

Chapter III.—INDIVIDUAL INDUSTRIES.

Classification of industries.—The present report on manufactures distinguishes 344 industries, although for certain purposes some of these are subdivided into two or more branches. There are 271 of these subgroups of industries shown. Thus separate totals are given for 615 industries or subclasses of industry. In one sense there are in this country thousands of branches of manufacture. The making of each specific class of finished commodities, however limited, might be looked upon as a separate industry, and in many cases several of the distinct processes or stages in the production of a single finished commodity might each be treated as a distinct industry, as, indeed, is sometimes actually done in the census reports. Manifestly, however, there must be some grouping of commodities and processes in a general report on manufactures, not only in order to bring the number of industries within reasonable compass, but also in order to avoid the extensive overlapping which would result from an attempt to distinguish a very large number of industries. Each establishment must ordinarily be treated as a unit, and the statistics reported for it must be assigned, as totals, to some one industry. It very commonly happens that an establishment manufactures several related articles or commodities, or performs several related operations. The classification must, therefore, if possible, be broad enough to cover a "mixed" establishment as a whole.

The Bureau of the Census has aimed to distinguish, so far as practicable, each well-defined and well-recognized industry. It has based its classification upon prevailing conditions as to the actual organization of industry and the distribution of the different branches of production among individual establishments. It has been found necessary, however, in some cases to combine the data for two or more industries which are usually considered fairly distinct from one another, because of the considerable amount of overlapping among them. In such cases the majority of the establishments may confine their business to one or another of the industries, but if a few important plants combine two or more industries in such a way that separate data can not be secured, it becomes impracticable to present statistics for the industries separately.

In order to meet the requirements for more detailed information concerning the various classes of products, and also to assist in making possible a closer comparison of the domestic production with the imports and exports, the scheme of classifying was revised at the census of 1914 and a number of new classes added. As a rule these new classes are subclasses of existing classifications, and in the majority of them there is a greater amount of overlapping of products than there is in the regular classifications. For example, for cutlery and edge tools there are seven subclasses: Table cutlery; razors; axes and hatchets; scissors, shears, and clippers; pocket knives; augers, bits, chisels, and planes; and all other cutlery and edge tools. Since in many cases an establishment manufactures two or more of these classes of commodities, and since in compiling the statistics each establishment has to be placed in some one class, the figures must be accepted on the understanding that those for each class represent only the establishments engaged *primarily* in the production of commodities falling within that class. The statistics as to cost of materials, value of products, and value added by manufacture for the establishments in any particular class, therefore, cover not only the products belonging in that class, but also the subsidiary products belonging in other classes, but do not cover the commodities belonging in that class which are made as subsidiary products by establishments in other classes.

Assignment of establishments to industries.—The necessity for classifying each establishment according to its product of chief value sometimes results in overstating

the importance of a given industry and understating the importance of some other. A single illustration of this fact may be given. The establishments classified as engaged in the wire industry include only those that draw wire from rolled rods purchased from other concerns. The products of such establishments in 1914 were valued at \$81,841,012. Many of the establishments classified as steel works and rolling mills, however, manufacture wire in conjunction with their rolling-mill business. The value of the wire and wire products made by such establishments in 1914 was \$74,972-923. Moreover, wire and wire products are manufactured in considerable quantities by establishments classified under the designations "brass, bronze, and copper products" and "electrical machinery, apparatus, and supplies." The total value of wire and wire products for all establishments which drew wire amounted in 1914 to \$172,600,546, or more than twice the value of products of the establishments classified as engaged in the wire industry. On the other hand, it should be noted that the \$81,841,012 reported as the value of products for the wire industry does not represent the value of wire alone, but includes a large amount representing the value of manufactures of wire, such as wire fence, wire nails and spikes, and wire rope and strand—products similar to those manufactured from purchased wire by establishments classified under the designation "wirework, including wire rope and cable."

The Census Bureau has aimed, so far as practicable with a reasonable expenditure of money and of time, to remedy the statistical difficulties due to the overlapping of industries. It has sought to ascertain in the case of the more important industries the quantity and value—or, where quantities would have no significance, the value alone—of each separate class of products. While it is often impracticable for an establishment to assign the proper proportions of its capital, wage earners, and expenses to the different branches of industry carried on within it, most establishments are able to distinguish exactly or approximately the quantities and values of the different classes of products made. In the case of many industries, special schedules calling for detailed information in regard to products were used, and often several different special schedules were filled out by a single establishment whose business was of a varied character. The general manufactures schedule, which was used in canvassing all establishments, also contained spaces for listing the values of the leading products separately, though in many instances it was found impracticable to secure a proper classification of the products of an establishment. The data thus collected have been assembled, and in connection with the statistics for the establishments assigned to a given industry, the quantities and values of similar products made by establishments assigned to other industries are shown wherever practicable.

Description of tables.—Table 220 (page 516) is a detail summary of the statistics for each industry in the United States reported at the census of 1914. Table 223 (page 568) gives the general totals for each industry in the United States for 1914, and, so far as available, comparative figures for earlier census years. The comparison is made for more censuses for some industries than for others. In some cases the figures are not closely comparable from census to census on account of changes in the scope of the inquiry and in the method of classifying reports, as well as on account of changes in the actual conditions under which different classes of products are manufactured. In the comments concerning the various tables attention has been called to such cases of incomparability in the statistics, so far as information bearing on the subject is available. Some of the earlier census reports do not state clearly the exact scope of the various industry classifications nor the exact line of demarcation between different classifications. In the cases of most of the industries, however, the tables show in a rough way the general progress from census to census.

The statistics for 1914, 1909, 1904, and 1899 relate only to establishments operating under the "factory system," as defined by the Census Bureau, while at prior censuses establishments not operating under this system were to some extent included. This

difference affects seriously the comparability of the statistics for a few industries, but most of those covered by the census of manufactures have at all times been carried on either wholly or in large part as factory industries.

In addition to a comparison of the United States totals relating to each industry, Table 223 gives the statistics for 1914 with reference to each industry in each state for which figures can be presented without disclosing the operations of individual establishments. Reference should be made to this table for statistics to be used in connection with the descriptions of individual industries on pages 30 to 265.

Industries combined for comparative purposes.—While the designations assigned to the several industries in the tables have been made as clearly descriptive as possible in brief form, it is necessary for any one who desires to know the full extent and the limits of the field covered by any given classification to consult the detailed description of the industry. At the census of 1909 the statistics for kindred industries were combined. For example, the establishments reported for "clocks and watches, including cases and materials," at the census of 1909, comprised 52 which manufactured clocks; 26, watch and clock materials; 29, watch cases; and 13, watches.

The following list gives the combinations under which the data for certain industries have been placed in order to make the statistics for 1914 comparable with those for 1909 and prior censuses. Separate figures for each industry, however, are shown in the tables presenting statistics for 1914 only, and also in some of the comparative tables.

COMBINATIONS.	INDUSTRIES INCLUDED.
Artificial flowers and feathers and plumes.....	Artificial flowers. Feathers and plumes.
Automobiles, including bodies and parts.....	Automobile bodies and parts. Automobiles.
Belting and hose, woven and rubber.....	Belting and hose, woven. Belting and hose, rubber.
Blackening and cleansing and polishing preparations..	Blackening, stains, and dressings. Cleansing and polishing preparations.
Boots and shoes, including cut stock and findings..	Boot and shoe cut stock, exclusive of that produced in boot and shoe factories. Boot and shoe findings, exclusive of those produced in boot and shoe factories. Boots and shoes, not including rubber boots and shoes.
Brick, tile, pottery, and other clay products.....	Brick and tile, terra-cotta, and fire-clay products. Pottery. Sand-lime brick.
Butter, cheese, and condensed milk.....	Butter. Cheese. Condensed milk and milk products, other than but- ter and cheese.
Canning and preserving.....	Canning and preserving, fish. Canning and preserving, fruits and vegetables. Canning and preserving, oysters. Pickles, preserves, and sauces.
Carriages and wagons and materials.....	Carriage and wagon materials. Carriages, wagons, and repairs.
Clocks and watches, including cases and materials..	Clocks. Watch and clock materials. Watch cases. Watches.
Clothing, men's, including shirts.....	Clothing, men's. Shirts.
Cooperage and wooden goods, not elsewhere speci- fied.	Cooperage. Wooden goods, not elsewhere specified.

COMBINATIONS.	INDUSTRIES INCLUDED.
Copper, tin, and sheet-iron products.....	Copper, tin, and sheet-iron work. Stamped and enameled ware, not elsewhere specified. Tinware, not elsewhere specified.
Cordage and twine and jute and linen goods.....	Cordage and twine. Jute goods. Linen goods.
Cotton goods, including cotton small wares.....	Cotton goods. Cotton, lace. Cotton small wares.
Cutlery and tools, not elsewhere specified.....	Cutlery and edge tools. Tools, not elsewhere specified.
Enameling and japanning.....	Enameling. Japanning.
Fancy articles, not elsewhere specified.....	Combs and hairpins, not made from metal or rubber. Fancy articles, not elsewhere specified. Ivory, shell, and bone work, not including combs and hairpins.
Firearms and ammunition.....	Ammunition. Firearms.
Flags, banners, regalia, society badges and emblems.	Flags and banners. Regalia and society badges and emblems.
Foundry and machine-shop products.....	Automobile repairing. Bells. Engines, steam, gas, and water. Foundry and machine-shop products. Gas machines and gas and water meters. Hardware. Hardware, saddlery. Iron and steel, cast-iron pipe. Plumbers' supplies, not elsewhere specified. Pumps, steam and other power. Steam fittings, and steam and hot-water heating apparatus. Structural ironwork, not made in steel works or rolling mills.
Furnishing goods, men's.....	Collars and cuffs, men's. Furnishing goods, men's. Suspenders, garters, and elastic woven goods.
Furniture and refrigerators.....	Furniture. Refrigerators.
Gas and electric fixtures and lamps and reflectors...	Gas and electric fixtures. Lamps and reflectors.
Hand stamps and stencils and brands.....	Hand stamps. Stencils and brands.
Leather goods.....	Leather goods, not elsewhere specified Pocketbooks. Saddlery and harness. Trunks and valises.
Lumber and timber products.....	Boxes, wooden packing. Lumber and timber products. Lumber, planing-mill products, not including planing mills connected with sawmills. Pulp wood. Window and door screens and weather strips.
Musical instruments, pianos and organs and materials.	Musical instruments, organs. Musical instruments, pianos. Musical instruments, piano and organ materials.
Oilcloth and linoleum.....	Oilcloth and linoleum, floor. Oilcloth, enameled.
Paint and varnish.....	Paints. Varnishes.
Paper goods, not elsewhere specified.....	Cardboard, not made in paper mills. Envelopes. Paper goods, not elsewhere specified.

