goods industry. As the business of such establishments was comparatively small in volume, this inclusion does not materially affect the comparability of the figures for the different censuses.

Table 5	SILK MANUFACTURING INDUSTRY.											
	Number or amount.						Per cent of increase.[1]					
	1909	1904	1899	1889	1879	1869	1899-1909	1904-1909	1899-1904	1889-1899	1879-1889	1869-1879
Number of establishments	852	624	483	472	382	86	76.4	36.5	29.2	2.3	23.6	344.2
Persons engaged in the industry	105,238	84,153	68,550	(2)	(2)	(2)	53.5	25.1	22.8	.....	.....	.....
Proprietors and firm members	664	525	477	(2)	(2)	(2)	39.2	26.5	10.1	.....	.....	.....
Salaried employees	5,537	4,027	2,657	(2)	(2)	(2)	108.4	37.5	51.6	.....	.....	.....
Wage earners (average number)	99,037	79,601	65,416	49,382	31,337	6,649	51.4	24.4	21.7	(3)	(3)	(3)
Primary horsepower	97,947	71,760	57,397	29,638	8,810	1,911	70.6	36.5	25.0	93.7	236.4	361.0
Capital	$152,158,002	$109,556,621	$81,082,201	$51,007,537	$19,125,300	$6,231,130	87.7	38.9	35.1	59.0	166.7	206.9
Expenses	177,175,710	121,424,178	96,787,419	74,944,366	(2)	(2)	83.1	45.9	25.5	29.1	.....	.....
Services	46,097,364	31,510,213	24,116,546	19,680,318	9,146,705	1,942,286	91.1	46.3	30.7	22.5	115.2	370.9
Salaries	7,527,279	4,742,270	3,134,352	(2)	(2)	(2)	140.2	58.7	51.3	.....	.....	.....
Wages	38,570,085	26,767,943	20,982,194	(2)	(2)	(2)	83.3	44.1	27.6	.....	.....	.....
Materials	107,766,916	75,861,188	62,406,665	51,004,425	22,467,701	7,817,559	72.7	42.1	21.6	22.4	127.0	187.4
Miscellaneous	23,311,439	14,052,777	10,264,208	4,259,623	(2)	(2)	127.1	65.9	36.9	141.0	.....	.....
Value of products	196,911,667	133,288,072	107,256,258	87,298,454	41,033,045	12,210,662	83.6	47.7	24.3	22.9	112.8	236.0
Value added by manufacture (value of products less cost of materials)	89,144,751	57,426,884	44,849,593	36,294,029	18,565,344	4,393,103	98.8	55.2	28.0	23.6	95.5	322.6

[1] Where percentages are omitted, comparable figures are not available. [2] Comparable figures not available. [3] Figures not strictly comparable.

NOTE.—See note to Table 1.

Almost ten times as many establishments and almost fifteen times as many wage earners were reported for the silk manufacturing industry in 1909 as in 1869, while the value of products in the later year was more than sixteen times as great, and the value added by manufacture more than twenty times as great as that reported forty years previous. The percentages of increase in the two items first mentioned were actually even greater than those based on the figures in the table, owing to the fact, already noted, that the financial figures for 1869 were reported in a depreciated currency. The greatest relative growth took place during the first half of the period, the value of products more than trebling during the decade 1869–1879 and more than doubling during the following decade.

The development of the industry during the decade 1899–1909 was much more rapid than during the preceding decade, the number of establishments increasing 76.4 per cent, the number of wage earners 51.4 per cent, and the value of products 83.6 per cent. For practically every item shown in the table the increase was greater during the second half of the decade than during the first, nearly three-fourths of the total increase in value of products between 1899 and 1909 taking place during the five-year period 1904–1909.

In making comparisons between the value of products, cost of materials, and certain other items, as reported for the different censuses, account should be taken of the fact, already mentioned, that these items contain more or less duplication, the extent of which varied at different censuses. As shown by Table 4, the duplication in value of products for 1909 was approximately $23,419,475, or 11.9 per cent of the total value of products for the industry. At prior censuses the method employed in estimating duplications in cost of materials and value of products ("materials

and products twice included") differed to some extent from that by which the figures presented in Table 4 were obtained, being as follows:

(1) The cost of organzine and tram reported as materials and the value of that reported as products were deducted from the cost of materials and value of products, respectively. (2) The value of the spun silk reported as a product was deducted both from the cost of materials and the value of products. (3) The cost of fringe and floss reported as materials was deducted both from the cost of materials and the value of products. (4) The amount received for contract work was deducted from the value of products.

Table 6 shows for each census from 1889 to 1909, inclusive, the total cost of materials and value of products, as reported, the cost of materials and value of products twice included, as determined by the above method, and the net cost of materials and value of products, eliminating these duplications.

The value of products in 1909, exclusive of duplications, differs somewhat from the net value of products shown in Table 4, on account of the fact that the cost of all fringe and floss purchased was treated as duplication in Table 6, instead of the value of that sold by the mills within the industry.

The relative duplication in cost of materials and value of products has not varied to any great extent at the last three censuses. Between 1889 and 1899, however, it appears to have decreased considerably, possibly indicating that during this decade there was a tendency to concentrate all the processes of manufacture in the same establishment.

Table 6

	SILK MANUFACTURING INDUSTRY.			
	1909	1904	1899	1889
MATERIALS.				
Total cost, as reported	$107,766,916	$75,861,188	$62,406,665	$51,004,425
Cost of materials twice included	18,420,972	16,400,231	11,840,267	15,537,520
Per cent of total	17.1	21.3	19.0	30.5
Cost of materials, exclusive of duplication	89,345,944	59,460,957	50,566,398	35,466,905
Per cent of increase over preceding census	50.3	17.6	42.6	.....
PRODUCTS.				
Total value, as reported	196,911,667	133,288,072	107,256,258	87,298,454
Value of products twice included	24,656,113	14,754,512	14,805,046	18,143,855
Per cent of total	12.5	11.1	13.8	20.8
Value of products, exclusive of duplications	172,255,554	118,533,560	92,451,212	69,154,599
Per cent of increase over preceding census	45.3	28.2	33.7	.....

Summary, by states.—Table 7 summarizes the more important statistics of the industry as a whole, by states, the states being arranged according to the value of products reported for 1909. Some states for which data can not be shown separately ranked higher than some named in the table.

Table 7

STATE.	SILK MANUFACTURING INDUSTRY.																						
	Number of establishments: 1909	Wage earners.				Value of products.				Value added by manufacture.				Per cent of increase.[1]									
		Average number: 1909	Per cent of total: 1909	Rank.		Amount: 1909	Per cent of total: 1909	Rank.		Amount: 1909	Per cent of total: 1909	Rank.		Wage earners (average number).			Value of products.			Value added by manufacture.			
				1909	1904			1909	1904			1909	1904	1899-1909	1904-1909	1899-1904	1899-1909	1904-1909	1899-1904	1899-1909	1904-1909	1899-1904	
United States.	852	99,037	100.0	.....	.....	$196,911,667	100.0	.....	.....	$89,144,751	100.0	.....	.....	51.4	24.4	21.7	83.6	47.7	24.3	98.8	55.2	28.0	
New Jersey	348	30,285	30.6	2	2	65,429,550	33.2	1	1	32,164,373	36.1	1	1	25.4	18.9	5.5	63.7	52.6	7.2	75.4	56.7	11.9	
Pennsylvania	226	36,469	36.8	1	1	62,061,302	31.5	2	2	26,895,731	30.2	2	2	73.4	35.5	28.0	99.7	57.8	26.6	140.4	78.5	34.7	
New York	170	12,903	13.0	3	3	26,518,821	13.5	3	3	12,570,232	14.1	3	3	64.1	14.4	43.5	108.7	31.4	58.8	104.9	29.7	57.9	
Connecticut	47	8,703	8.8	4	4	21,062,687	10.7	4	4	9,228,342	10.4	4	4	33.6	11.7	19.6	70.2	34.8	26.2	78.1	41.4	26.0	
Massachusetts	19	4,109	4.1	5	5	8,942,246	4.5	5	5	3,512,395	3.9	5	5	32.1	26.0	4.9	50.1	27.5	17.7	64.6	23.0	33.8	
Rhode Island	13	1,685	1.7	6	6	4,584,431	2.3	6	6	1,396,746	1.6	6	6	270.3	30.5	183.7	249.6	79.3	95.0	183.7	62.3	74.8	
Virginia	7	819	0.8	8	8	1,543,723	0.8	8	8	532,830	0.6	8	8	73.2	.....	.....	57.3	.....	.....	104.0	.....	.....	
Maryland	4	655	0.7	10	14	511,968	0.3	12	13	275,339	0.3	12	14	.....	274.3	.....	.....	87.5	.....	.....	169.6	.....	
Delaware	3	218	0.2	13	12	255,434	0.1	14	11	103,913	0.1	14	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
All other states	15	3,191	3.2	.....	.....	6,001,505	3.0	.....	.....	2,464,850	2.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

[1] Percentages are based on figures in Table 39. Percentage not shown where comparative figures can not be given without disclosing individual operations.

The silk manufacturing industry is confined to 17 states, all of which, with the exception of California, which reported three establishments, are located east of the Mississippi River, while 16 establishments, located in Maryland, Virginia, North Carolina, and Georgia, represent the extent of the industry in the southern states. New Jersey is the most important state in the industry, ranking first at the censuses of 1909 and 1904 in value of products, with about one-third (33.2 per cent) of the total for the United States, and in value added by manufacture, but second at both censuses in the number of wage earners. The number of wage earners employed in the silk manufacturing industry of the state increased 25.4 per cent during the decade ending with 1909, and the value of products increased 63.7 per cent. Pennsylvania, which ranked second in value of products, showed larger relative gains from 1899 to 1909 than New Jersey in all three items for which the percentages of increase are given in the table, and outranked the latter state at the censuses of 1909 and 1904 in the number of wage earners employed. This latter condition is caused by the fact that many establishments in Pennsylvania are engaged in throwing raw silk into

organzine and tram for use in establishments outside the state, and since these establishments confine their operations for the most part to contract work, their value of products does not include the value of the organzine and tram produced, but consists mainly of the amount received for work done. New Jersey and Pennsylvania together reported about two-thirds of the total number of wage earners and total value of products for the industry in 1909. New York ranked third in number of wage earners, value of products, and value added by manufacture in 1909 and 1904. Rhode Island, while not an important state in the industry as measured by value of products, shows the largest percentages of increase from 1899 to 1909 of any of the states for which figures are given in the table, the gain in the number of wage earners being 270.3 per cent, that in value of products 249.6 per cent, and that in value added by manufacture 183.4 per cent.

In general, the states held the same or nearly the same rank in respect to number of wage earners, value of products, and value added by manufacture, in 1909 as in 1904, and all of the states had the same rank in value added by manufacture in 1909 as in value of products.

Table 8 shows, for the six leading states for 1909, the total cost of materials and value of products as reported, the amount of duplication in these items, and the cost of materials and value of products less duplications.

Table 8	SILK MANUFACTURING INDUSTRY: 1909					
	Connecticut.	Massachusetts.	New Jersey.	New York.	Pennsylvania.	Rhode Island.
MATERIALS.						
Total cost, as reported	$11,834,345	$5,429,851	$33,265,177	$13,948,589	$35,165,571	$3,187,685
Cost of materials twice included	$2,080,543	$696,154	$4,907,124	$2,394,415	$7,644,809	$303,618
Per cent of total	17.6	12.8	14.8	17.2	21.7	9.5
Cost of materials, exclusive of duplication	$9,753,802	$4,733,697	$28,358,053	$11,554,174	$27,520,762	$2,884,067
PRODUCTS.						
Total value, as reported	$21,062,687	$8,942,246	$65,429,550	$26,518,821	$62,061,302	$4,584,431
Value of products twice included	$2,835,491	$752,814	$3,684,260	$2,883,141	$12,006,069	$155,394
Per cent of total	13.5	8.4	5.6	10.9	19.3	3.4
Value of products, exclusive of duplication	$18,227,196	$8,189,432	$61,745,290	$23,635,680	$50,055,233	$4,429,037

In many instances the partially manufactured products of one state go to another state to be completed; hence, in some states, the gross value of products may be a better indication of the magnitude of the industry than the value less products twice included. The gross value of the products of Pennsylvania, $62,061,302, is relatively much nearer the total value of its silk manufactures than the value less products twice included, $50,055,233, because a considerable portion of the silk thrown by independent throwsters in Pennsylvania (three-fifths of the total for the United States) does not appear in the value of products for that state, but is used as materials in other states, where it becomes a part of the total value of the finished products.

PERSONS ENGAGED IN THE INDUSTRY.

Summary: 1909.—Table 9 shows, for 1909, the number of persons engaged in the industry as a whole, classified according to occupational status and sex, and in the case of wage earners according to age also. It should be borne in mind that the sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

The average number of persons engaged in the silk manufacturing industry during 1909 was 105,238, of whom 99,037, or 94.1 per cent, were wage earners, 2,236, or 2.1 per cent, proprietors and officials, and 3,965, or 3.8 per cent, were clerks, this class including subordinate salaried employees. Of the total number 63,022, or 59.9 per cent, were females, of whom 62,015, or 98.4 per cent, were wage earners. The number of female wage earners represented 62.6 per cent of the total number of wage earners in the industry, and the number of children under 16 years of age (7,878) represented 8 per cent, more than two-thirds of the latter (69.5 per cent) being girls.

Table 9 CLASS.	PERSONS ENGAGED IN THE SILK MANUFACTURING INDUSTRY: 1909		
	Total.	Male.	Female.
All classes	105,238	42,216	63,022
Proprietors and officials	2,236	2,134	102
Proprietors and firm members	664	638	26
Salaried officers of corporations	480	469	11
Superintendents and managers	1,092	1,027	65
Clerks	3,965	3,060	905
Wage earners (average number)	99,037	37,022	62,015
16 years of age and over	91,159	34,620	56,539
Under 16 years of age	7,878	2,402	5,476

In connection with these figures it may be noted that in 1869 children represented 20.8 per cent of the total number of operatives engaged in the industry, most of them being employed as spinners and winders, while the census of 1909 shows a tendency to eliminate children as wage earners, most of those reported being employed in the throwing of organzine and tram.

In order to compare the distribution of the persons engaged in the industry according to occupational status in 1909 with that in 1904 it is necessary to use

the classification employed at the earlier census. (See Introduction.) Such a comparison is made in Table 10.