COMBINATIONS.	INDUSTRIES INCLUDED.
Patent medicines and compounds and druggists' preparations.	Druggists' preparations. Patent medicines and compounds. Perfumery and cosmetics.
Pens, fountain, stylographic, and gold.....	Pens, fountain and stylographic. Pens, gold.
Photographic apparatus and materials.....	Photographic apparatus. Photographic materials.
Printing and publishing.....	Bookbinding and blank-book making. Engraving, steel and copper plate, including plate printing. Lithographing. Printing and publishing, book and job. Printing and publishing, music. Printing and publishing, newspapers and periodicals.
Sewing machines, cases, and attachments.....	Sewing-machine cases. Sewing machines and attachments.
Shipbuilding, including boat building.....	Shipbuilding, iron and steel. Shipbuilding, wooden, including boat building.
Silverware and plated ware.....	Plated ware. Silversmithing and silverware.
Slaughtering and meat packing.....	Sausage, not made in slaughtering and meat-packing establishments. Slaughtering and meat packing.
Stoves and furnaces, including gas and oil stoves....	Stoves and hot-air furnaces. Stoves, gas and oil.
Surgical appliances and artificial limbs.....	Artificial limbs. Surgical appliances.
Tobacco manufactures.....	Tobacco, chewing and smoking, and snuff. Tobacco, cigars and cigarettes.
Type founding and printing materials.....	Printing materials. Type founding.
Woolen, worsted, and felt goods, and wool hats.....	Felt goods. Hats, wool-felt. Woolen and worsted goods.

Rank and increase of leading industries.—The relative importance of the leading manufacturing industries in 1914 and their growth from 1904 to 1914 are shown in Table 5, which includes industries having, in 1914, a gross value of products of \$100,000,000 or more. This table presents for each industry the percentages of increase and decrease in the most important items for the two five-year periods. The industries are grouped and arranged in the order of their importance in respect to value of products. The table also shows the rank of the industries with respect to number of wage earners employed, cost of materials, and value added by manufacture. The number of wage earners and the value added by manufacture are, on the whole, better measures of the relative importance of manufacturing industries than the gross value of products. In some industries the value of the materials used constitutes by far the larger part of the total value of products, the manufacturing process involving the addition of only a small amount of labor cost and other expenses and of manufacturer's profit to the cost of the materials. Moreover, in some of the industries there is a much greater duplication in the gross value of products than in others, such duplication being due to the use of the product of one establishment in the industry as material for another establishment. This duplication, of course, does not appear in the value added by manufacture.

Table 5

INDUSTRIES WITH GROSS VALUE OF PRODUCTS OF \$100,000,000 OR MORE IN 1914.

INDUSTRY.	Wage earners (average number).		Cost of materials.		Value of products.		Value added by manufacture.					
	Rank, 1914.	Per cent of increase. ¹		Rank, 1914.	Per cent of increase. ¹		Rank, 1914.	Per cent of increase. ¹				
		1909	1914		1909	1914		1909	1914	1909	1914	
		1909	1914		1909	1914		1909	1914	1909	1914	
All industries.....	....	6.4	21.0	....	18.3	42.9	....	17.3	39.7	....	15.8	35.5
<i>Industries with products valued at \$500,000,000 or over.</i>												
Slaughtering and meat packing.....	19	12.5	18.5	1	21.0	47.8	1	21.9	48.3	13	28.2	51.9
Iron and steel, steel works and rolling mills.....	5	3.6	15.7	3	-10.1	49.0	2	-6.8	46.3	4	-0.1	41.0
Flour-mill and gristmill products.....	42	0.7	0.9	2	-2.0	23.8	3	-0.7	23.9	21	8.1	24.7
Foundry and machine-shop products.....	3			6			4			1		
Lumber and timber products.....	1	-12.3	35.3	11	6.2	44.6	5	-5.1	29.9	2	-11.2	23.2
Cotton goods.....	2	2.2	19.6	4	18.6	29.1	6	10.0	39.0	7	-2.5	56.6
Cars and general shop construction and repairs by steam-railroad companies.....	4	20.3	19.1	17	22.3	32.0	7	26.7	30.9	6	31.1	29.9
Automobiles.....	22	54.6	401.0	9	171.6	824.1	8	159.6	627.4	12	144.7	474.4
Boots and shoes, not including rubber boots and shoes.....	6	3.5	23.5	8	11.9	40.6	9	13.4	38.3	14	15.9	34.6
<i>Industries with products valued at \$100,000,000, but less than \$500,000,000.</i>												
Printing and publishing, newspapers and periodicals.....	15	5.2	12.2	31	32.6	38.4	10	22.1	31.3	3	18.8	29.2
Bread and other bakery products.....	13	23.8	23.3	12	15.2	52.6	11	23.9	47.2	10	37.0	39.8
Clothing, women's.....	8	9.9	32.9	15	20.9	59.7	12	23.2	55.4	9	25.9	50.5
Clothing, men's.....	7	-9.1	39.4	18	-8.9	35.9	13	-5.7	36.5	8	-2.1	37.1
Smelting and refining, copper.....	74	13.5	22.6	5	13.7	69.5	14	17.2	57.3	40	43.3	2.8
Liquors, malt.....	24	13.7	13.4	30	34.3	29.0	15	18.0	25.6	5	12.3	24.5
Petroleum, refining.....	59	82.1	-15.9	7	63.2	43.0	16	67.2	35.4	33	88.5	5.9
Woolen and worsted goods.....	9	-2.8	14.9	16	-9.9	38.5	17	-9.6	36.3	20	-9.1	32.5
Leather, tanned, curried, and finished.....	25	-10.1	8.7	10	14.5	29.9	18	12.0	29.8	30	4.2	29.5
Electrical machinery, apparatus, and supplies.....	14	35.3	44.3	23	42.5	62.4	19	51.4	57.2	16	60.0	52.4
Paper and wood pulp.....	21	16.4	15.2	19	28.9	48.7	20	24.1	41.8	23	16.4	32.0
Iron and steel, blast furnaces.....	50	-23.6	9.6	13	-17.5	79.2	21	-18.8	68.8	44	-25.0	33.9
Tobacco, cigars and cigarettes.....	10	9.5	3.1	29	27.1	26.6	22	21.1	21.3	15	17.1	18.1
Lumber, planing-mill products.....	20			21			23			22		
Printing and publishing, book and job.....	16	4.1	23.9	39	24.2	47.7	24	22.5	37.4	11	21.7	33.3
Sugar, refining.....	101	19.7		14	16.7		25	16.4		75	13.3	
Furniture.....	12	3.6	12.1	33	17.0	41.1	26	15.9	34.5	18	15.1	29.4
Hosiery and knit goods.....	11	16.4	24.2	26	33.1	43.6	27	29.4	46.0	24	24.8	49.1
Silk goods, including throwsters.....	17	9.2	24.4	27	34.0	42.1	28	26.0	47.7	25	22.9	55.2
Butter.....	87	22.4	21.3	20	25.3	67.5	29	24.8	64.5	68	21.6	47.1
Rubber goods, not elsewhere specified.....	31	89.4	25.2	32	53.4	111.2	30	74.1	103.9	27	110.8	92.0
Gas, illuminating and heating.....	38	17.7	21.8	43	46.4	41.0	31	32.0	33.3	19	25.4	30.0
Food preparations, not elsewhere specified.....	70	35.7	32.1	25	83.2	122.8	32	75.0	104.9	39	58.5	76.0
Oil, cottonseed, and cake.....	65	27.8	9.9	22	51.0	49.7	33	43.5	53.4	67	11.1	71.2
Liquors, distilled.....	155	-2.1	20.1	68	14.0	40.4	34	1.0	55.9	17	-1.7	59.7
Cars, steam-railroad, not including operations of railroad companies.....	27	26.0	26.5	28	67.9	4.1	35	57.4	11.3	41	39.1	26.6
Tobacco, chewing and smoking, and snuff.....	58	-4.6	13.5	44	2.9	65.6	36	11.9	34.1	26	20.1	14.4
Smelting and refining, lead.....	137	-0.5	-2.0	24	1.4	-10.1	37	2.5	-9.9	98	13.7	-8.5
Confectionery.....	28	20.2	23.2	38	24.5	66.3	35	26.7	54.8	34	30.2	40.2
Agricultural implements.....	33	-4.1	6.7	45	21.9	24.9	39	12.1	30.6	29	5.3	35.0

¹ A minus sign (-) denotes decrease.

Table 5—Continued.

INDUSTRY.	INDUSTRIES WITH GROSS VALUE OF PRODUCTS OF \$100,000,000 OR MORE IN 1914.											
	Wage earners (average number).		Cost of materials.			Value of products.		Value added by manufacture.				
	Rank, 1914.	Per cent of increase. ¹		Rank, 1914.	Per cent of increase. ¹		Rank, 1914.	Per cent of increase. ¹		Rank, 1914.	Per cent of increase. ¹	
		1909- 1914	1904- 1909		1909- 1914	1904- 1909		1909- 1914	1904- 1909		1909- 1914	1904- 1909
<i>Industries with products valued at \$100,000,000, but less than \$500,000,000—Continued.</i>												
Brass, bronze, and copper products.	41	-0.8	22.5	35	16.4	51.1	40	8.1	46.5	47	-8.0	38.1
Structural ironwork, not made in steel works or rolling mills.	35	17.2	17.4	42	14.3	61.6	41	19.6	46.5	32	26.8	30.1
Chemicals.	46	36.2	19.6	40	39.4	52.4	42	34.2	56.2	36	28.0	61.1
Fertilizers.	62	24.6	29.1	36	55.3	77.0	43	47.4	83.9	49	31.4	99.6
Coffee and spice, roasting and grinding.	126	14.1	25.7	34	40.0	26.4	44	36.4	31.3	62	25.3	49.0
Canning and preserving, fruits and vegetables.	30	24.3	1.3	37	65.2	21.2	45	63.1	17.0	43	58.8	8.8
Brick and tile, terra-cotta, and fire-clay products.	18			65			46			28		
Automobile bodies and parts.	34	95.6	1,249.6	49	166.0	1,501.5	47	134.0	1,534.3	38	109.7	1,560.2
Soap.	86	9.0	17.7	41	23.1	65.5	48	14.9	63.1	53	-0.3	53.9
Glass.	23	8.1	7.7	63	43.3	22.8	49	33.6	15.7	31	28.5	12.2
Millinery and lace goods.	37	15.5	42.5	51	28.1	71.5	50	32.9	69.2	42	38.3	66.6
Paints.	89	12.5	21.3	46	14.6	34.9	51	18.9	40.6	56	27.1	53.1
Dyeing and finishing textiles.	32	10.0	23.3	52	60.8	79.7	52	30.8	64.3	45	8.9	54.6
Marble and stone work.	26	-16.2	28.4	74	1.1	40.8	53	-5.3	33.3	35	-8.5	29.9
Carriages and wagons.	39	-21.4	-13.3	57	-18.3	4.4	54	-14.9	(?)	43	-11.3	-4.1
Patent medicines and compounds.	90	20.8	0.5	76	33.6	26.3	55	22.3	12.4	37	17.0	61.9
Cement.	54	4.3	53.2	58	77.2	140.2	56	61.0	111.6	46	47.0	91.8

¹ A minus sign (-) denotes decrease.² Less than one-tenth of 1 per cent.