Table 10	PERSONS ENGAGED IN THE SILK MANUFACTURING INDUSTRY.				
CLASS.	1909		1904		Per cent of increase: 1904–1909
	Number.	Per cent distribution.	Number.	Per cent distribution.	
Total	105,238	100.0	84,153	100.0	25.1
Proprietors and firm members	664	0.6	525	0.6	26.5
Salaried employees	5,537	5.3	4,027	4.8	37.5
Wage earners (average number)	99,037	94.1	79,601	94.6	24.4

Table 11 shows the average number of wage earners in the silk manufacturing industry, distributed according to age, and in the case of those 16 years of age and over, according to sex, for 1909, 1904, and 1899.

Table 11	AVERAGE NUMBER OF WAGE EARNERS IN THE SILK MANUFACTURING INDUSTRY.					
CLASS.	1909		1904		1899	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total	99,037	100.0	79,601	100.0	65,416	100.0
16 years of age and over	91,159	92.0	72,235	90.7	59,003	90.2
Male	34,620	35.0	27,037	34.0	24,206	37.0
Female	56,539	57.0	45,198	56.8	34,797	53.2
Under 16 years of age	7,878	8.0	7,366	9.3	6,413	9.8

The average number of wage earners in each state in 1909, 1904, and 1899 is given in Table 39. The distribution of the average number by sex and age is not shown for the individual states, but Table 40 gives such a distribution of the number employed on December 15, 1909, or the nearest representative day. Female wage earners were reported from all the states in which the industry was carried on, and in every case exceeded the males in number. The largest number, 25,940, or 40.5 per cent of the total for the industry in the United States, was reported for Pennsylvania, and the next largest number, 17,316, for New Jersey. The four leading states, as measured by value of products, New Jersey, Pennsylvania, New York, and Connecticut, together employed 56,636 female wage earners, or almost nine-tenths (88.4 per cent) of the total number for the United States. Wage earners under 16 years of age were reported from 15 states; the largest number, 5,140, were in Pennsylvania, in which state they represented 13.8 per cent of the total number of wage earners in the industry. Of the states shown in Table 40, the proportion of children employed was highest in Maryland, where they represented 28.2 per cent of the total number of wage earners in the industry, and lowest in New York, where they constituted 2.5 per cent.

Wage earners classified according to nature of employment.—Table 12 shows for the United States as a whole, for 1909 and 1904, and for selected states for 1909, the distribution by age, and in the case of those 16 years of age and over by sex also, of spinners, weavers, and all other wage earners. It should be noted that the absolute figures for the two censuses are not strictly comparable, owing to the fact that the numbers shown for 1904 are computed averages for the entire year, while those for 1909 are the numbers reported for December 15, or the nearest representative day. The difference between the number of wage earners on this day and the average number for the year 1909, however, was only 3,332, or 3.3 per cent of the total; and since there is little variation in the proportion of the different classes of employees, the figures representing the per cent distribution may be taken as fairly comparable.

While the number of weavers increased between 1904 and 1909, there was a decrease in the proportion which they represented of the total number of wage earners employed. Female weavers outnumbered the males in the weaving of broad silks, while in the weaving of ribbons, velvets, and plushes, men predominated.

The total number of spinners, including winders, warpers, etc., increased from 33,514 in 1904 to 49,700 in 1909, or 48.3 per cent, the number of adult males increasing 57.7 per cent, the number of adult females 51.5 per cent, and the number of children 24.2 per cent.

The relative number of spinners and weavers varied considerably in the different states. In only one of the five states shown separately in the table (New Jersey) did the number of weavers exceed the number of spinners. In Massachusetts, 58.7 per cent of the wage earners were spinners, while in Connecticut such operators constituted only 32.8 per cent of the total. Of the total male wage earners 16 years of age or over in 1909, somewhat more than one-half (53 per cent) were weavers and about one-third (31.1 per cent) spinners, the proportion of weavers having decreased somewhat during the decade 1899–1909, while the proportion of spinners increased slightly. In the case of women wage earners, the proportions are practically reversed, about one-third (33.3 per cent) of the total number being weavers and more than one-half (54.9 per cent) spinners; comparatively little change in the percentages took place during the decade. Of the children somewhat more than three-fourths (79.3 per cent) were spinners.

Table 12

STATE, CLASS, AND YEAR.	WAGE EARNERS EMPLOYED IN THE SILK MANUFACTURING INDUSTRY.[1] Total.	16 years and over. Male.	16 years and over. Female.	Under 16 years.
UNITED STATES.				
Wage earners—				
1909	102,369	35,785	58,441	8,143
1904	79,601	27,037	45,198	7,366
Weavers:				
1909	39,413	18,980	19,484	949
1904	32,989	15,942	16,555	492
Broad silk—				
1909	28,319	12,560	15,218	541
1904	23,276	9,619	13,264	393
Ribbons—				
1909	7,916	4,870	2,690	356
1904	6,274	4,398	1,828	47
Velvet and plush—				
1909	963	672	291	.....
1904	738	554	183	1
All other—				
1909	2,215	878	1,285	52
1904	2,702	1,371	1,280	51
Spinners (including winders, warpers, etc.):				
1909	49,700	11,146	32,093	6,461
1904	33,514	7,067	21,245	5,202
All other:				
1909	13,256	5,859	6,864	733
1904	13,098	4,028	7,398	1,672
Per cent of total:				
Weavers—				
1909	38.5	53.0	33.3	11.7
1904	41.4	59.0	36.6	6.7
Broad silk—				
1909	27.7	35.1	26.0	6.6
1904	29.2	35.6	29.3	5.3
Ribbon—				
1909	7.7	13.6	4.6	4.4
1904	7.9	16.3	4.0	0.0
Velvet and plush—				
1909	0.9	1.9	0.5	.....
1904	0.9	2.0	0.4	(2)
All other—				
1909	2.2	2.4	2.2	0.6
1904	3.4	5.1	2.8	0.7
Spinners (including winders, warpers, etc.)—				
1909	48.5	31.1	54.9	79.3
1904	42.1	26.1	47.0	70.6
UNITED STATES—continued.				
Per cent of total—Continued.				
All other—				
1909	12.9	15.8	11.7	9.0
1904	16.5	14.9	16.4	22.7
SELECTED STATES 1909.				
Connecticut	9,295	4,283	4,614	399
Weavers	2,890	1,575	1,197	118
Spinners	3,051	590	2,388	73
All others	3,355	2,118	1,029	208
Per cent of total	100.0	100.0	100.0	100.0
Weavers	31.1	36.8	25.9	29.6
Spinners	32.8	13.8	51.8	18.3
All other	36.1	49.5	22.3	52.1
Massachusetts	4,370	1,293	2,607	470
Weavers	1,346	558	756	32
Spinners	2,564	615	1,548	401
All other	460	120	303	37
Per cent of total	100.0	100.0	100.0	100.0
Weavers	30.8	43.2	29.0	6.8
Spinners	58.7	47.6	59.4	85.3
All other	10.5	9.3	11.6	7.9
New Jersey	31,342	13,628	16,585	1,129
Weavers	15,444	8,715	6,649	80
Spinners	13,876	4,108	8,842	926
All other	2,022	805	1,094	123
Per cent of total	100.0	100.0	100.0	100.0
Weavers	49.3	63.9	40.1	7.1
Spinners	44.3	30.1	53.3	82.0
All other	6.5	5.9	6.6	10.9
New York	13,231	4,641	8,255	335
Weavers	4,360	2,248	2,084	28
Spinners	5,666	1,436	3,982	188
All other	3,265	957	2,189	119
Per cent of total	100.0	100.0	100.0	100.0
Weavers	33.0	48.4	25.2	8.4
Spinners	42.4	30.9	48.2	56.1
All other	24.7	20.6	26.5	35.5
Pennsylvania	37,290	9,772	22,378	5,140
Weavers	12,993	4,791	7,745	457
Spinners	21,188	3,684	13,179	4,325
All other	3,109	1,297	1,454	358
Per cent of total	100.0	100.0	100.0	100.0
Weavers	34.8	49.0	34.6	8.9
Spinners	56.8	37.7	58.9	84.1
All other	8.3	13.3	6.5	7.0

[1] For 1909 the figures are those reported for December 15, or the nearest representative day for 1904 the average number given. [2] Less than one-tenth of 1 per cent.

Table 13 shows for the United States as a whole, for 1909, 1904, and 1899, and for certain important states in the industry for 1909 only, the percentage of men, women, and children, respectively, in the total number of wage earners and in each of the three classes for which statistics are presented in Table 12.

Table 13

CLASS.	WAGE EARNERS EMPLOYED IN THE SILK MANUFACTURING INDUSTRY—PER CENT OF TOTAL. 16 years and over. Male.	16 years and over. Female.	Under 16 years.
UNITED STATES.			
All wage earners—			
1909	35.0	57.1	8.0
1904	34.0	56.8	9.3
1899	37.0	53.2	9.8
Weavers—			
1909	48.2	49.4	2.4
1904	48.3	50.2	1.5
1899	52.8	44.8	2.3
Spinners—			
1909	22.4	64.6	13.0
1904	21.1	63.4	15.5
1899	23.1	61.4	15.6
All other—			
1909	42.7	51.8	5.5
1904	30.8	56.5	12.8
1899	33.4	49.1	17.5
SELECTED STATES, 1909.			
Connecticut—			
All wage earners	46.1	49.6	4.3
Weavers	54.5	41.4	4.1
Spinners	19.3	78.3	2.4
All other	63.1	30.7	6.2
SELECTED STATES, 1909—continued.			
Massachusetts—			
All wage earners	29.6	59.7	10.8
Weavers	41.5	56.2	2.4
Spinners	24.0	60.4	15.6
All other	26.1	65.9	8.0
New Jersey—			
All wage earners	43.5	52.9	3.6
Weavers	56.4	43.1	0.5
Spinners	29.6	63.7	6.7
All other	39.8	54.1	6.1
New York—			
All wage earners	35.1	62.4	2.5
Weavers	51.6	47.8	0.6
Spinners	25.6	71.0	3.4
All other	29.3	67.0	3.6
Pennsylvania—			
All wage earners	26.2	60.0	13.8
Weavers	36.9	59.6	3.5
Spinners	17.4	62.2	20.4
All other	41.7	46.8	11.5

Nearly two-thirds (64.6 per cent) of the spinners reported for the United States as a whole in 1909 were women, the proportion being approximately the same at each of the two peceding censuses. Women were in the majority in this class of wage earners in each of the states shown in the table, the percentage which they formed of the total ranging from 60.4 in Massachusetts to 78.3 in Connecticut. The weavers were almost equally divided between adults of the two sexes; in Pennsylvania and Massachusetts, however, more than half of the weavers were women, the proportions being 59.6 per cent and 56.2 per cent, respectively, as compared with 41.4 per cent in Connecticut. Women formed a somewhat larger proportion of the total number of weavers in the industry in 1909 than in 1899, although there was a slight decrease in the percentages between 1904 and 1909. Of the wage earners included under the head of "All other" in 1909, over one-half were women.

Children are of importance only among the spinners, of whom they formed about one-eighth (13 per cent) in 1909; this relatively high percentage was, however, mainly due to conditions in Pennsylvania, where about one-fifth (20.4 per cent) of the spinners were children, this class in fact outnumbering the adult males reported as spinners, and in Massachusetts, where the proportion was 15.6 per cent; in the other states shown in the table the proportion of children among the spinners was small. Children formed a somewhat smaller proportion of the total number of spinners in the industry in 1909 than in either 1904 or 1899.

Wage earners employed, by months.—Table 14 gives the number of wage earners employed in the silk manufacturing industry on the 15th (or the nearest representative day) of each month during the year 1909 for nine of the leading states in which an average of 500 or more wage earners were employed during the year.

Table 14 — WAGE EARNERS EMPLOYED IN THE SILK MANUFACTURING INDUSTRY: 1909[1]

STATE.	Average number during the year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
United States	**99,037**	**97,170**	**99,473**	**100,753**	**100,314**	**99,212**	**97,782**	**96,534**	**98,351**	**99,528**	**99,629**	**99,409**	**100,294**
Connecticut	8,703	*8,370*	8,459	8,581	8,517	8,526	8,594	8,725	8,877	**9,248**	8,783	8,855	8,896
Maryland	655	593	675	693	717	670	653	683	710	688	562	*555*	657
Massachusetts	4,109	*3,745*	3,887	4,060	4,114	4,096	4,138	3,844	4,155	4,274	4,359	4,264	4,370
New Jersey	30,285	30,040	30,653	**30,951**	30,817	30,415	29,787	*29,726*	29,834	30,054	30,349	30,264	30,530
New York	12,903	13,044	13,532	**13,616**	13,166	12,672	12,139	*11,726*	12,393	12,789	13,229	13,187	13,353
North Carolina	739	721	*718*	715	745	757	750	752	796	761	725	716	717
Pennsylvania	36,469	*35,775*	36,457	36,964	**37,031**	36,917	36,761	36,203	36,260	36,480	36,265	36,159	36,356
Rhode Island	1,685	*1,452*	1,522	1,553	1,570	1,583	1,521	1,679	1,866	1,796	1,878	**1,908**	1,893
Virginia	819	803	*798*	809	824	815	802	810	829	823	803	835	**869**

[1] The month of maximum employment for each state is indicated by boldface figures and that of minimum employment by italic figures.

The largest number of wage earners employed in the silk mills during any month of 1909 was 100,753, in March, and the smallest number, 96,534, in July, the minimum number being equal to 95.8 per cent of the maximum. The industry is not subject to any noticeable seasonal variations. In 1904 the maximum number of wage earners, 82,724, was reported for December, and the minimum number, 76,587, for January, the latter number being equal to 92.6 per cent of the former.

Prevailing hours of labor.—In Table 15 the wage earners in the silk manufacturing industry have been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. In making this classification the average number of wage earners employed during the year in each establishment was classified as a total according to the hours prevailing in that establishment, even though a few employees worked a greater or smaller number of hours.

Nearly all (95.2 per cent) of the wage earners employed in the silk manufacturing industry in 1909 were in mills where the prevailing hours exceeded 54 per week, the great majority, 82.2 per cent of the total, being employed in establishments where the prevailing hours were between 54 and 60 per week. This was the most common working time, likewise, in all but two of the individual states for which figures are given in Table 15. In Maryland, however, all the wage earners, and in North Carolina the majority, were employed in establishments operating 60 hours.

Table 15 — AVERAGE NUMBER OF WAGE EARNERS IN THE SILK MANUFACTURING INDUSTRY: 1909

STATE.	Total.	In establishments with prevailing hours— 48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.
United States	**99,037**	**106**	**2,320**	**2,323**	**81,407**	**12,881**
Connecticut	8,703	.....	.....	.....	8,064	639
Maryland	655	.....	.....	.....	.....	655
Massachusetts	4,109	1	39	.....	4,069	.....
New Jersey	30,285	42	477	190	29,448	128
New York	12,903	32	1,305	1,042	7,753	2,771
North Carolina	739	.....	.....	.....	196	543
Pennsylvania	36,469	31	490	490	27,859	7,599
Rhode Island	1,685	.....	.....	.....	1,685	.....
Virginia	819	.....	.....	.....	669	150

CHARACTER OF OWNERSHIP.

Table 16 presents statistics with respect to the character of ownership of the establishments in the silk manufacturing industry.

Table 16 — CHARACTER OF OWNERSHIP.	SILK MANUFACTURING INDUSTRY. Number of establishments. 1909	1904	Value of products. 1909	1904
Total	852	624	$196,911,667	$133,288,072
Individual	180	[1] 143	19,051,800	[1] 11,048,417
Firm	[1] 204	166	[1] 43,334,000	29,836,535
Corporations	468	315	134,495,867	92,403,120
Per cent of total	100.0	100.0	100.0	100.0
Individual	21.1	[1] 22.9	9.7	[1] 8.3
Firm	[1] 23.9	26.6	[1] 22.0	22.4
Corporation	54.9	50.5	68.3	69.3

[1] Includes one establishment under an unclassified form of ownership, to avoid disclosure of individual operations.

In 1909, of the total number of silk mills reported, 54.9 per cent were under corporate ownership, as compared with 50.5 per cent in 1904, these establishments contributing more than two-thirds of the total value of products for the industry in both years (68.3 per cent and 69.3 per cent, respectively). Although establishments under individual and under firm ownership formed approximately the same percentage of the total number, the value of products of the establishments under the latter form of ownership was more than twice as great as that of establishments under individual ownership.

Table 17 gives statistics for establishments classified according to form of ownership for 8 leading states for 1909. The 1 establishment under an unclassified form of ownership has in this table been included with those under firm ownership.

Table 17 — STATE.	SILK MANUFACTURING INDUSTRY: 1909. Number of establishments owned by— Individuals.	Firms.	Corporations.	Wage earners in establishments owned by— Individuals.	Firms.	Corporations.	Value of products of establishments owned by— Individuals.	Firms.	Corporations.	Value added by manufacture in establishments owned by— Individuals.	Firms.	Corporations.
United States	180	204	468	9,746	21,904	67,387	$19,081,800	$43,334,000	$134,495,867	$9,533,210	$19,853,107	$59,758,434
Connecticut	8	10	29	633	623	7,447	1,030,757	1,109,736	18,922,194	583,018	512,329	8,132,995
Maryland	.....	1	3	.....	(X)	*655*	.....	(X)	*511,968*	.....	(X)	*275,339*
Massachusetts	6	3	9	(X)	(X)	*4,109*	(X)	(X)	*8,942,246*	(X)	(X)	*3,512,395*
New Jersey	86	99	163	3,695	8,880	17,710	8,395,443	18,385 422	38,648,685	4,158,341	8,927,330	19,078,702
New York	45	41	84	1,607	2,526	8,770	2,606,387	6,096,477	17,815,957	1,362,696	2,672,874	8,534,662
Pennsylvania	32	46	148	3,007	7,231	26,141	5,766,036	12,370,475	43,924,791	2,949,572	5,729,753	18,216,406
Rhode Island	1	2	10	(X)	(X)	*1,685*	(X)	(X)	*4,584,431*	(X)	(X)	*1,396,746*
Virginia	.....	.....	7	.....	.....	819	.....	.....	1,543,723	.....	.....	*532,830*

NOTE.—In some states in order to avoid disclosing the returns for individual establishments, the figures for one group have been consolidated with those for establishments under some other form of ownership. In such cases an (X) is placed in the column from which the figures have been omitted and the figures for the group with which they have been combined are printed in italics. The figures for firms include those for one establishment under an unclassified form of ownership.

In 1909, 9,746 wage earners, or 9.8 per cent of the total, were employed in establishments under individual ownership; 21,904, or 22.1 per cent, in those under firm ownership, including the one establishment under an unclassified form of ownership; and 67,387, or 68 per cent, in those owned by corporations.

The different states show considerable variation in the relative importance of the establishments operated by individuals, firms, and corporations, respectively. In New Jersey, the leading state in the production of silk goods, establishments controlled by corporations constituted 46.8 per cent of the total number of establishments, gave employment to 58.5 per cent of the wage earners, and reported 59.1 per cent of the total value of products. In Pennsylvania, the second state in the industry, establishments under corporate ownership formed 65.5 per cent of the total number and reported 71.7 per cent of the wage earners and 70.8 per cent of the total value of products.

SIZE OF ESTABLISHMENTS.

Classification by value of products.—Table 18 presents statistics for 1909 and 1904 for establishments grouped according to the value of their products.

Table 18 — VALUE OF PRODUCTS PER ESTABLISHMENT.	SILK MANUFACTURING INDUSTRY. Number of establishments. 1909	1904	Value of products. 1909	1904
Total	852	624	$196,911,667	$133,288,072
Less than $5,000	45	32	113,378	96,817
$5,000 and less than $20,000	130	101	1,511,784	1,190,256
$20,000 and less than $100,000	298	204	15,328,061	10,438,041
$100,000 and less than $1,000,000	342	264	111,378,638	81,783,414
$1,000,000 and over	37	23	68,579,806	39,778,944
Per cent of total	100.0	100.0	100.0	100.0
Less than $5,000	5.3	5.1	0.1	0.1
$5,000 and less than $20,000	15.3	16.2	0.8	0.9
$20,000 and less than $100,000	35.0	32.7	7.8	7.8
$100,000 and less than $1,000,000	40.1	42.3	56.6	61.4
$1,000,000 and over	4.3	3.7	34.8	29.8

Establishments with products valued at $100,000 but less than $1,000,000 form the most important class, both numerically and as measured by value of products, such establishments constituting about two-fifths of the total number both in 1909 and 1904, and reporting 56.6 per cent of the total value of products in 1909 and 61.4 per cent in 1904. Establishments with products valued at $1,000,000 or over formed only a small proportion of the total number at either census, but reported 34.8 per cent of the total value of products in 1909 and 29.8 per cent in 1904.

The average value of products per establishment increased from $213,603 in 1904 to $231,117 in 1909, and the average value added by manufacture, as computed from the figures in Table 5, from $92,030 to $104,630. The average number of wage earners per establishment, on the other hand, shows a decrease from 128 in 1904 to 116 in 1909.

Classification by number of wage earners.—Table 19 classifies establishments in 9 of the leading states according to the number of wage earners employed.

Table 19 SILK MANUFACTURING INDUSTRY.

STATE.	Total.		Establishments employing in 1909— No wage earners.	1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
	Establishments.	Wage earners (average number).	Establishments.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.
United States	**852**	**99,037**	**3**	**61**	**176**	**182**	**2,336**	**180**	**6,210**	**155**	**11,394**	**168**	**27,012**	**75**	**25,818**	**20**	**13,538**	**8**	**12,553**
Connecticut	47	8,703	.....	.....	.....	10	142	11	387	8	566	11	1,718	4	1,396	2	1,595	1	2,899
Maryland	4	655	.....	.....	.....	.....	.....	1	28	.....	.....	2	321	1	306	.....	.....	.....	.....
Massachusetts	19	4,109	.....	1	1	2	33	6	240	1	57	6	899	1	384	1	585	1	1,910
New Jersey	348	30,285	.....	29	73	102	1,290	74	2,540	63	4,586	54	8,590	19	6,860	4	2,592	3	3,754
New York	170	12,903	3	19	61	38	482	37	1,190	32	2,255	28	4,170	11	3,703	2	1,042	.....	.....
North Carolina	4	739	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	472	1	267	.....	.....	.....	.....
Pennsylvania	226	36,469	.....	11	37	25	334	45	1,649	44	3,395	57	9,688	31	10,515	10	6,861	3	3,990
Rhode Island	13	1,685	.....	.....	.....	4	46	1	45	4	284	.....	.....	4	1,310	.....	.....	.....	.....
Virginia	7	819	.....	.....	.....	.....	.....	2	50	2	166	2	274	1	329	.....	.....	.....	.....

Of the 852 silk mills reported for 1909, 3 employed no wage earners; 28.5 per cent employed from 1 to 20 wage earners; 39.3 per cent from 21 to 100; 28.5 per cent from 101 to 500; 2.3 per cent from 501 to 1,000; and only nine-tenths of 1 per cent more than 1,000.

Of the total number of wage earners reported, 2.5 per cent were in establishments employing from 1 to 20 wage earners; 17.8 per cent in establishments employing from 21 to 100; 53.3 per cent in those employing from 101 to 500; 13.7 per cent in those employing from 501 to 1,000; and 12.7 per cent in establishments employing more than 1,000 wage earners. The most important class of establishments shown in the table is that comprising establishments employing from 101 to 250 wage earners, these establishments employing an aggregate of 27,012 wage earners, or 27.3 per cent of the total for the industry, while those employing from 251 to 500 wage earners were second, with 25,818 wage earners, or 26.1 per cent of the total.

EXPENSES.

As stated in the Introduction, the census figures representing expenses do not purport to show the total cost of manufacture, since they take no account of interest or depreciation; hence they can not properly be used for determining profits. Facts of interest can be brought out, however, concerning the relative importance of the different classes of expenses which were reported. Table 1 shows the total expenses in 1909 to have been $177,175,719, distributed as follows: Cost of materials, $107,766,916, or 60.8 per cent; wages, $38,570,085, or 21.8 per cent; salaries, $7,527,279, or 4.2 per cent; and miscellaneous expenses, made up of advertising, ordinary repairs of buildings and machinery, insurance, taxes, traveling expenses, and other sundry expenses, $23,311,439, or 13.2 per cent.

The proportions of the total expenses represented by the different items naturally vary in the several states. The differences are very largely due to differences in the extent to which the organzine and tram used is made within the state or purchased from outside the state and in the relative importance of establishments engaged solely in throwing.

ENGINES, POWER, AND FUEL.

Engines and power.—The amount of power used in the silk manufacturing industry was first reported at the census of 1869. Table 5 shows that the total horsepower used increased from 1,911 in 1869 to 97,947 in 1909. Table 20 shows statistics of power as reported at the censuses of 1909, 1904, and 1899.

The total primary power used in the silk mills increased from 57,397 horsepower in 1899 to 97,947 horsepower in 1909, or 70.6 per cent. By far the greater part of the power used in the industry is steam power; the proportion which such power formed of the total primary power, however, decreased from 80.1 per cent in 1899 to 73.6 per cent in 1909, although there was a considerable absolute increase during the decade in the amount of steam power employed. Water power, also, which formed 11.6 per cent of the total primary power in 1899, shows a steady decrease in the proportion which it formed of the total, in spite of an increase in amount, constituting only 8.5 per cent of the total in 1909. The horsepower of electric motors operated by purchased current (rented electric power) increased from 609 in 1899 to 10,354 in 1909, and at the last census was second in importance to steam power, representing 10.6 per cent of the total

primary power, as compared with only 1 per cent a decade earlier.

Table 20

POWER.	SILK MANUFACTURING INDUSTRY.								
	Number of engines or motors.			Horsepower.			Per cent distribution of horsepower.		
	1909	1904	1899	1909	1904	1899	1909	1904	1899
Primary power, total	**2,836**	**1,350**	**557**	**97,947**	**71,760**	**57,397**	**100.0**	**100.0**	**100.0**
Owned	700	605	557	81,719	64,628	52,956	83.4	90.1	92.3
Steam	535	468	421	72,059	56,362	45,959	73.6	78.5	80.1
Gas	64	50	19	1,277	937	323	1.3	1.3	0.6
Water wheels	101	85	117	8,383	6,965	6,666	8.5	9.7	11.6
Water motors	.....	2	.....	.....	9	.....	.....	(1)	.....
Other	.....	.....	.....	.....	355	8	.....	0.5	(1)
Rented	2,136	745	.....	16,228	7,132	4,441	16.6	9.9	7.7
Electric	2,136	745	.....	10,354	2,393	609	10.6	3.3	1.0
Other	.....	.....	.....	5,874	4,739	3,832	6.0	6.6	6.7
Electric motors	**5,714**	**2,157**	**135**	**23,758**	**9,521**	**4,607**	**100.0**	**100.0**	**100.0**
Run by current generated by establishment	3,578	1,412	135	13,404	7,128	3,998	56.4	74.9	86.8
Run by rented power	2,136	745	.....	10,354	2,393	609	43.6	25.1	13.2

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

The number and horsepower of electric motors used for distributing power by means of current generated in the establishment show a very large increase, the horsepower of such motors having more than trebled during the decade.

Table 21 shows, for 1909, the amount of the several kinds of power and of the different kinds of fuel used in nine of the leading states in the industry.

In 1909 Pennsylvania, New Jersey, and New York together reported 75,448 horsepower, or 77 per cent of the aggregate for the industry. Steam power was the most important form of power in all of the states shown separately except Massachusetts and Virginia, where water power was used to a greater extent than any other form of power. The largest amount of steam power, 37,410 horsepower, is shown for Pennsylvania; the largest amount of water power, 2,001 horsepower, for Massachusetts; and the largest amount of rented electric power, 2,960 horsepower, for Pennsylvania. The rented power included under the head of "Other," which is particularly large in New Jersey, is chiefly power supplied by shafts or belts to small mills.