It will be seen from the table that some of the industries that hold a very high rank in gross value of products rank comparatively low in number of wage earners employed and in value added by manufacture. Where this is the case it indicates that the cost of materials represents a large proportion of the total value of products, and therefore that the value added by manufacture, of which wages constitute usually the largest item, forms a relatively small proportion. Thus the slaughtering and meat-packing industry, which ranks first in gross value of products, and the flour-mill and gristmill industry, which ranks third in that respect, both hold a comparatively low rank in regard to number of wage earners and value added by manufacture. The blast-furnace industry; the smelting and refining of copper; the refining of sugar; the manufacture of butter; the refining of petroleum; and the smelting and refining of lead are other industries which rank much higher in gross value of products than in number of wage earners or in value added by manufacture.

There are several industries which have a decidedly higher rank in number of wage earners and value added by manufacture than in value of products; in other words, the cost of materials is relatively a smaller part of the total value of products for these industries than for most others. Among the industries of this class are furniture; electrical machinery, apparatus, and supplies; tobacco, cigars and cigarettes; printing and publishing, book and job; agricultural implements; the marble and stone work industry; and carriages and wagons.

The foundry and machine-shop industry, the lumber industry, the steel works and rolling mills, and the manufacture of cotton goods, all rank among the first 10 industries of the country on each of the three bases mentioned.

The figures for both value of products and value added by manufacture in the case of the brewery and distillery industries include a very large amount of tax paid to the Federal Government, and are therefore misleading as an indication of the relative importance of these industries from a purely manufacturing standpoint. That importance is best shown by their ranking in number of wage earners; in this respect the brewery industry ranks twenty-fourth among the industries of the country, and the distillery industry one hundred and fifty-fifth.

In considering the relative importance of the industries shown in Table 5, it should be noted that in several cases the figures given fall far short of being a complete presentation of the statistics for that branch of manufactures covered by the industry designation, for the reason that they cover only establishments engaged primarily in manufacturing the class of products indicated by this designation, whereas quantities of the same products are manufactured incidentally by establishments classified under other heads. Some conspicuous examples are the manufacture of glue, candles, lard, and fertilizers, and the dyeing and finishing of textiles. A large proportion of the glue, lard, and fertilizers is manufactured by slaughtering and meat-packing establishments, and considerable quantities of fertilizers are also made in cottonseed-oil mills. Candles are manufactured in establishments classified under the head of "soap" and also in those engaged in the manufacture of petroleum products. The dyeing and finishing of textiles is done largely in the establishments that manufacture the fabric.

SUMMARY FOR GROUPS OF INDUSTRIES.

To facilitate the comparison of one broad type of manufacturing with another, the 344 industries distinguished at the census of 1914 have been grouped into 14 general classes. Table 6 presents statistics for these classes for the last four censuses.

Any grouping of industries must necessarily be more or less arbitrary, and probably no two persons would agree exactly either as to the number of groups which should be distinguished or as to the proper assignment of every industry with respect to the groups established. In making up the 14 classes shown in Table 6, the Census Bureau has followed two principles: (1) That of similarity with respect to character of materials; and (2) that of similarity with respect to the use of the finished product. In some cases the actual classification of an industry might be explained by either principle. Thus the industries assigned to the textile group all resemble one another in using as materials fibers of different sorts or the more advanced products derived from those materials; and most of them resemble one another in that the products are designed chiefly for use, directly or indirectly, as clothing. On the other hand, the uses of the products made by the various industries classed under the general designation "iron and steel and their products" are extremely varied, and this group has been constituted solely with respect to the character of the principal materials used.

Group No.	Table 6		SUMMARY FOR 14 GENERAL GROUPS OF INDUSTRIES: 1914, 1909, 1904, AND 1899.						
	GROUP.	Census year.	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1	All industries.	1914	275,791	7,036,337	\$22,790,980	\$4,078,332	\$14,368,089	\$24,246,435	\$9,878,346
		1909	268,491	6,615,046	18,428,270	3,427,038	12,142,791	20,672,052	8,529,261
		1904	216,180	5,468,363	12,675,581	2,610,445	8,500,208	14,793,903	6,293,695
		1899	207,514	4,712,763	8,975,256	2,008,361	6,575,851	11,406,927	4,831,076
1	Food and kindred products.	1914	59,317	496,234	2,174,387	278,012	3,828,512	4,816,709	988,197
		1909	55,364	411,575	1,696,754	208,663	3,187,803	3,937,618	749,815
		1904	45,857	354,046	1,169,873	164,510	2,306,121	2,845,556	539,435
		1899	41,247	301,868	909,396	125,196	1,782,863	2,199,204	416,341
2	Textiles and their products.	1914	22,995	1,498,664	2,810,848	672,351	1,993,058	3,414,615	1,421,557
		1909	21,723	1,438,446	2,488,463	592,261	1,745,516	3,060,199	1,314,683
		1904	17,042	1,156,305	1,744,169	419,842	1,246,562	2,147,441	900,879
		1899	17,647	1,022,123	1,340,634	341,652	894,846	1,628,606	733,760
3	Iron and steel and their products.	1914	17,719	1,061,058	4,281,998	723,161	1,762,313	3,223,144	1,460,831
		1909	17,292	1,026,553	3,578,605	635,323	1,799,942	3,164,472	1,364,530
		1904	14,431	868,634	2,351,051	488,598	1,190,794	2,199,776	1,008,982
		1899	14,082	745,235	1,549,318	387,590	1,000,949	1,819,478	818,529
4	Lumber and its manufactures.	1914	42,036	833,529	1,723,456	440,308	762,350	1,599,710	837,360
		1909	48,539	911,593	1,570,549	424,760	717,833	1,588,274	870,441
		1904	32,501	734,136	1,009,950	335,045	517,501	1,219,749	702,248
		1899	34,954	671,696	728,367	253,176	480,930	1,007,532	526,602
5	Leather and its finished products.	1914	6,758	307,060	743,347	169,358	753,135	1,104,595	351,460
		1909	5,728	309,766	659,231	155,112	669,874	992,713	322,839
		1904	5,318	264,459	451,796	120,833	480,221	724,391	244,170
		1899	5,625	248,626	334,734	101,503	396,633	532,048	185,415
6	Paper and printing.	1914	37,196	452,900	1,433,176	296,493	580,715	1,456,046	875,331
		1909	34,828	415,990	1,133,618	242,062	451,239	1,179,285	728,046
		1904	30,803	351,640	803,662	186,423	309,012	859,814	550,802
		1899	26,627	298,744	559,400	140,754	214,566	607,907	398,341
7	Liquors and beverages.	1914	7,562	88,152	1,015,715	69,124	246,188	772,080	525,892
		1909	7,347	77,827	874,107	53,502	186,128	674,311	488,183
		1904	6,379	68,338	659,539	45,144	139,849	501,254	361,405
		1899	5,740	55,120	515,160	33,218	93,515	382,898	289,083
8	Chemicals and allied products.	1914	12,374	299,569	3,034,209	167,494	1,289,848	2,001,634	712,286
		1909	12,060	267,261	2,167,425	129,003	931,045	1,526,599	595,554
		1904	9,826	227,326	1,588,328	102,388	633,919	1,075,519	441,600
		1899	8,928	196,538	1,163,816	77,560	451,457	761,691	310,234
9	Stone, clay, and glass products.	1914	14,747	334,702	987,328	205,419	238,734	614,162	375,428
		1909	16,168	342,827	857,761	189,256	183,792	531,737	347,945
		1904	10,773	285,346	553,785	148,458	123,067	391,148	268,051
		1899	11,524	231,716	335,351	102,846	85,137	270,650	185,513
10	Metals and metal products, other than iron and steel.	1914	10,023	262,154	1,013,632	166,893	1,023,354	1,417,042	393,688
		1909	8,783	249,607	867,405	146,793	892,065	1,240,410	348,345
		1904	5,880	198,531	571,902	110,208	633,132	895,975	252,843
		1899	5,041	161,463	372,663	81,974	472,515	690,974	128,459
11	Tobacco manufactures.	1914	13,951	178,872	303,840	77,856	207,134	490,165	283,031
		1909	15,822	166,810	245,060	69,355	177,186	416,695	239,509
		1904	16,827	159,406	323,983	62,639	126,086	331,111	205,025
		1899	14,959	132,526	111,517	47,975	92,867	263,713	170,846
12	Vehicles for land transportation.	1914	9,909	263,076	803,496	197,078	586,670	1,034,497	447,827
		1909	6,562	202,719	521,457	121,047	308,537	561,763	255,226
		1904	6,058	136,625	287,847	72,659	177,641	320,624	142,983
		1899	7,338	133,663	268,873	63,232	153,254	277,485	124,231
13	Railroad repair shops.	1914	2,011	365,902	417,706	253,150	261,439	552,618	291,179
		1909	1,686	304,592	277,216	195,830	214,581	437,563	222,952
		1904	1,226	247,922	159,792	149,166	156,568	323,212	166,644
		1899	1,400	180,620	130,255	100,411	113,809	227,485	113,676
14	Miscellaneous industries.	1914	19,193	594,465	2,047,842	361,635	835,139	1,749,418	914,279
		1909	16,589	489,480	1,490,019	264,071	679,250	1,360,413	681,163
		1904	13,259	415,669	999,904	204,532	459,735	958,333	498,598
		1899	12,402	332,829	660,772	151,274	342,210	687,256	345,046

FOOD AND KINDRED PRODUCTS.

THE GROUP AS A WHOLE.

This group of industries includes the manufacture of all kinds of food products except liquors and beverages. Measured by the value of products it is the most important of the fourteen groups of industries. It may be subdivided into two subordinate groups, the first covering the output of animal products and the second that of vegetable products. Table 7 gives, for the industries of each subgroup, the principal items of information as reported at the census of 1914. It should be borne in mind that the total value of products for each of the subgroups involves duplication, due to the use of the products of one industry as materials for another in the same subgroup. The duplication is greatest in the subgroup "vegetable products."

The main products of the eleven industries covered by the first division of this table are food products obtained directly or indirectly from animals, using the word "animal" in a broad sense. There were reported for this group of industries 9,970 establishments, with products valued at \$2,105,626,116 for 1914, as compared with 10,561 establishments, with products valued at \$1,700,128,745 for 1909, and 10,584 establishments, with products valued at \$1,131,821,396, for 1904. In 1914 the value of products of these industries formed 43.7 per cent of the total for the group designated "food and kindred products," as compared with 43.2 per cent in 1909 and with 39.8 per cent in 1904.

Of the industries covered by Table 7, seventeen depend primarily upon vegetable products for their material. This subgroup comprised 49,347 establishments, with products valued at \$2,711,083,548, in 1914, as compared with 44,803 establishments, with products valued at \$2,237,489,146, in 1909, and 35,273 establishments, with products to the value of \$1,713,734,376, in 1904.

Table 7

INDUSTRY.	FOOD AND KINDRED PRODUCTS: 1914.						
	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Expressed in thousands.							
Total.....	59,317	496,234	\$2,174,387	\$278,012	\$3,328,512	\$4,816,709	\$988,197
Animal products.....	9,970	137,884	682,625	85,112	1,821,297	2,105,626	284,329
Butter.....	4,356	14,149	59,625	10,120	212,547	243,379	30,832
Cheese.....	3,082	2,908	11,139	2,066	46,759	51,745	4,986
Condensed milk and milk products, other than butter and cheese.....	190	6,002	35,048	3,662	55,720	69,161	13,441
Butter, reworking.....	17	304	1,397	200	5,059	5,869	810
Oleomargarine.....	17	917	2,994	584	10,257	15,080	4,823
Slaughtering and meat packing.....	1,279	98,832	534,274	62,136	1,441,663	1,651,965	210,302
Slaughtering.....	630	8,410	49,707	6,312	173,909	197,470	23,561
Meat packing.....	181	5,105	23,211	3,238	53,099	65,164	12,065
Slaughtering and meat packing.....	468	85,317	461,856	52,586	1,214,655	1,389,331	174,676
Lard, not made in slaughtering and meat-packing establishments.....	6	19	124	12	102	147	45
Poultry, killing and dressing.....	116	1,353	2,282	622	11,206	12,917	1,711
Sausage, not made in slaughtering and meat-packing establishments.....	512	2,244	5,201	1,607	17,292	22,014	4,722
Canned.....	5	13	9	9	37	57	20
All other.....	507	2,231	5,192	1,598	17,255	21,957	4,702
Canning and preserving, fish.....	330	9,069	28,464	3,679	19,467	31,111	11,644
Canning and preserving, oysters.....	65	2,087	2,077	424	1,225	2,238	1,013
Vegetable products.....	49,347	358,350	1,491,762	192,900	2,007,215	2,711,083	703,868
Canning and preserving, fruits and vegetables.....	3,153	50,325	98,738	17,306	103,293	149,176	45,883
Canned vegetables.....	1,990	34,439	65,473	10,914	52,395	79,690	27,205
Canned fruits.....	208	9,453	23,435	4,167	21,665	33,779	12,114
Dried fruits.....	950	6,355	9,467	2,185	29,051	35,302	6,251
All other.....	5	78	373	40	132	405	223
Pickles, preserves, and sauces.....	672	12,590	43,196	5,789	35,673	60,915	25,242
Preserves.....	143	2,561	7,161	1,194	8,601	12,627	4,026
Pickles and sauces.....	529	10,029	36,035	4,595	27,072	48,288	21,216
Chocolate and cocoa products.....	36	4,160	23,085	2,036	24,433	35,713	11,230
Coffee and spice, roasting and grinding.....	696	8,549	56,596	4,508	116,520	150,749	34,229
Coffee.....	658	7,557	54,520	4,068	111,795	143,779	31,984
Spice.....	38	992	2,076	440	4,725	6,970	2,245

Table 7—Continued.

INDUSTRY.	FOOD AND KINDRED PRODUCTS: 1914.						
	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Vegetable products—Continued.							
Confectionery and ice cream.....	4,828	64,034	\$131,170	\$28,317	\$133,787	\$226,828	\$93,041
Confectionery.....	2,317	51,610	86,842	20,644	93,693	153,685	50,992
Chewing gum.....	74	2,048	10,625	828	7,322	17,160	9,838
Ice cream.....	2,437	10,376	33,703	6,845	32,772	55,983	23,211
Cordials and flavoring sirups.....	142	929	5,585	461	7,596	15,316	7,720
Flavoring extracts.....	424	1,461	6,617	689	6,308	11,380	5,072
Flour-mill and gristmill products.....	10,788	39,718	380,257	24,593	752,270	877,680	125,410
Bread and bakery products.....	25,963	124,052	271,262	76,867	274,257	491,893	217,636
Biscuit and crackers.....	166	25,036	89,064	10,795	43,674	89,484	45,810
All other.....	25,797	99,016	182,198	66,072	230,533	402,409	171,826
Food preparations, not elsewhere specified	1,559	20,306	91,039	10,866	153,751	219,333	65,582
Breadstuff preparations such as cereals and table foods.....	137	5,177	29,136	3,134	36,767	59,985	23,218
Lard compounds and other substitutes.....	20	1,762	13,423	765	38,438	47,662	9,224
Macaroni, vermicelli, and noodles.....	373	3,534	8,674	1,638	7,938	12,884	4,946
Meat products, not elsewhere specified	86	712	1,777	362	5,088	6,944	1,856
Sausage casings.....	21	372	213	213	634	1,069	435
Sweetening sirups, other than cane.....	100	1,071	6,622	521	10,064	13,333	3,269
All other preparations for human consumption.....	622	5,142	18,145	2,626	20,670	35,434	14,764
Prepared food for animals and fowls.....	200	2,536	13,049	1,607	34,152	42,022	7,870
Glucose and starch.....	89	4,509	43,642	3,550	40,208	52,615	12,407
Glucose.....	7	2,729	26,572	2,327	29,910	38,619	8,709
Starch.....	82	1,780	17,070	1,223	10,298	13,996	3,698
Peanuts, grading, roasting, cleaning, and shelling.....	61	2,353	3,615	569	12,571	14,996	2,425
Rice, cleaning and polishing.....	59	1,253	12,627	646	20,616	23,039	2,423
Sugar, beet.....	60	7,997	142,181	6,606	41,399	62,605	21,206
Sugar, cane.....	181	3,632	32,997	1,561	15,958	21,635	5,677
Sugar, refining.....	18	11,253	140,500	7,823	264,085	289,399	25,314
Vinegar and cider.....	618	1,229	8,055	713	4,440	7,811	3,371
Vinegar.....	188	809	5,569	500	3,249	5,566	2,317
Cider.....	430	420	2,486	213	1,191	2,245	1,054

BUTTER, CHEESE, AND CONDENSED MILK.

This group of industries covers the manufacture in factories of all grades of butter and cheese, of all varieties of condensed, evaporated, and powdered milk, of sugar of milk, of dried casein, and of whey, but does not include the operations of cream-separating stations unless the stations were operated incidental to butter or cheese factories.

The group comprises three industries, corresponding to the products specified in its designation. Establishments making two or more of the main products are classified according to the product of chief value. The principal statistics for the establishments classified upon this basis are given in Table 223 for "butter," "cheese," and "condensed milk and milk products, other than butter and cheese," respectively. Although separate statistics are shown for each of the three industries, a considerable quantity of butter is made in the establishments classified under "cheese," while some cheese is manufactured by those classed under "butter." The industry, "condensed milk and milk products, other than butter and cheese," includes the manufacture of sugar of milk, which at prior censuses was reported as a branch of the chemical industry. The quantities and values given in Table 9 represent the materials used by and the production of all establishments combined.

At the census of 1849 eight cheese factories, with 55 wage earners, and products valued at \$67,210, were reported; at the census of 1859 there were reported two cheese factories with 7 wage earners and products valued at \$13,400, and one condensed milk factory, with 10 wage earners and products valued at \$48,000; and for 1869 there were reported 1,313 cheese factories, with 4,607 wage earners and products valued at \$16,771,665, but no condensed-milk factories. At every succeeding census, however, butter factories and condensed-milk factories have been reported, as well as cheese factories; and in 1879 the statistics for the three classes of establishments were combined and presented under the common heading "cheese and butter (factory)." The corresponding designation at the census of 1889 was "cheese, butter, and condensed milk, factory product." There were also secured at this census, and

at the censuses of 1899 and 1914, statistics as to the production of butter and cheese in urban dairies, but no such statistics were collected for 1904 and 1909. In cases where the manufacture of butter or cheese formed only a very small portion of the business of the urban dairies, and was incidental to the purchase and sale of milk and cream, the products have been treated as subsidiary products and their quantities and values included in the note to Table 9. As will be seen from this table, considerable quantities of milk and of cream are purchased and sold as such, their value being included in the total value of products.

In 1899 the group designated "cheese, butter, and condensed milk" was treated as one industry. In 1904, as in 1914, the statistics were shown as for three industries, and in 1909 as for one industry with three subclasses. Separate statistics are not given, therefore, for the three industries for any census prior to 1904, but general statistics for the entire group from 1879 to 1914 are presented in Table 8.

CENSUS YEAR.	BUTTER, CHEESE, AND CONDENSED MILK.							
	Number of establishments.	Wage earners (average number).	Primary horse-power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manuf.
1914.....	7,628	23,059	130,862	\$105,812	\$15,848	\$315,026	\$364,285	\$49,259
1909.....	8,479	18,481	101,349	71,284	11,081	235,546	274,558	39,012
1904.....	8,926	15,557	93,845	47,256	8,413	142,920	168,183	25,263
1899.....	9,242	12,799	88,062	36,303	6,146	108,841	130,783	21,942
1889.....	4,552	12,219	25,526	16,017	4,249	49,819	60,636	10,817
1879.....	3,932	7,903	(¹)	9,605	1,546	18,364	25,743	7,379

¹ Not reported.

Table 9 presents, for the census years 1899 to 1914, inclusive, statistics as to quantities and cost of materials and as to quantities and values of products, for the three industries taken as a group.

	BUTTER, CHEESE, AND CONDENSED MILK.			
	1914	1909	1904	1899
MATERIALS.				
Total cost.....	\$315,025,635	\$235,546,064	\$142,920,277	\$108,841,200
Milk:				
Pounds.....	8,431,426,426	9,888,727,303	12,147,304,550	11,678,082,821
Cost.....	\$114,297,630	\$118,675,613	\$99,729,745	\$91,256,436
Cream:				
Pounds.....	2,384,034,699	1,406,143,908	588,186,471	203,673,958
Cost.....	\$160,934,127	\$95,025,507	\$28,371,040	\$8,154,068
Skimmed milk:				
Pounds.....	525,041,086	56,974,760	36,071,335	(¹)
Cost.....	\$994,201	\$110,469	\$59,398	(¹)
Sugar:				
Pounds.....	98,836,640	78,457,978	67,810,031	50,873,859
Cost.....	\$4,408,053	\$3,674,174	\$3,315,892	\$2,589,687
All other materials, cost.....	\$34,391,624	\$18,060,301	\$11,444,202	\$6,841,009
PRODUCTS.				
Total value.....	² \$364,285,150	² \$274,557,718	² \$168,182,789	\$130,783,349
Butter:				
Pounds.....	769,809,781	624,764,653	531,478,141	420,126,546
Value.....	\$218,021,690	\$179,510,619	\$113,189,453	\$84,079,754
Packed solid—				
Pounds.....	476,895,792	410,692,616	364,432,996	328,956,590
Value.....	\$132,259,918	\$115,098,056	\$74,483,306	\$63,961,893
Prints and rolls—				
Pounds.....	292,913,989	214,072,037	167,045,145	91,169,956
Value.....	\$85,761,772	\$64,412,563	\$38,706,147	\$20,117,861

See footnotes on p. 33.