Table 21

STATE.	SILK MANUFACTURING INDUSTRY.															
	Primary horsepower.								Electric horsepower.		Fuel used.					
	Number of establishments reporting.	Total horsepower.	Owned by establishments reporting.				Rented.		Total, rented and generated by establishment.	Generated in the establishment reporting.	Coal.		Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Electric.	Other.			Anthracite (long tons).	Bituminous (short tons).				
United States	**844**	**97,947**	**81,719**	**72,059**	**1,277**	**8,383**	**10,354**	**5,874**	**23,758**	**13,404**	**242,771**	**155,256**	**3,601**	**993**	**3,072**	**49,673**
Connecticut	47	8,564	8,050	6,577	.....	1,473	514	.....	2,286	1,772	2,268	30,794	.....	557	135	484
Maryland	4	915	850	850	.....	.....	65	.....	65	.....	.....	4,539	.....	.....	.....	.....
Massachusetts	19	5,305	4,012	1,991	20	2,001	1,281	12	1,823	542	13	12,682	.....	160	.....	60
New Jersey	346	22,376	15,799	14,378	303	1,118	2,381	4,196	5,731	3,350	74,090	16,817	.....	8	273	5,640
New York	165	11,110	8,549	6,422	639	1,488	1,924	637	3,642	1,718	16,140	20,357	3,601	6	114	36,591
North Carolina	4	865	865	865	.....	.....	.....	.....	320	320	402	3,441	.....	60	.....	.....
Pennsylvania	225	41,062	38,066	37,410	154	502	2,960	936	7,616	4,656	148,313	41,746	.....	43	637	5,508
Rhode Island	13	2,318	1,655	1,265	.....	390	630	33	779	149	134	4,156	.....	.....	.....	.....
Virginia	7	1,858	1,484	685	.....	799	374	.....	763	389	438	3,476	.....	.....	.....	.....
All other states	14	2,674	2,389	1,616	161	612	225	60	733	508	973	8,248	.....	159	1,913	1,390

Fuel consumed.—Anthracite coal was the principal class of fuel used, 242,771 long tons being consumed during 1909. Bituminous coal was next in importance, 155,256 short tons being consumed. Gas was also used to a considerable extent, the greatest quantity being reported for New York.

SPECIAL STATISTICS RELATING TO MATERIALS, PRODUCTS, AND EQUIPMENT.

MATERIALS.

Summary for the United States.—Table 22 shows statistics of the materials used in the industry for 1909, 1904, and 1899.

Table 22 — MATERIAL.	MATERIALS USED IN THE SILK MANUFACTURING INDUSTRY. 1909	1904	1899	Per cent of increase: 1899–1909
Total cost	$107,766,916	$75,861,188	$62,406,665	72.7
Silk:				
Raw—				
Pounds	17,472,204	11,572,783	9,760,770	79.0
Cost	$67,787,037	$45,318,416	$40,721,877	66.5
Spun—				
Pounds	2,112,972	1,951,201	1,550,291	36.3
Cost	$4,848,789	$4,310,061	$3,406,059	42.4
Artificial—				
Pounds	914,494	466,151	6,056	15,000.6
Cost	$1,926,894	$1,623,473	$10,380	18,463.5
Organzine and tram, purchased—				
Pounds	3,377,972	3,236,744	2,338,464	44.5
Cost	$14,679,710	$14,552,425	$10,539,632	39.3
Fringe and floss, including waste, noils, etc., purchased—				
Pounds	2,402,960	[1] 49,811	1,735,179	38.5
Cost	$1,637,187	[1] $187,159	$1,008,947	62.3
Yarns, other than silk:				
Cotton (not including mercerized)—				
Pounds	12,617,292	8,387,048	6,444,208	95.8
Cost	$4,687,173	$2 586,954	$1,830,550	156.1
Mercerized cotton—				
Pounds	1,494,586	631,247	219,861	579.8
Cost	$1,124,409	$471,035	$165,683	578.6
Woolen or worsted—				
Pounds	610,588	443,155	239,461	155.0
Cost	$765,989	$409,867	$167,770	356.6
Mohair—				
Pounds	710,108	138,389	104,810	577.5
Cost	$640,529	$137,097	$107,365	496.6
All other—				
Pounds	353,780	130,930	108,388	226.4
Cost	$456,597	$108,841	$134,986	238.3
Chemicals and dyestuffs	$1,062,313	$666,992	(2)	.....
All other materials	$8,150,280	$5,488,868	$4,313,416	89.0

[1] Does not include waste, noils, etc., which are included with "all other materials."
[2] Not reported separately.

The total cost of the materials used in the silk manufacturing industry in 1909 was $107,766,916, as compared with $75,861,188 in 1904 and $62,406,665 in 1899, an increase during the decade of 72.7 per cent. The figures involve considerable duplication, as already stated, but it is not possible to make any accurate estimate of the extent of this duplication.

Attention is called to the fact that the statistics for raw silk shown in Table 22 do not represent the total amount of this material used in the industry. More than two-thirds of the raw silk used was thrown on contract, either for silk merchants or for weaving mills, and as this silk was not owned by the mills doing the throwing, its amount and value were not included by them in their report as to materials used. The silk thrown for the weaving mills, however, formed part of the materials reported by such mills and accordingly is included in the table, but that thrown for merchants, not being owned by silk manufacturing concerns, was not reported and so is not included in the statistics for the industry. It is impossible to give the amount of silk so thrown, but the quantity must have been considerable. Silk thrown for merchants and later sold by them as organzine and tram to establishments within the silk industry does not figure in the statistics of materials as raw silk, but as organzine or tram only.

The reported cost of raw silk represented 62.9 per cent of the total cost of all materials used, while that of organzine and tram, purchased as such, represented 13.6 per cent, these two items forming more than three-fourths (76.5 per cent) of the total cost of materials. The following table shows the proportion which the quantity of the different materials used in the silk industry formed of the total in 1909, 1904, and 1899:

Table 23 — MATERIAL.	PER CENT OF TOTAL QUANTITY OF TEXTILE MATERIALS USED IN THE SILK MANUFACTURING INDUSTRY. 1909	1904	1899
Total	100.0	100.0	100.0
Silk	62.5	64.0	68.4
Raw silk	41.5	42.9	43.4
Spun silk	5.0	7.2	6.9
Artificial silk	2.2	1.7	(1)
Organzine and tram	8.0	12.0	10.4
Fringe and floss, including waste, noils etc.	5.7	[2] 0.2	7.7
Yarns, other than silk	37.5	36.0	31.6
Cotton	30.0	31.1	28.6
Mercerized cotton	3.6	2.3	1.0
Woolen or worsted	1.5	1.6	1.1
Mohair	1.7	0.5	0.4
All other	0.8	0.5	0.5

[1] Less than one-tenth of 1 per cent.
[2] Not including waste, noils, and pierced cocoons.

Silk in its various forms constituted about three-fifths of the total weight of textile materials used in 1909, and yarns other than silk about two-fifths. The quantity of raw silk used in the industry shows an increase of 79 per cent during the decade and its cost an increase of 66.5 per cent. The increase in the amount of yarns other than silk used was much greater than that in the silk used, thus indicating a tendency toward the manufacture of silk mixed goods. The amount of cotton yarn other than mercerized used in 1909 was nearly twice as great as in 1899, and that of mercerized cotton yarns, the consumption of which in 1899 was comparatively small, nearly seven times as great, while considerable increases are also shown for mohair and for woolen or worsted yarns.

The amount of spun silk purchased shows an increase of only 36.3 per cent for the decade, a smaller increase relatively than in any other material shown separately in Table 22. The quantity purchased exceeded the quantity reported as sold (see Table 27) by 1,333,510 pounds in 1909, 1,380,672 pounds in 1904, and 1,112,832 pounds in 1899. A large part of this material is imported, the total quantity brought into the country during the fiscal year ending June 30, 1909, being 2,343,576 pounds. Spun silk is used principally in the manufacture of silk-mixed goods, although large quantities are used in the cotton goods and woolen industries and in the manufacture of hosiery and knit goods. The spun silk manufactured in the United States is made, to a great extent, from the

waste which result from the various processes of manufacture carried on in the silk mills, together with imported wild silk and pierced cocoons.

Owing to the high price of silk and to its limited supply, great efforts have been made to secure satisfactory substitutes. As a result, a number of processes have been invented for making fibers closely resembling animal silk. The production of artificial silk is largely confined to Germany and France, but a number of other countries have mills devoted to its manufacture. Although the establishments in the United States have scarcely passed the experimental stage there is promise of a large output in this country. The silk mills of the United States used 914,494 pounds of artificial silk in 1909, as compared with 466,151 pounds in 1904, and 6,056 pounds in 1899. This material is used principally in the manufacture of braids and fringes, dress trimmings, millinery trimmings, etc.

In 1909 the silk mills purchased 3,377,972 pounds of organzine and tram. This amount is very little larger than that for 1904, and only 44.5 per cent in excess of that reported for 1899. The quantity purchased exceeded that sold (see Table 28) by 637,653 pounds in 1909 and 1,211,099 pounds in 1904; in 1899, however, the quantity made for sale exceeded that purchased.

In addition to the silk materials already mentioned, 2,402,960 pounds of fringe and floss, waste, pierced cocoons, noils, and the like, valued at $1,637,187, were purchased and used in the industry in 1909. No comparative data are available for 1904, but in 1899 the quantity of these materials used amounted to 1,735,179 pounds, valued at $1,008,947, the increase in consumption for the decade amounting to 38.5 per cent. The imports of these materials for the fiscal year ending June 30, 1909, amounted to 1,854,207 pounds, valued at $1,073,018 (see Table 27).

Materials, by states.—Table 24 shows, by states, the quantity and cost of the materials used in the silk mills in 1909, with quantities alone for 1904 and 1899.

Table 24

MATERIAL AND STATE.	PRINCIPAL MATERIALS USED IN THE SILK MANUFACTURING INDUSTRY.			
	Cost: 1909	Quantity (pounds).		
		1909	1904	1899
Raw silk	$67,787,037	17,472,204	11,572,783	9,760,770
Connecticut	6,099,209	1,624,701	1,320,509	1,150,961
Massachusetts	3,753,207	920,308	739,004	720,485
New Jersey	23,705,609	6,112,647	3,553,090	3,155,334
New York	7,092,171	1,817,329	1,006,793	914,265
Pennsylvania	21,206,972	5,532,973	3,970,044	3,238,285
Rhode Island	2,173,458	483,330	262,112	102,601
All other states	3,756,411	980,916	721,231	469,749
Spun silk	4,848,789	2,112,972	1,951,201	1,550,201
Connecticut	1,425,657	596,379	716,607	502,558
New Jersey	628,027	244,617	154,201	178,735
New York	759,710	315,622	249,896	263,200
Pennsylvania	1,506,914	695,067	454,074	477,543
Rhode Island	175,113	73,816	52,145	51,516
All other states	293,368	187,471	324,278	76,739
Artificial silk	1,926,894	914,494	466,151	6,056
New Jersey	197,208	103,148	8,066	.....
New York	1,309,400	616,439	289,282	5,350
Pennsylvania	273,046	127,486	127,192	526
All other states	146,040	67,421	41,611	180
Organzine and tram, purchased	14,679,719	3,377,972	3,236,744	2,338,464
Connecticut	238,785	54,619	28,844	31,041
New Jersey	4,899,843	1,143,754	1,343,081	1,209,012
New York	1,471,824	335,003	603,623	197,781
Pennsylvania	7,531,045	1,719,952	1,202,805	871,235
All other states	538,222	124,644	58,391	29,395
Fringe and floss, including waste, noils, etc., purchased	1,637,187	2,402,960	[1] 49,811	1,735,179
New York	326,691	515,545	7,080	308,486
Pennsylvania	93,764	55,863	32,960	221,151
All other states	1,216,732	1,831,552	9,771	1,205,542

MATERIAL AND STATE.	PRINCIPAL MATERIALS USED IN THE SILK MANUFACTURING INDUSTRY.			
	Cost: 1909	Quantity (pounds).		
		1909	1904	1899
Cotton yarns (not including mercerized yarns)	4,687,173	12,617,292	8,387,048	6,444,208
Connecticut	850,437	2,410,095	1,359,021	1,187,863
Massachusetts	535,889	1,225,386	724,594	480,220
New Jersey	781,061	1,889,158	1,054,973	757,486
New York	757,470	2,018,612	1,197,943	1,556,545
Pennsylvania	1,077,157	2,869,000	2,591,135	1,759,759
Rhode Island	404,141	1,421,229	969,426	469,936
All other states	281,018	783,812	489,956	202,399
Mercerized cotton yarns	1,124,409	1,494,586	631,247	219,861
Connecticut	20,270	29,310	21,560	1,642
Massachusetts	113,253	158,499	5,348	4,708
New Jersey	390,198	490,367	261,905	122,053
New York	359,315	483,627	101,943	51,560
Pennsylvania	224,029	309,063	227,944	30,070
Rhode Island	12,769	17,983	5,550	2,000
All other states	4,575	5,897	6,997	7,828
Woolen or worsted yarns	765,989	610,588	443,155	239,461
New Jersey	106,333	69,169	25,725	16,940
New York	114,829	94,622	184,340	45,527
Pennsylvania	98,340	83,075	48,870	8,717
All other states	446,487	363,722	184,220	168,277
Mohair yarns	640,529	710,108	138,389	104,810
Connecticut	488,984	542,061	97,323	1,236
New Jersey	79,829	96,406	11,253	.....
New York	47,408	52,521	14,511	29,697
All other states	24,308	19,030	15,302	73,877
Other yarns	456,597	353,780	130,930	108,388
New York	170,491	113,855	71,486	24,167
Pennsylvania	148,013	178,306	49,824	31,323
All other states	138,093	61,619	9,620	52,898

[1] Not including waste, noils, etc.

Consumption of silk in other textile industries.—In addition to the silk used in the silk manufacturing industry, considerable amounts were used in other textile industries in the manufacture of goods of mixed fibers and of silk hosiery and silk knit goods, and also in the electrical industry for covering wire, for which data in regard to consumption is not available. Table 25 shows the quantity of reeled and spun silk yarns used in the United States in textile industries other than the silk manufacturing industry for 1909, 1904, and 1899.

The quantity of silk used in other textile industries in 1909 was more than three times as large as in 1899. The amounts used in hosiery and knit goods and cotton manufactures each show an increase of about 270 per cent; the quantity used in wool manufactures, however, shows an increase of less than 50 per cent. In cotton manufactures silk is used exclusively in the manufacture of fancy woven fabrics with silk stripes or figures. The statistics for 1909 show the remarkable increase in the production of silk hosiery from 12,572 dozen pairs in 1899 and 42,065 dozen pairs in 1904 to 434,414 dozen pairs in 1909, and this accounts for most of the increase shown for the hosiery and knit goods industry.

Table 25 INDUSTRY.	SILK YARN USED.		
	1909	1904	1899
Total ..... pounds..	3,524,135	1,221,953	1,147,270
Cotton manufactures ..... pounds..	2,062,006	412,589	560,680
Wool manufactures ..... pounds..	479,376	488,326	320,343
Hosiery and knit goods ..... pounds..	932,753	[1] 321,038	266,247
Per cent of total	100.0	100.0	100.0
Cotton manufactures	58.5	33.8	48.9
Wool manufactures	13.6	40.0	27.9
Hosiery and knit goods	27.9	26.3	23.2

[1] Includes 367 pounds reported by the cordage and twine and jute and linen goods industry.

Raw silk thrown under contract.—Formerly the throwing of raw silk in the United States was carried on chiefly in establishments which used the organzine and tram in further processes of manufacture. The practice on the part of weaving mills of having the silk thrown under contract in establishments whose activities are limited to this work, has, however, been growing rapidly. Table 26 shows, by states, the quantity of raw silk thrown under contract into organzine and tram in 1909, 1904, and 1899.

Table 26 STATE.	RAW SILK (POUNDS).			
	Total amount used in the industry.	Thrown under contract.		
		Total.	Into organzine.	Into tram.
United States:				
1909	17,472,204	12,753,002	6,114,209	6,638,793
1904	11,572,783	7,101,851	3,635,384	3,466,467
1899	9,760,770	4,298,659	2,331,456	1,967,203
Connecticut:				
1909	1,624,701	290,253	150,332	139,921
1904	1,320,509	216,454	131,038	85,416
1899	1,159,961	253,858	184,270	69,588
Massachusetts:				
1909	920,308	116,543	56,670	59,873
1904	739,004	.....	.....	.....
1899	720,485	8,000	.....	8,000
New Jersey:				
1909	6,112,647	2,661,205	813,906	1,847,299
1904	3,553,090	1,689,088	702,055	987,033
1899	3,155,334	1,237,622	585,722	651,900
New York:				
1909	1,817,329	936,754	495,053	441,701
1904	1,066,793	705,078	359,248	345,830
1899	914,265	322,381	117,981	204,400
North Carolina:				
1909	125,769	321,366	66,024	255,342
1904 [1]	.....	.....	.....	.....
1899	20,200	73,000	.....	73,000
Pennsylvania:				
1909	5,532,973	7,733,016	4,150,688	3,582,328
1904	3,970,044	4,116,299	2,288,174	1,828,125
1899	3,238,285	2,259,673	1,332,758	926,915
Rhode Island:				
1909	483,330	.....	.....	.....
1904	262,112	88,000	68,000	20,000
1899	102,691	16,599	16,599	.....
Virginia:				
1909	214,434	164,114	120,852	43,262
1904 [1]	.....	.....	.....	.....
1899	164,200	94,930	67,220	27,710
All other states: [2]				
1909	640,713	529,751	260,684	269,067
1904	721,231	286,932	86,869	200,063
1899	285,349	32,596	26,906	5,690

[1] Included in "all other states."
[2] All other states embrace: In 1909, California, Delaware, Georgia, Illinois, Maine, Maryland, Michigan, New Hampshire, and Ohio; in 1904, California, Delaware, Illinois, Maine, Maryland, Michigan, New Hampshire, North Carolina, Ohio, and Virginia; and in 1899, California, Delaware, Illinois, Maine, Maryland, Michigan, New Hampshire, and Utah.

The total amount of raw silk thrown under contract in 1909 was 12,753,002 pounds, equal to 73 per cent of the total amount used in the industry, the corresponding ratio for 1904 being 61.4 per cent, and that for 1899, 44 per cent. While these percentages do not show the proportion of the total amount of raw silk used in the industry which was thrown under contract in the respective years, owing to the fact that the silk reported as thrown under contract includes that thrown for merchants and others not in the silk manufacturing industry, they are sufficiently close to give a general idea of the relative extent of commission throwing and of the increase in the relative importance of such throwing during the decade covered by the table.

The quantity of silk thrown under contract almost trebled during the decade 1899–1909. Pennsylvania led in this branch of the industry in 1909, reporting 7,733,016 pounds, or about three-fifths (60.6 per cent) of the total amount of silk so thrown.

Imports.—Silk mills depend upon imports for their raw silk material. Table 27 shows the quantity and value of the imports of raw silk, spun silk, and raw silk waste for each fiscal year from 1899 to 1909, inclusive.

Table 27 YEAR ENDING JUNE 30—	IMPORTED SILK MATERIALS.[1]			
	Total.	Raw silk.	Spun silk.	Raw silk waste, including cocoons and nolls.
QUANTITY (POUNDS).				
1909	27,531,533	23,333,750	2,343,576	1,854,207
1908	18,802,980	15,424,041	2,140,848	1,238,091
1907	21,223,268	16,722,207	2,479,364	2,021,697
1906	19,609,281	14,505,324	2,257,260	2,846,697
1905	24,709,713	17,812,133	2,352,406	4,545,174
1904	18,775,983	12,630,883	2,053,274	4,091,826
1903	17,265,871	13,637,206	1,995,012	1,633,653
1902	16,396,071	12,620,682	2,161,245	1,614,144
1901	12,120,622	9,139,617	1,715,067	1,265,938
1900	15,494,270	11,259,310	2,420,552	1,814,408
1899	12,978,093	9,691,145	1,727,710	1,559,238
VALUE.				
1909	$83,487,443	$78,830,508	$3,583,857	$1,073,018
1908	68,249,135	63,665,534	3,702,232	881,369
1907	75,187,643	70,229,518	3,775,744	1,182,381
1906	57,308,424	52,855,611	3,227,920	1,224,893
1905	64,327,695	59,542,892	3,287,642	1,497,161
1904	49,148,317	44,461,564	3,047,817	1,638,936
1903	53,005,701	49,002,597	2,994,651	1,008,453
1902	45,941,875	41,714,331	3,306,524	921,020
1901	32,635,081	29,353,777	2,583,716	697,588
1900	49,053,108	44,549,672	3,723,348	780,088
1899	34,454,643	31,827,061	1,975,016	652,566

[1] Bureau of Foreign and Domestic Commerce, Department of Commerce, "Commerce and Navigation of the United States."

PRODUCTS.

Summary for the United States.—Table 28 shows in detail for 1909, 1904, and 1899, the quantity and value of the products of the establishments within the silk manufacturing industry.

The single-width yard is used as the unit of measurement in Table 28 and all other tables giving statistics of products for the industry.

The total value of products for the industry increased $89,655,409, or 83.6 per cent, between 1899 and 1909. The total production of silk goods of broad weave (broad silks, velvets, plushes, tapestries, and upholstery) in 1909 was 198,787,027 running yards, valued at $115,136,724, as compared with 97,940,935 yards, valued at $58,122,622, in 1899, the increase in output being 103 per cent, and that in value, 98.1 per cent.

Table 28 — PRODUCT.	PRODUCTS OF THE SILK MANUFACTURING INDUSTRY. 1909	1904	1899	Per cent of increase:[1] 1899-1909
Total value	[2]$196,911,667	$133,288,072	$107,256,258	83.6
Broad silks:				
Yards	185,707,316	124,871,215	87,636,883	111.9
Value	$107,881,146	$66,917,762	$52,152,816	106.9
Plain and fancies—				
All-silk—				
Yards	81,934,158	68,393,042	53,573,488	52.9
Value	$53,282,704	$40,741,480	$33,852,111	57.4
Silk-mixed—				
Yards	24,742,556	9,001,025	8,963,315	176.0
Value	$14,207,861	$5,343,472	$5,450,716	160.7
Jacquard—				
All-silk—				
Yards	13,249,090	8,143,091	7,532,229	75.9
Value	$9,835,345	$5,027,063	$5,379,001	82.8
Silk-mixed—				
Yards	6,043,686	2,336,120	1,677,466	260.3
Value	$3,473,799	$1,229,648	$1,260,321	175.6
Piece-dyed—				
All silk—				
Yards	19,693,303	21,334,584	7,331,501	168.6
Value	$11,353,242	$9,276,445	$3,342,167	239.7
Silk mixed—				
Yards	40,044,433	15,603,353	8,558,884	367.9
Value	$15,728,195	$4,399,654	$2,868,506	448.3
Velvets:				
Yards	10,093,583	7,262,315	5,122,249	97.1
Value	$4,767,990	$3,161,206	$2,479,993	92.3
Plushes:				
Yards	2,759,411	2,547,367	3,848,684	−28.3
Value	$2,104,768	$1,349,815	$2,480,068	−15.1
Tapestries and upholstery:				
Yards	226,717	1,760,210	1,333,119	−83.0
Value	$382,820	$1,559,982	$1,009,835	−62.1
Ribbons	$32,744,873	$21,899,604	$18,467,179	77.3
Laces, nets, veils, veiling, etc.	$1,350,850	$745,489	$803,104	68.2
Embroideries	$485,322	$112,362	$57,625	742.2
Fringes and gimps	$824,527	$1,016,954	$444,787	85.4
Braids and bindings	$4,483,248	$3,493,077	$1,522,565	194.5
Trimmings	$3,850,448	$3,107,607	$2,034,079	89.3
Milliners'	$1,646,136	$1,333,735	$615,012	167.7
Ladies' dress	$1,590,547	$1,549,391	$912,361	73.2
Military	$346,963	$170,231	$54,666	534.7
Cloak	$235,762	$53,640	$241,560	− 2.4
Tailors'	$41,040	$700	$26,624	54.1
Other	.....	.....	$183,853	.....
Machine twist:				
Pounds	1,088,760	932,998	987,917	10.2
Value	$6,341,719	$5,521,055	$5,997,974	5.7
Sewing, embroidery, wash, fringe, and floss silks:				
Pounds	747,246	811,711	739,301	1.1
Value	$4,179,355	$4,625,016	$4,248,216	− 1.6
Organzine and tram, for sale:				
Pounds	2,740,319	2,025,645	2,468,387	11.0
Value	$12,550,510	$9,190,650	$11,167,191	12.4
Spun silk, for sale:				
Pounds	779,462	570,520	437,459	78.2
Value	$2,104,666	$1,660,647	$1,026,227	105.0
All other products	$4,495,675	$5,227,800	$1,027,472	337.5
Amount received for contract work	$8,364,350	$3,716,056	$2,337,220	257.9

[1] A minus sign (—) denotes decrease.
[2] In addition, similar classes of silk goods to the value of $1,218,101 were made by establishments engaged primarily in the manufacture of other products, and silk hosiery and knit goods to the value of $4,548,708 were reported by hosiery and knit goods establishments.

Broad silks formed over nine-tenths of all broad weaves in 1909, the increase in the output between 1899 and 1909 being 111.9 per cent. All-silk goods constituted 61.9 per cent of the broad silk product in 1909 as compared with 78.1 per cent in 1899, the production of such goods increasing only 67.9 per cent during the decade, as compared with an increase of 268.9 per cent in the case of silk-mixed broad silks. In the case of each of the three main classes of broad silks, the increase in the output and value of silk-mixed goods was much greater relatively than that in the output and value of all-silk goods. Plain and fancy silks were the most important class of broad silks, representing 57.4 per cent of the total production in 1909 and contributing 62.6 per cent of the total value; of the total output of these fabrics, all-silk goods represented 76.8 per cent. Piece-dyed broad silks ranked next in importance, representing 32.2 per cent of the total output of broad silks and contributing 25.1 per cent of the total value; about two-thirds (67 per cent) of the total production of piece-dyed goods consisted of silk-mixed fabrics. The output of Jacquard broad silks, of which somewhat more than two-thirds (68.7 per cent) consisted of all-silk goods, was much less than that of the other two classes, representing 10.4 per cent of the total production of broad silks and contributing 12.3 per cent of the total value.

Each class of broad silk shows a considerable increase for the decade as a whole, the largest relative increase being in the case of silk-mixed piece-dyed broad silks, the output of which in 1909 was nearly five times as great as in 1899. The production of all-silk piece-dyed broad silks decreased 7.7 per cent between 1904 and 1909, although it was more than twice as great in the later year as in 1899.

The production of velvets nearly doubled during the decade, but there was a marked decrease in that of plushes, although there was a slight increase between 1904 and 1909. The production of tapestries and upholstery also decreased, all of the decrease taking place during the latter part of the decade.

Silk goods of narrow weave are of such varied widths that statistics of output in yards would have little meaning. Most of these goods show large increases in value, however, the increase for the decade in the value of embroideries and in that of braids and bindings being particularly noteworthy.

The figures for organzine and tram sold, of course fall short of representing the total production of organzine and tram other than for the use of the establishment doing the throwing, owing to the fact that they do not include the large amount of organzine and tram thrown under contract for establishments furnishing the raw silk. As shown by Table 26, a total of 12,753,002 pounds of raw silk were thrown under contract in 1909, none of the organzine and tram obtained from this silk being included as such in Table 28.

The production of sewing, embroidery, wash, fringe, and floss silks shows a decrease of 7.9 per cent for the five-year period 1904–1909, and its value a decrease of 9.6 per cent, although the production in 1909 represented an increase of 1.1 per cent over that in 1899.

"All other products," for which the value was separately reported in 1909, amounted to $4,495,675 and include a variety of commodities, some of which may have been included at previous censuses among those for which separate quantities and values were shown, and but inadequately represents the importance of the manufactures included under this heading. Silk hosiery and knit goods were not separately called for in the schedule used in 1899, 1904, and 1909. Hence, no figures as to this production are available. The various items comprising this total

for 1909, in so far as they can be segregated, were as follows:

ARTICLES.	Value.
Total	$4,495,675
Casket and upholstery trimmings, cords, tassels, etc	890,148
Gloves	279,860
Mufflers and handkerchiefs	267,910
Ties, neckwear, and belting	182,240
Fabrics	110,732
Fish lines	96,665
Dyed silk (raw silk)	1,186,462
Miscellaneous unclassified silk products, and waste	673,230
Miscellaneous products, other than silk	808,428

In addition to the products covered by Table 28, silk goods were manufactured to some extent by establishments assigned to industries other than the silk manufacturing industry proper, and Table 29 shows for 1909 their quantity and value so far as separately reported, manufactured in all industries combined, in the industry designated "silk and silk goods, including throwsters," and in all other industries, respectively.

Table 29

PRODUCT.	Total production: 1909	Production in the silk manufacturing industry.	Production in other industries.[1]
Value of all products	$202,678,476	$196,911,667	$5,766,809
Broad silks, plain and fancies—			
All silk—			
Yards	82,307,526	81,934,158	373,368
Value	$53,419,522	$53,282,704	$136,818
Silk mixed—			
Yards	28,645,106	24,742,556	3,902,550
Value	$15,136,632	$14,207,861	$928,771
Plushes:			
Yards	2,770,311	2,759,411	10,900
Value	$2,112,968	$2,104,768	$8,200
Ribbons	$32,873,469	$32,744,873	$128,596
Braids and bindings	$4,495,964	$4,483,248	$12,716
Trimmings	$3,853,448	$3,850,448	$3,000
Hosiery	[2] $3,600,416	(3)	$3,600,416
Shirts and drawers, silk and silk mixed	[2] $709,074	(3)	$709,074
Combination suits, silk and silk mixed	[2] $239,218	(3)	$239,218
All other products	$86,237,765	$86,237,765	.....