Table 9—Continued.

BUTTER, CHEESE, AND CONDENSED MILK.

	1914	1909	1904	1899
PRODUCTS—continued.				
Cheese:				
Pounds.....	370,278,599	311,126,317	317,144,872	281,972,324
Value.....	\$50,377,018	\$43,239,924	\$28,611,760	\$26,519,829
Full cream—				
Pounds.....	332,690,891	287,110,383		
Value.....	\$47,432,597	\$40,817,073		
Part cream—			239,652,634	225,776,105
Pounds.....	18,378,437	10,803,392	\$22,024,853	\$21,363,477
Value.....	\$1,542,280	\$1,188,000		
Skimmed—				
Pounds.....	13,893,692	7,770,812	3,459,582	(1)
Value.....	\$748,586	\$429,519	\$148,568	(1)
Other kinds—				
Pounds.....	5,375,579	5,441,730	74,032,656	56,196,219
Value.....	\$653,555	\$805,332	\$6,438,339	\$5,156,352
Condensed and evaporated milk:				
Pounds.....	873,410,504	494,796,544	308,485,182	186,921,787
Value.....	\$58,747,252	\$33,563,129	\$20,149,282	\$11,888,792
Condensed, sweetened—				
Pounds.....	267,869,955	214,518,310	198,355,189	(1)
Value.....	\$21,585,139	\$17,345,278	\$13,478,376	(1)
Condensed, unsweetened—				
Pounds.....	331,892,914			
Value.....	\$19,928,014	280,278,234	110,129,993	(1)
Evaporated—				
Pounds.....	273,647,635	\$16,217,851	\$6,670,906	(1)
Value.....	\$17,234,099			
Cream sold:				
Pounds.....	123,511,348	81,211,374	28,131,914	61,764,552
Value.....	\$13,802,063	\$9,823,972	\$2,364,407	\$4,435,444
Skimmed milk sold:				
Pounds.....	166,340,604	352,594,574	1,161,414,457	2,253,494,156
Value.....	\$786,050	\$629,135	\$1,368,738	\$2,531,460
Buttermilk sold:				
Value.....	\$1,278,700	(1)	(1)	(1)
Casein dried from skimmed milk:				
Pounds.....	18,570,220	13,018,298	11,581,874	12,298,405
Value.....	\$977,770	\$795,544	\$554,099	\$383,581
Whey sold:				
Pounds.....	34,079,339	(1)	(1)	(1)
Value.....	\$72,979	(1)	(1)	(1)
Powdered milk:				
Pounds.....	20,454,051	(1)	(1)	(1)
Value.....	\$1,968,259	(1)	(1)	(1)
Sugar of milk:				
Pounds.....	4,051,320	(1)	(1)	(1)
Value.....	\$400,613	(1)	(1)	(1)
Other butter, cheese, or condensed milk factory products, value.....				
	\$11,048,820	(1)	(1)	(1)
All other products, value.....	\$6,803,936	\$6,990,395	\$1,945,050	\$944,489

¹ Not reported separately.

² In addition, similar products were reported by establishments engaged primarily in other industries, as follows:

	1914	1909	1904
Butter:			
Pounds.....	16,193,708	2,381,212	1,971,120
Value.....	\$5,167,634	\$664,171	\$448,729
Cheese:			
Pounds.....	7,234,810	49,413	
Value.....	\$554,907	\$5,745	
Condensed milk:			
Pounds.....	9,702,397	401,300	
Value.....	\$514,348	\$24,078	
Casein and powdered milk:			
Pounds.....	2,381,445		
Value.....	\$166,392		
Other dairy products, value.....		\$25,388	\$71,588

Ice cream, ice, canned goods, food preparations, and other products not ordinarily associated with the manufacture of dairy products, to the value of \$8,801,836 in 1914, were reported as subsidiary products by some of the establishments, and are included in the total for "all other butter, cheese, or condensed milk factory products."

Butter and cheese made on farms.—The large quantities of butter and cheese made on farms are not included in the dairy products covered by the census of manufactures. No data in regard to farm products were collected for 1914, but the production for 1909 amounted to 994,650,610 pounds of butter and 9,405,864 pounds of cheese.

BUTTER, REWORKING.

The statistics shown for this industry cover establishments engaged in reworking or renovating inferior or deteriorated butter, the product being known as "process butter." The Federal Government taxes renovated or "process" butter one-fourth of 1 cent per pound and levies an annual special tax of \$50 on each manufacturer. The statistics in regard to the production of renovated butter are compiled by the Bureau of Internal Revenue of the Treasury Department in connection with the collection of the taxes. According to that bureau, the total production for the fiscal year ended June 30, 1914, was 32,470,030 pounds. Statistics for this industry were not shown separately prior to 1899. The value of products for the industry includes that of a small amount of subsidiary products, such as ice and creamery butter. The renovated or "process" butter made in 1914 by establishments engaged primarily in the manufacture of creamery butter and of oleomargarine was valued at \$1,833,762, as compared with \$3,846,712 in 1909.

OLEOMARGARINE.

The manufacture of this product is allied to the slaughtering and the creamery industries, since the materials consist principally of oleo oil, neutral lard, creamery butter, cream, milk, cottonseed oil, and stearin.

As a rule, the establishments classed under the heading "Oleomargarine" were engaged exclusively in the manufacture of oleomargarine or butterine, only a few reporting lard or other subsidiary products. In addition to the product of establishments engaged primarily in this industry, as given in Table 223, the returns show oleomargarine to the value of \$8,826,576 in 1914, as compared with \$5,963,981 in 1909, manufactured in slaughtering and meat-packing establishments and in connection with the manufacture of butter. The production of oleomargarine during the fiscal year ended June 30, 1914, was reported by the Bureau of Internal Revenue of the Treasury Department as 144,021,276 pounds.

The decline in the industry between 1879 and 1889 was caused primarily by the enforcement of laws in New York state restricting the production of oleomargarine. The value of the output of oleomargarine factories in that state in 1879 amounted to \$5,338,753, but no factories were reported in 1899. The marked decrease between 1899 and 1909 was due largely to the imposition by the Federal Government of a tax of one-fourth of 1 cent a pound on uncolored oleomargarine, and of 10 cents a pound on oleomargarine colored in imitation of butter.

SLAUGHTERING AND MEAT PACKING.

Measured by the value of its products, this industry is the most important in the group. Under this heading are given statistics for wholesale slaughtering and meat-packing establishments, including public abattoirs.

Retail butchering establishments are not intended to be covered, but it is impossible to draw a hard and fast line between wholesale and retail business. It was the purpose to obtain data as to the operations of butchers whose main business was slaughtering for the retail trade, but who also disposed of considerable quantities of meat at wholesale, and the reports for such establishments ordinarily covered both their retail and their wholesale business. Establishments properly included in the wholesale industry at one census might, on account of changes in the character of their business, properly be omitted at another census, although still in operation; and even at the same census, establishments of identical characteristics may have been treated differently by the special agents in different sections of the country. The statistics for the industry, however, may be accepted as representing practically all important establishments engaged wholly, or chiefly, in slaughtering for wholesale trade.

Table 10 gives separate statistics for establishments engaged primarily in slaughtering, those that do both slaughtering and packing, and those engaged primarily in packing.

Table 10

ESTABLISHMENTS ENGAGED PRIMARILY IN—	Census year.	SLAUGHTERING AND MEAT PACKING: 1914 AND 1909.						
		Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Total.....	1914 1909	1,279 1,221	98,832 87,813	\$534,274 378,319	\$62,136 50,404	\$1,441,663 1,191,438	\$1,651,965 1,355,545	\$210,302 164,107
Slaughtering and meat packing.	1914 1909	468 497	85,317 76,637	461,356 325,401	52,586 42,915	1,214,655 1,014,141	1,389,331 1,148,036	174,676 133,895
Slaughtering.....	1914 1909	630 565	8,410 6,418	49,707 34,682	6,312 4,665	173,909 132,202	197,470 151,296	23,561 19,094
Meat packing.....	1914 1909	181 159	5,105 4,758	23,211 18,236	3,238 2,824	53,099 45,095	65,164 56,213	12,065 11,118

At the census of 1849 the industry was called "pork and beef packing"; for 1859 it was included under the designation "provisions;" in 1869 the statistics were collected under four headings, namely: "Meat cured and packed, not specified," "meat packed, beef," "meat packed, pork," and "butchering"; while the designation used for 1879 was "slaughtering and meat packing, not including retail butchering." For 1889 and subsequent censuses, separate figures were secured for "slaughtering and meat packing, wholesale," and "slaughtering, wholesale, not including meat packing." To facilitate comparisons, the statistics for these two classes of establishments are combined and only the totals are given in Table 223.

From the designations applied to this industry, it is evident that the classes of establishments included were not the same at every census, although for the censuses from 1889 to 1914, inclusive, the figures are fairly comparable.

Table 11 presents statistics of materials and products for the wholesale slaughtering and meat-packing industry. It does not cover the manufacture of sausage or the rendering of lard when carried on in independent establishments, nor the operations of retail butchers.

A portion of the dressed meat reported as material was purchased from slaughtering establishments included in the tabulation, and therefore is duplicated in the total value of products.

Table 11

	SLAUGHTERING AND MEAT PACKING.			
	1914	1909	1904	1899
MATERIALS.				
Total cost.....	\$1,441,662,658	\$1,191,438,076	\$805,856,969	\$682,096,839
Beeves:¹				
Number.....	7,149,042	8,114,860	7,147,835	5,525,824
Cost.....	\$490,108,203	\$392,127,010	\$289,040,930	\$247,146,262
Weight (pounds)—				
On the hoof.....	7,076,145,687	8,265,991,836	7,485,407,944	5,908,165,706
Dressed.....	3,786,382,167	4,409,718,922	4,066,264,877	3,222,733,617
Calves:¹				
Number.....	2,019,004	2,504,728	1,568,130	883,857
Cost.....	\$27,623,448	\$25,030,014	\$12,666,557	\$7,252,545
Weight (pounds)—				
On the hoof.....	337,565,316	419,604,080	261,683,572	124,354,340
Dressed.....	206,311,127	262,315,076	161,049,581	79,498,483
Sheep and lambs and goats and kids:¹				
Number.....	15,951,860	12,288,725	² 10,875,339	² 9,110,172
Cost.....	\$84,813,066	\$60,046,161	² \$44,359,804	² \$36,859,832
Weight (pounds)—				
On the hoof.....	1,259,595,728	987,566,521	² 930,168,367	² 764,269,802
Dressed.....	629,723,014	496,640,869	² 464,872,621	² 389,132,646

See footnotes on p. 37.

Table 11—Continued.