[1] Includes products made by establishments in the following industries: Clothing, men's, including shirts; corsets; cotton goods and cotton small wares; fancy articles not elsewhere specified; furnishing goods, men's; hosiery and knit goods.
[2] Exclusive of hosiery and knit goods made in the silk manufacturing industry.
[3] Included with "all other products."

The total value of products reported for the silk manufacturing industry proper in 1909 includes $16,242,087, representing the value of organzine and tram, spun silk, and other partly finished products, a large part of which were sold to other manufacturing establishments for use as material in the manufacture of silk goods, and $808,428 representing the value of products other than silk manufactures, so far as these were separately returned. The subtraction of the two figures just given from the total value of products for the industry leaves a remainder of $179,861,152, which represents approximately the value of the finished silk goods made in the industry, although it may include the value of some products other than silk goods which were not specifically reported. On the other hand, silk and silk mixed hosiery and knit goods to the value of $4,548,708 were reported by establishments in the hosiery and knit goods industry, and other silk manufactures to the value of $1,218,101 were reported by establishments engaged primarily in the manufacture of other products, although it is probable that these figures do not represent the total production of silk manufactures outside the silk manufacturing industry, as some establishments making these products may not have reported them separately. Combining the two figures just given with that previously given as representing the approximate value of finished silk goods made by establishments in the silk manufacturing industry proper, a total of $185,627,961 is obtained, which represents approximately the total value of the finished silk goods manufactured in 1909.

Products, by states.—Table 30 gives, by states, the quantities of the different products of the silk manufacturing industry, so far as reported, for 1909, 1904, and 1899, with the values for 1909; and the value only for 1909, 1904, and 1899 of all products for which the quantity was not reported.

Table 31 gives for 1909 and 1899 the per cent distribution, by states, of the output (or the value) of all products for which the quantity or value is shown separately in Table 30.

Table 30

PRODUCT AND STATE.	PRODUCTS OF THE SILK MANUFACTURING INDUSTRY.			
	1909		1904	1899
	Value.	*Yards.*	*Yards.*	*Yards.*
Broad silks	$107,881,146	185,707,315	124,871,215	87,836,883
Connecticut	5,890,233	11,454,011	7,592,166	5,470,874
Massachusetts	5,898,231	9,668,788	4,235,637	2,705,638
New Jersey	43,167,205	64,788,199	46,700,737	40,594,148
New York	9,042,488	15,217,298	10,896,809	7,545,565
Pennsylvania	35,772,192	65,569,386	43,552,924	26,853,629
Rhode Island	4,415,641	11,649,145	6,497,937	2,367,437
All other states	3,695,156	7,360,488	5,425,005	2,099,592
All-silk	74,471,291	114,876,640	97,870,717	68,437,218
Connecticut	4,146,923	7,724,079	6,812,551	4,814,129
New Jersey	35,553,705	52,403,047	42,327,218	36,415,300
New York	5,946,921	8,707,603	10,002,610	3,989,439
Pennsylvania	25,873,332	41,600,686	33,624,116	20,565,734
All other states	2,950,410	4,441,225	5,104,222	2,652,616
Silk-mixed	33,409,855	70,830,675	27,000,498	19,199,665
Connecticut	1,743,310	3,720,932	749,615	656,745
New Jersey	7,613,500	12,385,152	4,373,519	4,178,848
New York	3,095,567	6,509,695	894,199	3,556,126
Pennsylvania	9,898,860	23,968,700	9,928,808	6,287,895
All other states	11,058,618	24,237,196	11,054,357	4,520,051
Plain and fancies:				
All-silk	53,282,704	81,934,157	68,393,042	53,573,488
Massachusetts	1,237,522	1,687,102	1,049,202	665,153
New Jersey	24,000,880	36,759,094	32,971,793	28,268,970
New York	4,421,795	5,923,694	4,672,699	3,359,029
Pennsylvania	22,291,788	35,923,451	25,404,097	17,837,478
All other states	1,330,719	1,640,816	4,295,161	2,802,858
Silk-mixed	14,207,861	24,742,556	9,061,025	8,963,315
New Jersey	3,808,772	6,077,863	1,822,091	2,331,493
New York	1,132,667	1,974,661	681,761	1,047,130
Pennsylvania	4,076,011	7,466,518	1,061,199	669,377
All other states	5,190,411	9,223,514	5,495,974	4,915,315
Jacquard:				
All-silk	9,835,345	13,249,090	8,143,091	7,532,229
New Jersey	8,352,659	10,880,081	5,480,054	6,451,655
New York	377,875	417,740	1,057,489	108,410
Pennsylvania	660,880	1,101,107	894,016	903,001
All other states	443,931	850,162	710,032	69,163
Silk-mixed	3,473,799	6,043,686	2,336,120	1,677,466
New Jersey	1,970,175	2,722,060	1,220,195	1,466,355
New York	16,591	16,950	209,191	61,426
Pennsylvania	462,643	918,258	406,052	56,421
All other states	1,024,390	2,385,518	500,682	93,264
Piece-dyed:				
All-silk	11,353,242	19,693,393	21,334,584	7,331,501
New Jersey	3,200,166	4,763,872	3,874,771	1,694,075
New York	1,147,251	2,366,169	4,272,422	22,000
Pennsylvania	2,920,664	4,576,128	7,325,103	1,775,255
All other states	4,085,161	7,087,224	5,862,288	3,839,571
Silk-mixed	15,728,195	40,044,433	15,603,353	8,558,884
Connecticut	1,409,717	3,319,973	582,680	147,833
Massachusetts	1,288,348	2,505,211	50,000	20,384
New Jersey	1,834,553	3,584,320	1,331,233	381,000
New York	1,946,309	4,518,084	3,247	2,447,570
Pennsylvania	5,360,206	15,583,924	8,461,557	5,562,097
All other states	3,889,062	10,532,912	5,174,736	.....
Velvets	4,767,990	10,093,583	7,262,315	5,122,249
Connecticut	4,519,238	9,741,329	7,154,387	4,261,208
All other states	248,752	352,254	107,928	861,041
Plushes	2,104,768	2,759,411	2,547,367	3,848,684
Connecticut	1,439,937	2,171,429	1,894,107	1,011,457
All other states	664,831	587,982	653,260	2,837,227
Upholstery	197,474	105,622	572,884	1,011,141
Tapestries	185,346	121,095	1,193,326	321,978

PRODUCT AND STATE.	PRODUCTS OF THE SILK MANUFACTURING INDUSTRY.			
	1909		1904	1899
	Value.	*Pounds.*	*Pounds.*	*Pounds.*
Machine twist	$6,341,719	1,088,780	932,998	987,917
Massachusetts	636,524	109,312	134,256	269,241
New York	605,978	154,665	35,325	46,500
Pennsylvania	609,523	117,766	28,223	43,476
All other states	4,489,694	707,037	735,194	628,700
Sewing, embroidery, and wash silks	3,778,306	660,507	606,357	477,658
Massachusetts	1,302,794	220,552	262,076	170,423
New York	253,875	69,931	12,060	18,528
All other states	2,221,637	370,024	331,321	288,707
Fringe and floss silks	401,049	86,739	205,354	261,643
Massachusetts	168,001	26,396	6,610	20,964
Pennsylvania	213,320	56,402	106,073	128,262
All other states	19,728	3,941	92,671	112,417
Organzine and tram, for sale	12,550,510	2,740,319	2,025,645	2,468,387
New Jersey	1,240,406	266,458	171,187	315,046
New York	1,354,540	330,026	99,866	48,263
Pennsylvania	7,475,327	1,642,004	1,396,424	1,723,791
All other states	2,480,237	501,831	358,168	380,687
Spun silk, for sale	2,104,066	779,462	570,529	437,459
Connecticut	923,321	339,400	328,863	166,265
All other states	1,180,745	440,062	241,666	271,194
			Value.	*Value.*
Ribbons	32,744,873	.....	$21,890,004	$18,467,179
Connecticut	1,125,697	.....	1,153,983	655,807
New Jersey	14,971,005	.....	10,036,331	8,341,721
New York	6,261,289	.....	4,983,712	4,883,011
Pennsylvania	10,008,146	.....	5,573,799	4,368,399
All other states	378,736	.....	142,779	218,241
Laces, nets, veils, veilings, etc.	1,950,850	.....	745,489	803,104
New Jersey	531,923	.....	414,891	423,257
New York	794,640	.....	291,400	377,047
All other states	24,287	.....	39,198	2,800
Fringes and gimps	824,527	.....	1,016,954	444,787
New York	560,027	.....	544,544	195,528
Pennsylvania	171,423	.....	349,570	170,695
All other states	93,077	.....	122,840	78,564
Braids and bindings	4,483,248	.....	3,493,977	1,522,565
New Jersey	756,563	.....	404,456	162,595
New York	2,566,881	.....	2,042,365	383,391
Pennsylvania	539,732	.....	424,277	110,573
All other states	620,072	.....	622,879	852,006
Trimmings	3,850,448	.....	3,107,697	2,034,076
New Jersey	244,408	.....	.....	160
New York	1,898,688	.....	1,725,985	767,294
Pennsylvania	1,498,148	.....	1,326,307	1,010,145
All other states	209,204	.....	55,405	256,477
All other products	4,495,675	.....	5,227,800	1,027,472
Connecticut	702,031	.....	74,470	192,744
Massachusetts	25,746	.....	383,821	21,053
New Jersey	1,328,369	.....	855,408	434,501
New York	1,489,120	.....	2,539,445	133,622
Pennsylvania	936,031	.....	1,092,372	171,349
Rhode Island	17,475	.....	54,283	8,400
All other states	1,903	.....	228,001	65,803
Amount received for contract work	8,364,350	.....	3,716,056	2,837,220
Connecticut	293,332	.....	230,614	136,362
Massachusetts	107,056	.....	26,342	9,278
New Jersey	2,436,573	.....	998,890	766,844
New York	606,010	.....	268,252	238,218
Pennsylvania	4,416,978	.....	1,994,319	1,676,133
Rhode Island	3,394	.....	61,800	14,294
All other states	501,007	.....	135,839	102,091

Table 31

PRODUCT AND STATE.	PER CENT DISTRIBUTION OF PRODUCTS OF THE SILK MANUFACTURING INDUSTRY. 1909	1899
	Quantity.	*Quantity.*
Broad silks	100.0	100.0
Pennsylvania	35.3	30.6
New Jersey	34.9	46.3
New York	8.2	8.6
Rhode Island	6.3	2.7
Connecticut	6.2	6.2
Massachusetts	5.2	3.1
All other states	4.0	2.4
All-silk	100.0	100.0
New Jersey	45.6	53.2
Pennsylvania	36.2	30.1
New York	7.6	5.8
Connecticut	6.7	7.0
All other states	3.9	3.9
Silk-mixed	100.0	100.0
Pennsylvania	33.8	32.8
New Jersey	17.5	21.8
New York	9.2	18.5
Connecticut	5.3	3.4
All other states	34.2	23.5
Plain and fancies:		
All-silk	100.0	100.0
New Jersey	44.9	52.8
Pennsylvania	43.8	33.4
New York	7.2	7.2
Massachusetts	2.1	1.2
All other states	2.0	5.4
Silk-mixed	100.0	100.0
Pennsylvania	30.2	7.5
New Jersey	24.6	26.0
New York	8.0	11.7
All other states	37.3	54.8
Jacquard:		
All-silk	100.0	100.0
New Jersey	82.1	85.7
Pennsylvania	8.3	12.0
New York	3.2	1.4
All other states	6.4	0.9
Silk-mixed	100.0	100.0
New Jersey	45.1	87.4
Pennsylvania	15.1	3.4
New York	0.3	3.7
All other states	39.5	5.6
Piece-dyed:		
All-silk	100.0	100.0
New Jersey	24.2	23.1
Pennsylvania	23.2	24.2
New York	12.0	0.3
All other states	40.6	52.4
Silk-mixed	100.0	100.0
Pennsylvania	38.9	65.0
Massachusetts	26.3	0.2
New York	11.3	28.6
New Jersey	9.0	4.5
Connecticut	8.3	1.7
All other states	6.2	.....

PRODUCT AND STATE.	PER CENT DISTRIBUTION OF PRODUCTS OF THE SILK MANUFACTURING INDUSTRY. 1909	1899
	Quantity.	*Quantity.*
Velvets	100.0	100.0
Connecticut	96.5	83.2
All other states	3.5	16.8
Plushes	100.0	100.0
Connecticut	78.7	26.3
All other states	21.3	73.7
Machine twist	100.0	100.0
New York	14.2	4.7
Pennsylvania	10.8	4.4
Massachusetts	10.0	27.3
All other states	64.9	63.6
Sewing, embroidery, and wash silks	100.0	100.0
Massachusetts	33.4	35.7
New York	10.6	3.9
All other states	56.0	60.4
Fringe and floss silks	100.0	100.0
Pennsylvania	65.0	49.0
Massachusetts	30.4	8.0
All other states	4.5	43.0
Organzine and tram, for sale	100.0	100.0
Pennsylvania	59.9	69.8
New York	12.0	2.0
New Jersey	9.7	12.8
All other states	18.3	15.4
Spun silk, for sale	100.0	100.0
Connecticut	43.5	38.0
All other states	56.5	62.0
	Value.	*Value.*
Ribbons	100.0	100.0
New Jersey	45.7	45.2
Pennsylvania	30.6	23.7
New York	19.1	26.4
Connecticut	3.4	3.6
All other states	1.2	1.2
Laces, nets, veils, veilings, etc	100.0	100.0
New York	58.8	46.9
New Jersey	39.4	52.7
All other states	1.8	0.3
Fringes and gimps	100.0	100.0
New York	67.9	44.0
Pennsylvania	20.8	38.4
All other states	11.3	17.7
Braids and bindings	100.0	100.0
New York	57.3	25.5
New Jersey	16.9	10.7
Pennsylvania	12.0	7.9
All other states	13.8	56.0
Trimmings	100.0	100.0
New York	49.3	37.7
Pennsylvania	38.9	49.7
New Jersey	6.3	.....
All other states	5.4	12.6

New Jersey was the leading state in the production of all-silk broad silks, reporting 45.6 per cent of the total. Pennsylvania was second, with 36.2 per cent. Pennsylvania and New Jersey together reported over one-half of the production of silk-mixed broad silks, Pennsylvania alone reporting 33.8 per cent. The increase in output in this state during the decade amounted to 281.2 per cent. New Jersey and Pennsylvania also led in the output of plain and fancy silks, reporting for 1909, 44.9 per cent and 43.8 per cent respectively, of the all-silk fabrics, and 24.6 per cent and 30.2 per cent, respectively, of the silk-mixed goods. The production of all-silk Jacquards reported for New Jersey represented 82.1 per cent of the total for the United States, while New Jersey also reported 45.1 per cent of the total output of silk-mixed Jacquards. New Jersey and Pennsylvania together reported nearly one-half of the total production of all-silk piece-dyed broad silks, the output of the former state being slightly larger than that of the latter; Pennsylvania, however, led in the production of silk-mixed goods, with 38.9 per cent of the total, New Jersey reporting only 9 per cent. Pennsylvania reported about three-fifths of the organzine and tram sold as such, much of this being sold to establishments in other states.