	SLAUGHTERING AND MEAT PACKING.			
	1914	1909	1904	1899
MATERIALS—continued.				
Hogs:¹				
Number.....	34, 441, 913	33, 370, 616	30, 977, 639	30, 595, 522
Cost.....	\$597, 097, 518	\$483, 383, 848	\$329, 765, 480	\$278, 370, 494
Weight (pounds)—				
On the hoof.....	7, 277, 670, 937	6, 856, 832, 417	6, 586, 349, 782	6, 676, 709, 331
Dressed.....	5, 476, 236, 776	5, 201, 902, 778	5, 048, 832, 850	5, 203, 280, 487
All other animals, cost.....	\$2, 178, 250	\$138, 548	\$61, 905	\$554, 299
Dressed meat purchased for curing.....	\$124, 334, 692	\$93, 409, 286	\$53, 114, 957	\$54, 247, 986
All other materials.....	\$115, 507, 481	\$137, 303, 209	\$76, 848, 336	\$57, 665, 421
PRODUCTS.				
Total value.....	\$1, 651, 965, 424	\$1, 355, 544, 431	\$913, 914, 624	\$783, 779, 191
Fresh meat:				
Beef—				
Pounds.....	3, 658, 333, 660	4, 209, 196, 668	3, 748, 055, 377	2, 917, 653, 476
Value.....	\$421, 296, 794	\$327, 583, 456	\$247, 096, 724	\$210, 833, 647
Veal—				
Pounds.....	194, 698, 880	252, 997, 078	154, 212, 652	84, 548, 128
Value.....	\$26, 299, 446	\$25, 058, 886	\$12, 856, 369	\$7, 709, 772
Mutton and lamb—				
Pounds.....	629, 232, 690	495, 457, 894	460, 754, 244	400, 812, 014
Value.....	\$74, 675, 627	\$50, 735, 116	\$36, 880, 455	\$32, 681, 457
Pork—				
Pounds.....	1, 877, 099, 071	1, 547, 494, 184	1, 224, 932, 910	1, 222, 007, 411
Value.....	\$226, 535, 734	\$158, 714, 862	\$91, 749, 323	\$83, 934, 324
Edible offal and all other fresh meat—				
Pounds.....	296, 666, 701	257, 809, 083	124, 307, 681	80, 387, 411
Value.....	\$20, 576, 245	\$16, 392, 768	\$9, 579, 718	\$7, 810, 553
Cured meat:				
Beef, pickled and other cured—				
Pounds.....	91, 571, 753	126, 477, 662	136, 896, 697	137, 588, 503
Value.....	\$14, 395, 316	\$12, 159, 152	\$8, 107, 952	\$9, 661, 754
Pork, pickled and other cured—				
Pounds.....	2, 929, 309, 741	2, 829, 633, 003	2, 922, 901, 962	3, 138, 698, 378
Value.....	\$393, 605, 600	\$328, 130, 299	\$248, 837, 321	\$236, 594, 795
Canned goods:				
Pounds.....	160, 798, 955	121, 376, 837	(³)	112, 443, 021
Value.....	\$26, 417, 624	\$15, 345, 543	\$16, 114, 665	\$9, 166, 931
Sausage:				
Canned—				
Pounds.....	4 74, 004, 380	(⁴)	(⁴)	(⁴)
Value.....	4 89, 845, 669	(⁴)	(⁴)	(⁴)
All other—				
Pounds.....	435, 146, 931	452, 867, 187	324, 416, 039	290, 987, 019
Value.....	\$58, 349, 833	\$44, 540, 912	\$25, 056, 331	\$21, 394, 253
Lard, oils, and fats:				
Lard—				
Pounds.....	1, 119, 188, 675	1, 243, 567, 604	1, 169, 086, 400	1, 019, 781, 839
Value.....	\$120, 414, 007	\$134, 396, 587	\$82, 540, 964	\$61, 140, 234
Lard compounds and substitutes—				
Pounds.....	396, 397, 950	(⁵)	(⁵)	(⁵)
Value.....	\$33, 037, 467	(⁵)	(⁵)	(⁵)
Oleo oil—				
Gallons.....	16, 501, 585	19, 692, 172	19, 454, 799	19, 111, 120
Value.....	\$11, 925, 832	\$16, 475, 726	\$10, 201, 911	\$11, 482, 542
Other oils—				
Gallons.....	6, 715, 497	11, 343, 186	4, 893, 133	8, 240, 569
Value.....	\$4, 009, 602	\$6, 350, 745	\$2, 595, 951	\$3, 438, 358
Tallow and oleo stock—				
Pounds.....	209, 614, 135	202, 844, 139	(⁶)	(⁶)
Value.....	\$13, 732, 756	\$13, 499, 659	(⁶)	(⁶)
Stearin:				
Pounds.....	30, 091, 991	54, 957, 997	(⁶)	(⁶)
Value.....	\$2, 752, 421	\$6, 871, 935	(⁶)	(⁶)
Oleomargarine:				
Pounds.....	60, 387, 881	42, 912, 466	(⁶)	(⁶)
Value.....	\$8, 818, 557	\$5, 963, 981	(⁶)	(⁶)
Sausage casings:				
Pounds.....	69, 453, 298	(⁶)	(⁶)	(⁶)
Value.....	\$9, 077, 593	(⁶)	(⁶)	(⁶)
Fertilizers and fertilizer materials:				
Tons.....	294, 388	362, 136	369, 074	6 168, 505
Value.....	\$8, 737, 009	\$8, 726, 818	\$7, 204, 061	6 \$3, 300, 042
Glue and gelatine:				
Pounds.....	40, 844, 650	27, 936, 035	17, 526, 456	(⁶)
Value.....	\$3, 088, 764	\$1, 944, 338	\$1, 087, 719	(⁶)

See footnotes on p. 37.

Table 11—Continued.

PRODUCTS—continued.	SLAUGHTERING AND MEAT PACKING.			
	1914	1909	1904	1899
Hides and skins:				
Cattle—				
Number.....	7,158,862	9,560,138	8,039,204	6,249,414
Pounds.....	415,890,714			
Value.....	\$69,958,593			
Calf—		504,563,930	456,443,857	335,968,207
Number.....	1,464,430	\$68,401,515	\$44,206,107	\$33,883,026
Pounds.....	18,647,761			
Value.....	\$3,512,610			
Sheep and lamb and goat and kid—				
Number.....	15,916,618	11,724,667	7 11,344,544	(⁶)
Value.....	\$13,624,046	\$11,425,235	7 \$8,964,643	(⁶)
Wool:				
Pounds.....	26,432,398	21,858,926	16,377,333	13,176,686
Value.....	\$7,938,212	\$8,327,095	\$5,229,521	\$3,334,439
All other products, including custom work	\$69,340,047	\$94,499,803	\$55,604,889	\$47,473,064

¹ Exclusive of 377,937 beeves, 243,360 calves, 795,519 sheep and lambs and goats and kids, and 2,898,994 hogs, slaughtered for others in 1914.

² Goats and kids not included; no data available.

³ Figures not available.

⁴ Canned sausage was not reported separately at any census prior to 1914, and possibly some was included in "canned goods." The 1914 figures include some sausage in paper cartons and some "all other," for which it was impossible to segregate the quantities and values.

⁵ Not reported separately.

⁶ Represents fertilizers only; figures for fertilizer materials not available.

⁷ Goat and kid skins not included; no data available. Includes pelts purchased for wool pulling.

Many concerns in the slaughtering and meat-packing industry make large quantities of subsidiary products similar to those which form the chief products of other industries distinguished by the census. In the case of some large concerns the branches or departments making such subsidiary products, especially those making fertilizers and soap, are definitely segregated and have complete accounts of their own. In such cases these departments have been treated as separate establishments and classified according to their principal products. In other cases, however, it was impossible to segregate the capital, wages, cost of materials, and other items relating to the manufacture of the subsidiary products. The extent to which the establishments classified in the slaughtering and meat-packing and other industries turned out such subsidiary products is shown in the following statement, in which the values of similar products made by establishments assigned to other classifications are also shown:

Table 12

PRODUCT.	VALUE OF PRODUCTS.			
	Total.	Establishments engaged primarily in manufacturing the product specified. ¹	Establishments in the slaughtering and meat-packing industry.	Establishments assigned to other classifications.
Fertilizers.....	\$176,065,335	\$153,196,152	² \$8,737,009	\$14,132,174
Glue and gelatin.....	19,725,703	13,732,824	3,088,764	2,904,115
Lard.....	122,848,177	146,873	120,414,007	2,287,297
Lard compounds and substitutes.....	89,441,263	47,661,872	33,037,467	8,741,924
Oleomargarine.....	23,898,341	15,079,784	8,818,557	(³)
Sausage ⁴	90,391,714	22,013,506	68,195,522	182,686
Sausage casings.....	10,146,208	1,068,615	9,077,593	(³)
Soap.....	135,304,499	127,942,441	(³)	57,362,058

¹ Includes in some cases products other than those specified.

² Includes a large amount of fertilizer materials.

³ Figures can not be shown without disclosing individual operations.

⁴ Includes canned sausage.

⁵ Includes that made in slaughtering and meat-packing establishments.

Animals slaughtered for food.—The number of animals killed in wholesale slaughtering and meat-packing establishments does not represent the total number of animals slaughtered for food. In order to comply with a special amendment to the Thirteenth Census Act calling for that total, it was necessary at the census of 1909 to make special inquiries from retail slaughterhouses, and to include also figures covering animals slaughtered on farms and ranges, secured through the census of agriculture. The following statement shows the total number as reported for 1909, and is given because it contains the latest official statistics on the subject:

Table 13

KIND.	ANIMALS SLAUGHTERED FOR FOOD: 1909.		
	Total.	In slaughterhouses.	On farms and ranges.
Total.....	88,358,815	69,791,543	18,567,272
Beeves.....	13,611,422	12,202,782	1,408,640
Calves.....	6,515,976	5,384,376	1,131,600
Sheep and lambs.....	14,724,699	14,195,173	529,526
Hogs.....	53,219,568	37,841,051	15,378,517
Goats and kids.....	285,553	166,564	118,989
All other animals.....	1,597	1,597	.....

¹ The inquiry concerning the animals slaughtered on farms listed "sheep" and "goats" without expressly stating that lambs and kids were to be included. Inasmuch as it did distinguish between "calves" and "cattle, other than calves," and listed "hogs and pigs" together, it is possible that the number of sheep reported may not include all the lambs, or the number of goats, all the kids. The omissions, if any, were probably few.

LARD, NOT MADE IN SLAUGHTERING AND MEAT-PACKING ESTABLISHMENTS.

This industry is closely allied to slaughtering and meat packing, as a large proportion of the material used is obtained from the wholesale and retail slaughterhouses. The principal materials are rough lard and leaf lard, which are rendered, refined, and put in shape for the consumer. The refining of lard is now carried on almost wholly in slaughtering and meat-packing establishments (see Table 11, p. 36, and Table 12, p. 37), but in addition, six establishments, with products valued at \$146,873, were reported for 1914.