More than three-fourths of the total value of ribbons for the United States was reported from New Jersey and Pennsylvania. The production of laces, nets, veils, etc., was practically confined to two states, New York reporting 58.8 per cent of the total value and New Jersey 39.4 per cent. New York also reported about two-thirds of the total value of fringes and gimps, nearly three-fifths of the value of braids and bindings, and about one-half of the value of trimmings. Connecticut reported almost the entire output of velvet produced, and nearly four-fifths of the plushes, and also led in the production of machine twist, and of sewing, embroidery, and wash silks, as well as in that of spun-silk yarn.

Contract work.—Table 32 shows by states the distribution of the establishments in the silk manufacturing industry reporting contract work. Of the 852 establishments in the industry in 1909, 139 reported that they finished or printed their own goods, 10 did finishing or printing for others, and 193 did custom spinning or weaving.

Table 32 — ESTABLISHMENTS IN THE SILK MANUFACTURING INDUSTRY: 1909

STATE.	Total number.	Dyeing, finishing, or printing— Their own goods.	Dyeing, finishing, or printing— For others.	Doing custom spinning or weaving.
United States	852	139	10	193
California	3	2		
Connecticut	47	23	4	13
Delaware	3			1
Georgia	1			1
Illinois	2	1		
Maine	1	1		
Maryland	4	1		1
Massachusetts	10	7		3
Michigan	2	2		1
New Jersey	348	38	5	77
New York	170	40	1	16
North Carolina	4	1		2
Pennsylvania	226	22		77
Rhode Island	13	1		
Virginia	7			1
New Hampshire and Ohio	2			

EQUIPMENT.

Spindles.—Table 33 shows the number of producing and winding spindles reported respectively by the independent throwing plants and by the other silk mills for 1909, 1904, and 1899, so far as comparative figures are available.

Table 33 — SPINDLES USED IN THE SILK MANUFACTURING INDUSTRY.

KIND.	1909	1904	1899	Per cent of Increase.[1] 1899–1909	1904–1909	1899–1904
Producing spindles	1,777,962	1,394,020	1,213,493	46.5	27.5	14.9
In independent throwing plants	1,129,497	664,230	(2)	.....	70.0	.....
In other silk mills	648,465	729,784	(2)	.....	−11.1	.....
Winding spindles	637,565	624,086	442,410	44.1	2.1	41.2
In independent throwing plants	338,078	150,050	(2)	.....	125.3	.....
In other silk mills	299,487	474,636	(2)	.....	−36.9	.....

[1] A minus sign (—) denotes decrease. [2] Figures not available.

Table 34 shows, by states, the number of producing and winding spindles in independent throwing plants and in other silk mills, as reported at the census of 1909.

Table 34 — SPINDLES USED IN THE SILK MANUFACTURING INDUSTRY: 1909

STATE.	Producing spindles. Aggregate. Total.	Aggregate. Spinning and twisting.	Aggregate. Spinning only (spun silk).	In independent throwing plants. Total.	In independent throwing plants. Spinning and twisting.	In independent throwing plants. Spinning only (spun silk).	In other silk mills. Total.	In other silk mills. Spinning and twisting.	In other silk mills. Spinning only (spun silk).	Winding spindles. Total.	Winding spindles. In independent throwing plants.	Winding spindles. In other silk mills.
United States	1,777,962	1,647,415	130,547	1,129,497	1,068,525	60,972	648,465	578,890	69,575	637,565	338,078	299,487
California	1,958	1,958	.....	.....	.....	.....	1,958	1,958	.....	1,216	.....	1,216
Connecticut	118,302	93,214	25,088	47,480	47,480	.....	70,822	45,734	25,088	53,235	21,620	31,615
Delaware	3,264	3,264	.....	.....	.....	.....	3,264	3,264	.....	616	.....	616
Georgia	17,136	17,136	.....	17,136	17,136	.....	.....	.....	.....	1,766	1,766	.....
Illinois	3,100	3,100	.....	3,100	3,100	.....	.....	.....	.....	4,200	4,200	.....
Maine	4,740	4,740	.....	.....	.....	.....	4,740	4,740	.....	1,160	.....	1,160
Maryland	20,148	20,148	.....	20,148	20,148	.....	.....	.....	.....	6,798	6,780	18
Massachusetts	99,699	88,175	11,524	20,707	19,863	9,844	69,992	68,312	1,680	20,418	9,850	10,568
Michigan	12,326	12,326	.....	.....	.....	.....	12,326	12,326	.....	10,932	.....	10,932
New Hampshire	3,696	3,696	.....	3,696	3,696	.....	.....	.....	.....	896	896	.....
New Jersey	249,644	215,484	34,160	170,801	148,141	22,660	78,843	67,343	11,500	179,161	87,615	91,546
New York	159,559	133,254	26,305	127,498	115,698	11,800	32,061	17,556	14,505	69,022	35,271	33,751
North Carolina	25,500	25,500	.....	19,500	19,500	.....	6,000	6,000	.....	8,524	7,656	868
Pennsylvania	1,017,992	992,242	25,750	650,253	640,585	9,668	367,739	351,657	16,082	267,171	154,196	112,975
Rhode Island	7,720	.....	7,720	7,000	.....	7,000	720	.....	720	4,222	.....	4,222
Virginia	33,178	33,178	.....	33,178	33,178	.....	.....	.....	.....	8,228	8,228	.....

The percentages of increase during the decade in the number of producing and of winding spindles were practically the same. The increase in the number of winding spindles, however, was confined mainly to the first half of the decade, while the greater part of the increase in the number of producing spindles took place during the five-year period 1904–1909.

There was an increase during the five-year period 1904–1909 in the number of spindles in independent throwing plants corresponding to the marked increase in the amount of silk reported as thrown by such concerns. There was a decrease, however, in the number in other silk mills, establishments doing weaving being included under the latter head.

Pennsylvania, New Jersey, and New York together reported 80.3 per cent of the total number of producing spindles in 1909, as compared with 82.1 per cent in 1904 and 81.1 per cent in 1899. In 1909 Pennsylvania reported 1,017,992 producing spindles, or 57.3 per cent of the total for the United States, and in 1899, 638,851, or 52.6 per cent of the total. New Jersey shows a decrease both in number of spindles and in the proportion which they represented of the total, reporting 249,644 spindles, or 14 per cent of the total number, in 1909, as compared with 281,590, or 23.2

per cent of the total in 1899. New York, on the other hand, which reported only 63,486 spindles, or 5.2 per cent of the total, in 1899, reported 159,559, or 9 per cent of the total number, in 1909. In Connecticut and Massachusetts, the only other states reporting as many as 50,000 spindles, the number of producing spindles increased 22.7 per cent and 46.4 per cent, respectively, during the decade.

Of the total number of producing spindles in 1909, 1,647,415, or 92.7 per cent, were spinning and twisting spindles, and of these 1,068,525, or 64.9 per cent, were reported by independent throwing plants. The spindles for use in connection with spun silk numbered 130,547, or 7.3 per cent of the total number of producing spindles. These were about equally divided between independent throwing plants and other silk mills.

Spinning and twisting spindles in independent throwing plants were reported from 11 of the 17 states in which the industry was carried on. Pennsylvania led with 640,585, or 60 per cent of the total number, New Jersey was second with 148,141, or 13.9 per cent of the total, and New York third, with 115,698, or 10.8 per cent, these three states together reporting more than five-sixths (84.7 per cent) of the total for the United States. Three states, Pennsylvania, Massachusetts, and New Jersey, reported practically all of this class of spindles employed in the other silk mills, Pennsylvania alone reporting 60.7 per cent.

The spindles used in connection with spun silk in independent throwing plants were confined to five states, New Jersey, New York, Massachusetts, Pennsylvania, and Rhode Island. The use of such spindles in other silk mills was confined to the same five states together with Connecticut.

Winding spindles were reported for every state where the industry was carried on except Ohio. They were fairly well distributed between independent throwing plants and silk mills, the former reporting 53 per cent of the total, distributed through 11 states, and the latter 47 per cent, distributed through 12 states. Pennsylvania led in each case, reporting 154,196 winding spindles in independent throwing establishments, or 45.6 per cent of the total number in this class of establishments, and 112,975 in other silk mills, or 37.7 per cent of the total for such mills.

Table 35 shows, by states, the number of establishments in the industry reporting the throwing of silk in 1909, classified according to the number of spinning and twisting spindles reported. This table does not include the 130,547 spindles used in connection with spun silk.

Of the 245 establishments in the industry which carried on the operation of throwing, 107, or 43.7 per cent, reported less than 2,500 spinning and twisting spindles, and 26 reported 15,000 or over, 18 of the latter class of establishments being in Pennsylvania. Pennsylvania also contained 18 of the 32 establishments reporting 10,000 and less than 15,000 spinning and twisting spindles. In New Jersey practically two-thirds of the establishments which did throwing had less than 2,500 spinning and twisting spindles. No throwing was reported from Ohio or Rhode Island.

Table 35 ESTABLISHMENTS IN THE SILK MANUFACTURING INDUSTRY ENGAGED IN THROWING SILK: 1909

STATE.	Total number.	Classified according to number of spinning and twisting spindles reported.					Total number of spinning and twisting spindles reported.
		Less than 2,500 spindles.	2,500 spindles but less than 5,000.	5,000 spindles but less than 10,000.	10,000 spindles but less than 15,000.	15,000 spindles or over.	
United States	245	107	36	44	32	26	1,647,415
California	1	1	.....	.....	.....	.....	1,958
Connecticut	30	18	6	4	1	1	93,214
Delaware	1	.....	1	.....	.....	.....	3,264
Georgia	1	.....	.....	.....	.....	1	17,136
Illinois	1	.....	1	.....	.....	.....	3,100
Maine	1	.....	1	.....	.....	.....	4,740
Maryland	2	.....	.....	1	1	.....	20,148
Massachusetts	9	5	1	.....	2	1	88,175
Michigan	1	.....	.....	.....	1	.....	12,326
New Hampshire	1	.....	1	.....	.....	.....	3,696
New Jersey	67	44	7	8	6	2	215,484
New York	26	12	4	6	2	2	133,254
North Carolina	4	.....	2	1	1	.....	25,500
Pennsylvania	94	23	12	23	18	18	992,242
Virginia	6	4	.....	1	.....	1	33,178

Looms and Jacquard machines.—Table 36 shows, by states, statistics as to the number of active looms in the industry for 1909, 1904, and 1899.

Table 36 NUMBER OF ACTIVE LOOMS IN THE SILK MANUFACTURING INDUSTRY.

STATE AND CLASS.	1909	1904	1899	Per cent of increase.[1]		
				1899–1909	1904–1909	1899–1904
United States	75,406	60,058	44,430	69.7	25.6	35.2
On broad silks (including velvets)	64,836	50,449	36,989	75.3	28.5	36.4
On ribbons	10,570	9,609	7,441	42.1	10.0	29.1
Connecticut	5,006	4,260	2,975	68.3	17.5	43.2
On broad silks	4,477	3,500	2,681	67.0	27.9	30.5
On ribbons	529	760	294	79.9	−30.4	158.5
Massachusetts	2,717	1,610	1,040	161.2	68.8	54.8
On broad silks	2,703	1,466	896	202.2	84.7	63.6
On ribbons	9	144	144	−93.8	−93.8	.....
New Jersey	28,915	23,935	20,572	40.6	20.8	16.3
On broad silks	24,423	19,917	17,656	38.3	22.6	12.8
On ribbons	4,492	4,018	2,916	54.0	11.8	37.8
New York	7,575	6,989	5,268	43.8	8.4	32.7
On broad silks	5,375	4,761	3,020	78.0	12.9	57.6
On ribbons	2,209	2,228	2,248	−2.1	−1.3	−0.9
Pennsylvania	26,249	19,336	12,949	102.7	35.8	49.3
On broad silks	23,031	16,999	11,161	106.4	35.5	52.3
On ribbons	3,218	2,337	1,788	80.0	37.7	30.7
Rhode Island	2,511	1,706	533	371.1	47.2	220.1
On broad silks	*2,511*	*1,706*	*533*	*371.1*	*47.2*	*220.1*
On ribbons	.....	.....	.....	.....	.....	.....
All other states	2,433	2,222	1,093	122.6	9.5	103.3
On broad silks	2,311	2,100	1,042	121.8	10.0	101.5
On ribbons	122	122	51	139.2	(2)	139.2

[1] A minus sign (−) denotes decrease.
[2] Less than one-tenth of 1 per cent.

The total number of looms in operation increased from 44,430 in 1899 to 75,406 in 1909, a gain of 69.7 per cent for the decade. The figures include 173 hand looms for 1899 and 283 for 1904, but the number of

hand looms in use in 1909 was not separately reported. The number of looms employed on broad silks and velvets constituted 86 per cent of the total in 1909, 84 per cent in 1904, and 83.3 per cent in 1899. Between 1899 and 1909 the silk mills of New Jersey increased their loom equipment 40.6 per cent, those in Pennsylvania 102.7 per cent, and those in New York 43.8 per cent. The percentages of increase were still higher in Massachusetts and Rhode Island.

Table 37 presents a summary, by states, of the number of the different kinds of looms and the number of Jacquard machines in use in the silk manufacturing industry during 1909.

Table 37 — SILK MANUFACTURING INDUSTRY: 1909

STATE.	Looms.					Jacquard machines.[1]
	Total.	Over 36-inch reed space.	36-inch or less reed space.	Velvet.	Ribbon.	
United States	**75,406**	**35,214**	**28,426**	**1,196**	**10,570**	**8,985**
California	10	7	3	.....	.....	4
Connecticut	5,006	2,692	714	1,071	529	305
Delaware	210	57	117	.....	36	.....
Maine	158	.....	158	.....	.....	.....
Maryland	86	.....	.....	.....	86	.....
Massachusetts	2,717	1,801	907	.....	9	211
Michigan	716	716	.....	.....	.....	.....
New Jersey	28,915	11,684	12,707	32	4,492	5,797
New York	7,575	3,430	1,918	27	2,200	594
North Carolina	361	45	316	.....	.....	.....
Ohio	504	504	.....	.....	.....	.....
Pennsylvania	26,249	11,650	11,306	66	3,218	1,374
Rhode Island	2,511	2,431	80	.....	.....	.....
Virginia	388	188	200	.....	.....	200

[1] Total number, whether or not connected with looms.

Fourteen of the seventeen states in which the industry was carried on reported looms, but nearly three-fourths of the total number (73.1 per cent) were in the two leading states, New Jersey and Pennsylvania, which reported 38.3 per cent and 34.8 per cent, respectively, of the total number. New York reported 10 per cent of the total number of looms in operation.

New Jersey and Pennsylvania together reported about two-thirds of the looms of over 36-inch reed space, the number in the two states being practically the same; these states also reported more than five-sixths of the looms of 36-inch reed space or less, the number in New Jersey being somewhat the greater.

Connecticut reported about nine-tenths (89.5 per cent) of the velvet looms, and New Jersey, Pennsylvania, and New York together 93.8 per cent of the ribbon looms, New Jersey alone reporting 42.5 per cent of the total. Six states reported Jacquard machines, nearly two-thirds of the total number being in New Jersey, and over one-fifth in Pennsylvania.

Table 38 presents, by states, a summary of the spindle and loom equipment of the establishments in the silk manufacturing industry in 1909, classified according to mills (1) without spindles or looms; (2) doing spinning and weaving; (3) spinning only; and (4) weaving only.

Of the 852 establishments in the industry in 1909, 44, or 5.2 per cent, reported no looms or throwing or spun silk spindles. These are establishments engaged in the manufacture of braids and bindings, fringes and gimps, cords and tassels, trimmings, embroideries, etc., and equipped with braiders, cord and gimp machines, and other special machinery. New York reported 30 of these establishments.

Table 38 — SPINDLE AND LOOM EQUIPMENT IN THE SILK MANUFACTURING INDUSTRY: 1909

STATE.	Total.			Number of establishments without spindles or looms.	Spinning and weaving.			Spinning only.		Weaving only.		Per cent of total.			
												Spindles.		Looms.	
	Number of establishments.	Number of spindles.	Number of looms.		Number of establishments.	Number of spindles.	Number of looms.	Number of establishments	Number of spindles.	Number of establishments	Number of looms.	In establishments doing both spinning and weaving.	In establishments doing only spinning.	In establishments doing both spinning and weaving.	In establishments doing only weaving.
United States	**852**	**2,415,527**	**75,406**	**44**	**210**	**899,956**	**35,394**	**247**	**1,515,571**	**351**	**40,012**	**37.3**	**62.7**	**47.0**	**53.0**
California	3	3,174	10	.....	1	40	7	1	3,134	1	3	1.3	98.7	70.0	30.0
Connecticut	47	171,537	5,006	4	12	82,905	4,294	26	88,632	5	712	48.3	51.7	85.8	14.2
Delaware	3	3,880	210	.....	2	3,880	174	.....	.....	1	36	100.0	.....	82.9	17.1
Georgia	1	18,902	.....	.....	.....	.....	.....	1	18,902	.....	.....	.....	100.0	.....	.....
Illinois	2	7,300	.....	1	.....	.....	.....	1	7,300	.....	.....	.....	100.0	.....	.....
Maine	1	5,900	158	.....	1	5,900	158	.....	.....	.....	.....	100.0	.....	100.0	.....
Maryland	4	26,946	86	.....	1	18	72	2	26,928	1	14	0.1	99.9	83.7	16.3
Massachusetts	19	120,117	2,717	.....	6	79,126	2,003	8	40,991	5	714	65.9	34.1	73.7	26.3
Michigan	2	23,258	716	.....	1	20,258	716	1	3,000	.....	.....	87.1	12.9	100.0	.....
New Hampshire	1	4,592	.....	.....	.....	.....	.....	1	4,592	.....	.....	.....	100.0	.....	.....
New Jersey	348	428,805	28,915	6	75	169,345	10,845	68	259,460	199	18,070	39.5	60.5	37.7	62.3
New York	170	228,581	7,575	30	40	46,105	3,504	51	182,476	49	4,071	20.2	79.8	46.3	53.7
North Carolina	4	34,024	361	.....	1	6,868	361	3	27,156	.....	.....	20.2	79.8	100.0	.....
Ohio	1	.....	504	.....	.....	.....	.....	.....	.....	1	504	.....	.....	.....	100.0
Pennsylvania	226	1,285,163	26,249	2	64	480,569	12,333	77	804,594	83	13,916	37.4	62.6	47.0	53.0
Rhode Island	13	11,942	2,511	1	6	4,942	927	1	7,000	5	1,584	41.4	58.6	36.9	66.1
Virginia	7	41,406	388	.....	.....	.....	.....	6	41,406	1	388	.....	100.0	.....	100.0

Establishments doing both spinning and weaving formed 24.6 per cent of the total number, and reported 37.3 per cent of the spindles and 46.9 per cent of the looms; establishments doing spinning only formed 29 per cent of the total number and reported 62.7 per cent of the spindles; and establishments doing weaving only formed 41.2 per cent of the total number and reported 53.1 per cent of the looms. Establishments doing weaving only also constituted the largest of the four groups distinguished in Table 38 in the two leading states, 199 establishments, or 56.7 per cent of the total number, in New Jersey, and 83 establishments, or 23.6 per cent of the total number, in Pennsylvania. In New York the number of establishments doing spinning only was slightly larger than the number doing weaving only. In Connecticut 26 out of 47 establishments were engaged solely in spinning.

DETAILED STATE TABLES.

The principal statistics secured by the census inquiry concerning the silk manufacturing industry are presented by states in Tables 39 and 40.

Table 39 shows, for 1909, 1904, and 1899, the number of establishments, number of persons engaged in the industry, primary horsepower, capital invested, salaries, wages, cost of materials, value of products, and value added by manufacture.

Table 40 gives more detailed statistics for the industry for 1909 only.

SILK AND SILK GOODS, INCLUDING THROWSTERS—COMPARATIVE STATISTICS, BY STATES: 1909, 1904, AND 1899.

Table 39 STATE.	Census.	Number of establishments.	Persons engaged in industry. Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).	Primary horsepower.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture (value of products less cost of materials).
								Expressed in thousands.					
United States	1909	852	105,238	664	5,537	99,037	97,947	$152,158	$7,527	$38,570	$107,767	$196,912	$89,145
	1904	624	84,153	525	4,027	79,601	71,760	109,557	4,742	26,768	75,861	133,288	57,427
	1899	483	68,550	477	2,657	65,416	57,397	81,082	3,134	20,982	62,407	107,256	44,849
Connecticut	1909	47	9,385	37	645	8,703	8,564	19,730	996	3,749	11,834	21,063	9,229
	1904	43	8,157	38	327	7,792	7,821	16,676	479	3,124	9,098	15,624	6,526
	1899	38	6,860	23	323	6,514	5,415	12,167	403	2,393	7,198	12,379	5,181
Maryland	1909	4	681	2	24	655	915	488	32	160	237	512	275
	1904	3	188	.....	13	175	765	421	9	48	171	273	102
	[1] 1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts	1909	19	4,308	24	175	4,109	5,305	7,801	201	1,840	5,430	8,042	3,512
	1904	18	3,397	10	126	3,261	4,221	5,523	142	1,162	4,157	7,012	2,855
	1899	20	3,277	11	156	3,110	4,331	5,650	227	1,110	3,824	5,958	2,134
New Jersey	1909	348	32,365	306	1,774	30,285	22,376	43,615	2,317	13,917	33,265	65,430	32,165
	1904	239	26,986	227	1,278	25,481	16,903	33,645	1,556	9,893	22,339	42,863	20,524
	1899	180	25,313	197	959	24,157	15,964	29,286	1,145	9,233	21,631	39,967	18,336
New York	1909	170	14,136	140	1,093	12,903	11,110	20,972	1,493	5,385	13,949	26,519	12,570
	1904	123	12,348	105	960	11,283	7,250	15,751	1,104	4,268	10,490	20,181	9,691
	1899	92	8,318	94	363	7,861	5,111	9,800	514	2,862	6,570	12,706	6,136
Pennsylvania	1909	226	38,178	143	1,566	36,469	41,962	49,679	2,132	11,443	35,166	62,061	26,895
	1904	168	28,240	133	1,192	26,915	28,390	31,312	1,300	6,973	24,267	39,334	15,067
	1899	121	21,904	131	745	21,028	23,210	20,894	719	4,630	19,885	31,073	11,188
Rhode Island	1909	13	1,750	6	59	1,685	2,318	3,496	80	788	3,188	4,584	1,396
	1904	8	1,326	4	31	1,291	1,645	2,652	41	480	1,696	2,556	860
	1899	6	466	3	8	455	250	680	12	167	819	1,311	492
All other states	1909	25	4,435	6	201	4,228	5,397	6,377	276	1,288	4,698	7,801	3,103
	1904	22	3,511	8	100	3,403	4,765	3,577	111	820	3,643	5,445	1,802
	1899	26	2,412	18	103	2,291	3,116	2,605	114	587	2,480	3,862	1,382

[1] Figures can not be shown without disclosing individual operations.

SILK AND SILK GOODS, INCLUDING THROWSTERS—DETAILED STATISTICS, BY STATES: 1909.

Table 40

STATE.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY. Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks. Male.	Clerks. Female.	Wage earners. Average number.	Wage earners. Number, 15th day of— Maximum month.	Wage earners. Number, 15th day of— Minimum month.	WAGE EARNERS—DEC. 15, OR NEAREST REPRESENTATIVE DAY. Total.	16 and over. Male.	16 and over. Female.	Under 16. Male.	Under 16. Female.	Primary horsepower.
United States	**852**	**105,238**	**664**	**1,572**	**3,060**	**905**	**99,037**	**Mh 100,753**	**Jy 96,534**	**102,369**	**35,785**	**58,441**	**2,483**	**5,660**	**97,947**
Connecticut	47	9,385	37	135	418	92	8,703	Se 9,248	Ja 8,370	9,296	4,283	4,614	145	254	8,564
Delaware	3	229	.....	6	4	1	218	Mh 246	Oc 188	193	18	154	6	15	205
Maryland	4	681	2	8	8	8	655	Ap 717	No 555	663	196	280	58	129	915
Massachusetts	19	4,308	24	51	77	47	4,109	De 4,370	Ja 3,745	4,370	1,293	2,607	101	369	5,305
New Jersey	348	32,365	306	518	1,032	224	30,285	Mh 30,951	Jy 29,726	31,342	13,628	16,585	398	731	22,376
New York	170	14,136	140	274	587	232	12,903	Mh 13,616	Jy 11,726	13,231	4,641	8,255	78	257	11,110
Pennsylvania	226	38,178	143	498	817	251	36,469	Ap 37,031	Ja 35,775	37,290	9,772	22,378	1,578	3,562	41,962
Rhode Island	13	1,750	6	31	10	18	1,685	No 1,908	Ja 1,452	1,893	825	1,007	13	48	2,318
Virginia	7	857	.....	13	21	4	819	De 869	Fe 798	862	335	410	44	73	1,858
All other states [1]	15	3,349	6	38	86	28	3,191	.....	.....	3,229	794	2,151	62	222	3,334

STATE.	Capital.	EXPENSES. Total.	Services. Officials.	Services. Clerks.	Services. Wage earners.	Materials. Fuel and rent of power.	Materials. Other.	Miscellaneous. Rent of factory.	Miscellaneous. Taxes, including internal revenue.	Miscellaneous. Contract work.	Miscellaneous. Other.	Value of products.	Value added by manufacture (value of products less cost of materials).
United States	**$152,158,002**	**$177,175,719**	**$3,815,770**	**$3,711,509**	**$38,570,085**	**$1,687,981**	**$106,078,935**	**$1,118,478**	**$451,903**	**$12,008,744**	**$9,732,314**	**$196,911,667**	**$89,144,751**
Connecticut	10,730,268	18,022,348	404,230	591,920	3,749,186	214,763	11,019,582	47,287	84,964	369,832	940,584	21,062,687	9,228,342
Delaware	175,692	242,568	4,830	2,050	64,223	3,848	147,673	1,550	296	15,229	2,863	255,434	103,913
Maryland	487,503	459,727	22,815	9,396	159,943	11,210	225,419	.....	818	7,143	22,983	511,968	275,339
Massachusetts	7,800,736	8,337,761	106,004	94,705	1,840,247	82,862	5,346,989	17,330	42,362	504,326	302,936	8,942,246	3,512,395
New Jersey	43,615,438	59,576,339	1,201,586	1,115,270	13,017,360	537,514	32,727,063	532,230	145,655	5,503,935	3,895,126	65,429,550	32,164,373
New York	20,972,116	23,853,493	709,385	783,908	5,385,355	249,977	13,698,612	325,414	48,145	1,269,206	1,383,491	26,518,821	12,570,232
Pennsylvania	49,679,061	55,614,244	1,173,305	958,637	11,442,878	495,850	34,669,721	178,854	94,043	3,851,881	2,749,075	62,061,302	26,805,731
Rhode Island	3,495,555	4,210,400	57,610	23,013	788,229	36,091	3,151,594	5,793	13,188	38,524	96,958	4,584,431	1,396,746
Virginia	1,226,412	1,491,203	23,307	13,742	260,598	10,164	1,000,729	900	3,541	78,024	100,198	1,543,723	532,830
All other states [1]	4,975,221	5,367,636	113,292	118,868	962,066	45,702	3,490,953	9,120	18,891	370,644	238,100	6,001,505	2,464,850

[1] All other states embrace: California, 3 establishments; Georgia, 1; Illinois, 2; Maine, 1; Michigan, 2; New Hampshire, 1; North Carolina, 4; Ohio, 1.