The production of refined and neutral lards and of lard compounds and other substitutes in slaughtering and meat-packing establishments during 1914 was valued at \$153,451,474, and similar products to the value of \$58,691,093 were reported by establishments engaged primarily in other industries. Probably a considerable proportion of the materials used in the refining establishments was obtained from slaughtering establishments, and the combination of the figures for the products of the three classes of establishments would, therefore, result in a duplication of values. The extent of this duplication can not be determined, but the combination gives \$212,289,440 as the gross value of lard and lard compounds for 1914.

Comparative statistics are omitted from Table 223 for the several censuses, as they are not significant because of changes in the relation of the lard-refining business to the slaughtering and meat-packing industries. Seven establishments were reported for the industry at the census of 1909. During the interim between the censuses one of these establishments went out of business; another changed its product so that at the census of 1914 it was classified under "oleomargarine"; and another was classified under "food preparations, not elsewhere specified" at the census of 1914. The decrease in the manufacture of refined lard since 1879 in establishments assigned to this classification is due in large part to the taking over of that industry by the slaughtering and meat-packing industry, to which it is so closely allied, and also to the remarkable growth in the use of lard compounds and lard substitutes (included under the classification "food preparations, not elsewhere specified"), the production of which in 1914 was valued at \$47,661,872.

POULTRY, KILLING AND DRESSING.

The killing and dressing of poultry was not treated at earlier censuses as a separate industry, although poultry killed and dressed by establishments in the slaughtering and meat-packing industry was reported as a subsidiary product of that industry. A number of important establishments are engaged specially in the killing and dressing of poultry. As a rule the industry is a seasonal one and the establishments are in operation only a few months during the year. There are also a large number of very small establishments that operate only a few weeks each year, for which no reports

could be secured. The statistics, therefore, represent only the more important establishments, that is, those employing five or more wage earners, and should not be accepted as representing the entire industry.

In addition to dressed poultry (chickens, turkeys, ducks, geese, etc.), some establishments also reported the sale of feathers or of eggs, and a few made butter as a subsidiary product.

The value of products covered by Table 7, amounting to \$12,916,608 in 1914, do not include poultry killed and dressed, to the value of \$4,256,367, reported by establishments assigned to other classifications, namely, "butter," "butter, reworking," and "slaughtering and meat packing."

SAUSAGE, NOT MADE IN SLAUGHTERING AND MEAT-PACKING ESTABLISHMENTS.

Sausage is now manufactured principally in the wholesale slaughtering and meat-packing establishments. The statistics for the establishments that make a specialty of sausage, therefore, represent only part of the entire output of this product. Statistics for such establishments, however, have been published separately at each census since 1889. The figures for that year, given in Table 223, include data for some small shops that did not produce for the wholesale trade. Retail meat markets, provision dealers, and delicatessen stores utilize, for the manufacture of sausage, meats that are not disposed of otherwise. Such establishments are not covered by the census of manufactures, and as a result the statistics do not fully represent the production of sausage outside of slaughtering and meat-packing establishments.

The value of the products of establishments assigned to this industry amounted to \$22,013,506. In addition, sausage to the value of \$68,195,522 was reported as a subsidiary product of the slaughtering and meat-packing industry, and to the value of \$182,686 as a subsidiary product of establishments assigned to other industries, making a total of \$90,391,714 as the value of the production of sausage in 1914 as compared with \$59,564,582 in 1909:

Of the total production by slaughtering and meat-packing establishments, canned sausage to the value of \$9,845,669 was reported. As shown by Table 7 (p. 30), there were five establishments, with an output valued at \$57,250, that reported canned sausage as their principal product.

CANNING AND PRESERVING.

In the general tables for 1909 the statistics for the canning and preserving of fish and oysters were combined with those for the canning and preserving of fruits and vegetables and the manufacture of pickles, preserves, and sauces, under the broad classification, "canning and preserving," for the reason that some establishments have products that fall under each of these headings. As a rule the establishments reported at the census of 1914 as canning or preserving fruits and vegetables did not put up fish or oysters, and the majority of those that canned fish did not can oysters. The manufacture of pickles, preserves, and sauces is also carried on largely as a distinct industry. Separate statistics are, therefore, shown in Table 223 for each of the four industries. In addition, canned or sealed-package food products are reported by meat-packing establishments and by some establishments included in the classification, "food preparations."

The great diversity of canned and preserved food products makes it difficult to compile statistics covering all classes, but the following statement gives the values for those that can be identified:

Table 14	KIND.	Value of products.	KIND.	Value of products.
	Total	\$363,898,394	Preserved	\$128,886,697
	Canned	235,011,697	Fish	10,931,818
	Fish	18,585,825	Smoked and dried	2,759,341
	Oysters and clams	3,815,179	Salted and pickled	8,172,477
	Fruits	24,987,174	Dried fruits	34,771,912
	Vegetables	83,682,376	Preserves, jellies, and jams	15,033,346
	Soups	7,877,057	Pickles, olives, catsups, and sauces	51,311,255
	Beef	20,073,934	Sweetening sirups other than cane	15,335,128
	Pork	2,299,307	Peanut butter	1,503,238
	Sausage	9,902,919		
	Other meat products	3,755,000		
	Condensed and evaporated milk	58,747,252		
	All other canned products	1,425,674		

Canning and preserving, fish and oysters.—The principal data for the establishments classified as "canning and preserving, fish," and "canning and preserving, oysters," respectively, are given in Table 223. At the censuses prior to 1889, data for these two industries either were not collected or were combined with those for the catching of fish not intended for canning or curing.

The census does not include statistics for oysters shipped in ice or cold storage and subjected to no other preservative. The instructions to special agents for 1914 provided that "The packing of oysters in hermetically sealed cans should be reported. The packing of oysters in open cans or in other containers where they are not subjected to any preservative process should not be reported unless carried on in connection with the hermetical sealing and preserving of oysters."

At the census of 1914 canned and preserved fish and oysters and other sea foods to the value of \$1,309,596 were reported as subsidiary products by establishments engaged primarily in the canning of fruits and vegetables, and such products to the value of \$608,062 were reported by establishments engaged primarily in the manufacture of other products.

When the value of these products is added to that of the products of the establishments engaged primarily in canning and preserving fish and oysters, and the value of the subsidiary products of the latter group of establishments deducted, the result, \$33,332,822, represents the total value of sea foods canned and preserved, as nearly as can be shown by census figures. This amount is 19.7 per cent greater than the corresponding figure for 1909, approximately \$27,850,000. The production in 1904 was approximately \$22,500,000.

Table 15 shows the quantities and values of fish and oyster products of the canning and preserving group of industries. The items include the production of establishments assigned to other industries in this group, as well as of those assigned to "fish and oysters."

KIND.	CANNING AND PRESERVING, FISH AND OYSTERS.			
	1914	1909	1904	1899
Total value ¹	\$35,267,120	\$28,530,323	\$23,571,499	\$22,273,236
Canned fish and oysters, value.....	\$22,401,004	\$17,592,960	\$13,544,686	\$12,868,572
Salmon—				
Cases of No. 1 size cans.....	1,513,300	2,079,823	1,002,685	(²)
Value.....	\$3,712,695	\$8,723,565	\$4,251,387	\$5,679,324
Sardines—				
Cases of No. ½ size cans.....	5,012,199	4,014,509	(²)	(²)
Value.....	\$6,238,933	\$4,931,831	\$4,380,498	\$4,212,351
Oysters—				
Cases of No. 1 size cans.....	944,639	(²)	(²)	(²)
Value.....	\$2,676,951	\$2,443,101	\$3,812,312	\$2,054,800
Shrimp—				
Cases of No. 1 size cans.....	459,877	171,899	(²)	(²)
Value.....	\$1,725,621	\$390,021	\$478,931	\$225,977
Tuna—				
Cases of No. ½ size cans.....	437,090			
Value.....	\$1,638,675			
Clams—				
Cases of No. 1 size cans.....	185,186	(²)	(²)	(²)
Value.....	\$670,363	\$402,466	\$274,155	\$351,049
All other canned sea foods—				
Cases.....	235,813	(²)	(²)	(²)
Value.....	\$737,766	\$401,976	\$347,403	\$345,071
Salted or pickled fish:				
Pounds.....	131,149,037	133,169,621	113,576,290	117,780,031
Value.....	\$8,172,477	\$7,318,101	\$6,409,012	\$4,981,229
Cod—				
Pounds.....	68,456,917	54,302,338	48,757,819	64,731,210
Value.....	\$5,123,562	\$3,245,669	\$3,013,320	\$3,081,045
Herring—				
Pounds.....	21,133,974	21,718,467	15,824,192	13,933,426
Value.....	\$641,603	\$461,287	\$409,223	\$332,220
Mackerel—				
Pounds.....	6,224,313	9,045,469	8,326,566	10,458,313
Value.....	\$519,727	\$740,513	\$678,326	\$662,008
Haddock—				
Pounds.....	4,947,286	3,065,156	4,737,975	6,927,919
Value.....	\$218,359	\$145,191	\$213,394	\$197,360
All other—				
Pounds.....	30,386,547	45,038,191	35,929,738	21,729,163
Value.....	\$1,669,226	\$2,719,441	\$2,094,749	\$708,596

See footnotes on p. 41.

Table 15—Continued. KIND.	CANNING AND PRESERVING, FISH AND OYSTERS.			
	1914	1909	1904	1899
Smoked or dried fish:				
Pounds.....	28, 713, 806	40, 739, 774	36, 617, 904	21, 108, 066
Value.....	\$2, 759, 341	\$2, 939, 258	\$2, 528, 240	\$957, 741
Herring—				
Pounds.....	11, 504, 126	21, 369, 856	19, 737, 537	12, 576, 429
Value.....	\$719, 640	\$931, 611	\$631, 352	\$330, 590
Salmon—				
Pounds.....	4, 248, 896	6, 836, 099	6, 833, 560	1, 975, 647
Value.....	\$638, 975	\$950, 540	\$831, 184	\$136, 331
Finnan haddie—				
Pounds.....	4, 095, 693	4, 513, 222	3, 014, 160	1, 360, 500
Value.....	\$327, 877	\$304, 620	\$174, 234	\$75, 360
Sturgeon—				
Pounds.....	511, 196	620, 437	.....	.....
Value.....	\$150, 614	\$182, 786	.....	.....
All other smoked or dried fish—				
Pounds.....	8, 353, 895	7, 400, 160	7, 032, 647	5, 195, 490
Value.....	\$922, 235	\$569, 701	\$891, 470	\$415, 460
All other products, value.....	\$1, 934, 298	\$680, 004	\$1, 089, 561	\$3, 465, 694

¹ Includes for 1914, 1909, and 1904 values of similar products reported by establishments engaged primarily in other industries, as follows:

	1914	1909	1904
Canned fish and oysters:			
Cases.....	494, 372	.....	.....
Value.....	\$1, 409, 140	\$19, 649	\$12, 900
Salted fish:			
Pounds.....	3, 905, 372	4, 630, 332	1, 847, 625
Value.....	\$388, 498	\$143, 540	\$274, 403
Smoked fish:			
Pounds.....	1, 316, 575	924, 785	.....
Value.....	\$120, 030	\$38, 841	.....

² Figures not available.

The preceding table does not cover the products of the fish canneries and salting stations in Alaska. The quantities and values of these products, for 1914 and 1909 are given in the following statement. The statistics for 1914 in this table are taken from the annual report of the Commissioner of Fisheries.

Table 16 KIND.	ALASKAN FISHERIES.	
	1914	1909
Total value.....	\$19, 948, 274	\$9, 122, 594
Canned salmon:		
Cases of No. 1 size cans.....	4, 056, 653	2, 393, 927
Value.....	\$18, 920, 589	\$8, 896, 987
Mild cured and salted fish:		
Pounds.....	25, 014, 552	6, 065, 731
Value.....	\$1, 027, 685	\$225, 607

Canning and preserving, fruits and vegetables.—The statistics presented for this industry cover the canning of vegetables, the canning and preserving of fruits, and the “processing” and packing of dried fruits by packing houses that make a specialty of such work, but not the drying and packing of fruits by the grower on the farm. The majority of the establishments make a specialty of either vegetables or fruits, but a number treat both, and at prior censuses the general statistics of capital, employees, wages, etc., were shown for the combined industry only. A subclassification has been made for 1914, however, in which the establishments have been grouped, according to the product of chief value, under “canned vegetables,” “canned fruits,” “dried fruits,” and “other products.” (See Table 7, p. 30.)

The following table gives the quantities and values of the several products of the industry for 1914, 1909, 1904, and 1899:

Table 17 KIND.	CANNING AND PRESERVING, FRUITS AND VEGETABLES. ¹			
	1914	1909	1904	1899
Total value.....	² \$158,015,702	² \$96,032,205	² \$78,857,942	\$57,010,313
Canned vegetables, value.....	\$84,413,667	\$53,443,001	\$45,899,131	\$28,734,598
Tomatoes—				
Cases, No. 3 size cans.....	16,200,302	12,909,936	9,411,084	8,700,538
Value.....	\$25,532,217	\$18,747,941	\$14,020,846	\$13,666,560
Beans—				
Cases, No. 2 size cans.....	8,994,302	3,564,033	2,588,015	1,493,517
Value.....	\$16,565,021	\$6,305,797	\$4,133,810	\$2,025,123
Peas—				
Cases, No. 2 size cans.....	8,326,284	5,901,703	4,694,492	2,543,722
Value.....	\$15,089,047	\$10,247,363	\$7,928,791	\$4,465,673
Corn—				
Cases, No. 2 size cans.....	9,919,950	7,451,265	11,209,597	6,336,984
Value.....	\$13,923,057	\$10,332,136	\$15,952,386	\$8,191,383
Asparagus—				
Cases, No. 2 size cans.....	637,601	342,838	(³)	(³)
Value.....	\$2,790,817	\$1,975,775	(³)	(³)
Kraut—				
Cases, No. 3 size cans.....	1,184,219	(³)	(³)	(³)
Value.....	\$1,567,717	(³)	(³)	(³)
Tomato pulp—				
Cases, No. 10 size cans.....	752,151	(³)	(³)	(³)
Value.....	\$1,454,051	(³)	(³)	(³)
Pumpkin—				
Cases, No. 3 size cans.....	789,368	440,303	246,557	138,078
Value.....	\$1,023,008	\$576,043	\$346,497	\$202,404
Sweet potatoes—				
Cases, No. 3 size cans.....	454,415	347,236	192,997	83,526
Value.....	\$736,759	\$531,651	\$284,385	\$124,245
Spinach—				
Cases, No. 3 size cans.....	391,790	149,255	(³)	(³)
Value.....	\$736,686	\$294,414	(³)	(³)
Hominy—				
Cases, No. 3 size cans.....	686,100	(³)	(³)	(³)
Value.....	\$712,991	(³)	(³)	(³)
Beets—				
Cases, No. 3 size cans.....	251,632	126,422	(³)	(³)
Value.....	\$511,900	\$261,398	(³)	(³)
Succotash—				
Cases, No. 2 size cans.....	270,077	254,365	(³)	(³)
Value.....	\$455,956	\$320,141	(³)	(³)
All other canned vegetables—				
Cases.....	900,483	2,317,453	1,377,137	27,365
Value.....	⁴ \$3,314,440	\$3,850,342	\$3,232,416	\$59,210
Canned soups:				
Cases, No. 1 size cans.....	4,886,098	853,840		
Value.....	\$7,877,057	\$2,588,834		
Canned fruits, value.....	\$24,897,174	\$13,015,438	\$11,722,979	\$11,311,062
Peaches—				
Cases, No. 3 size cans.....	3,407,906	1,487,213	1,304,867	1,443,356
Value.....	\$9,585,773	\$3,753,698	\$3,902,441	\$4,283,165
Pears—				
Cases, No. 3 size cans.....	1,062,762	637,782	789,120	672,485
Value.....	\$3,853,700	\$1,833,214	\$2,192,910	\$2,188,201
Berries—				
Cases, No. 2 size cans.....	1,333,449	815,851	489,637	600,419
Value.....	\$3,102,245	\$1,754,927	\$1,058,659	\$1,092,975
Apricots—				
Cases, No. 3 size cans.....	1,051,816	630,185	539,815	531,648
Value.....	\$3,060,626	\$1,825,311	\$1,641,919	\$1,583,252
Apples—				
Cases, No. 3 size cans.....	1,514,939	1,205,742	490,341	645,702
Value.....	\$2,392,289	\$1,898,720	\$738,313	\$1,125,119
Cherries—				
Cases, No. 2 size cans.....	543,213	390,351	319,350	114,367
Value.....	\$1,628,975	\$1,019,013	\$825,522	\$307,788
Plums—				
Cases, No. 2 size cans.....	288,326	220,057	(⁵)	(⁵)
Value.....	\$438,238	\$346,953	(⁵)	(⁵)
Pineapples—				
Cases, No. 3 size cans.....	94,140	78,557	(⁵)	(⁵)
Value.....	\$364,250	\$313,647	(⁵)	(⁵)

See footnotes on p. 43.

KIND.	CANNING AND PRESERVING, FRUITS AND VEGETABLES. ¹			
	1914	1909	1904	1899
Canned fruits—Continued.				
Figs—				
Cases, No. 3 size cans.....	20, 605	5, 079	(^o)	(^o)
Value.....	\$159, 522	\$49, 970	(^o)	(^o)
All other canned fruits—				
Cases.....	132, 026	78, 061	695, 111	453, 780
Value.....	\$311, 556	\$219, 985	\$1, 363, 515	\$730, 562
Dried fruits:				
Pounds.....	521, 397, 394	454, 890, 461	325, 375, 798	84, 737, 900
Value.....	\$34, 771, 912	\$21, 968, 154	\$15, 064, 784	\$4, 757, 005
Raisins—				
Pounds.....	226, 043, 959	195, 774, 767	121, 409, 881	14, 984, 221
Value.....	\$13, 938, 645	\$6, 912, 533	\$6, 349, 381	\$1, 062, 268
Prunes—				
Pounds.....	139, 091, 887	138, 498, 490	117, 808, 181	25, 413, 763
Value.....	\$9, 004, 348	\$5, 130, 412	\$3, 299, 628	\$970, 927
Apricots—				
Pounds.....	39, 397, 294	29, 205, 569	19, 559, 573	5, 465, 217
Value.....	\$3, 615, 857	\$2, 277, 177	\$1, 410, 838	\$455, 894
Peaches—				
Pounds.....	61, 907, 251	46, 843, 391	25, 861, 074	5, 662, 390
Value.....	\$2, 915, 595	\$2, 423, 083	\$1, 702, 205	\$312, 495
Apples—				
Pounds.....	54, 957, 003	44, 568, 244	40, 737, 089	33, 212, 309
Value.....	\$2, 889, 406	\$3, 098, 095	\$1, 758, 610	\$1, 906, 642
All other dried fruits—				
Value.....	\$2, 408, 061	\$2, 126, 854	\$1, 144, 122	\$49, 279
All other products, value.....	\$6, 055, 892	\$5, 016, 778	\$5, 571, 048	\$12, 207, 648

¹ The figures given in this table do not agree with those in the general tables, for the reason that this table includes data for fruits and vegetables canned and preserved by establishments engaged primarily in other industries, and for the further reason that certain changes have been made in the figures for 1909, 1904, and 1899 in order to make them include the same class of data as those for 1914.

² Includes values of similar products reported by establishments engaged primarily in other industries, as follows:

	1914	1909	1904
Vegetables, canned:			
Cases.....	2, 599, 413	769, 017	140, 263
Value.....	\$7, 440, 464	\$1, 714, 909	\$288, 138
Soups, canned:			
Cases.....	400, 466		
Value.....	\$792, 258		
Fruit, canned:			
Cases.....	148, 070	27, 474	
Value.....	\$441, 738	\$76, 964	
Dried fruit:			
Value.....	\$150, 561	\$53, 159	

³ Included in "all other canned vegetables."

⁴ Includes meat products, canned, valued at \$781,291.

⁵ Included in "all other canned fruits."

The case, which is used as the unit of measure for canned goods, consists of 24 standard-size cans—No. 2 for beans, corn, peas, berries, cherries, and plums, and No. 3 for all other fruits and vegetables, except in the Pacific Coast states, where No. 2¹ is the principal size used for all fruits and vegetables. Where the output was reported by the canneries in cans of other sizes than No. 2 and No. 3 the quantities so reported have been reduced to equivalent standard cases.

Dried fruit.—In some localities the drying and packing of fruit has reached such a stage of development as to bring it within the scope of the census. This is especially true when the fruit is dipped in hot water or placed in sulphur fumes, or where raisins are seeded and other processes performed. The majority of the establishments engaged in this branch of the industry are in California, where the value of the factory dried-fruit product in 1914 was \$30,735,350, or 88.4 per cent of the total value of this class of products reported for the United States, as compared with \$18,212,316, or 82.9 per cent, in 1909.

The statistics cover the product of fruit drying and packing establishments which buy the fruit or do drying and packing for others and of cooperative associations, but do not cover fruits dried by the grower on the farm.

Pickles, preserves, and sauces.—This industry is closely allied to “canning and preserving, fruits and vegetables.”

In 1914, to secure figures comparable with those of exports, this industry was subdivided into “preserves,” and “pickles and sauces.” Under the designation “preserves” were included those establishments manufacturing as their products of chief value jams, jellies, fruit butter, etc., while under the class “pickles and sauces” were included those establishments whose products of chief value are pickles, olives, sauces, salad dressing, mustards, prepared horseradish, catsups, etc. The statistics for these two classes are given in Table 7.

Large quantities of preserves and of pickles and sauces are also made by establishments engaged primarily in canning and preserving fruits and vegetables. The value of this production in 1914 amounted to \$834,678 for preserves and to \$1,089,806 for pickles and sauces. In addition, preserves to the value of \$1,571,712, and pickles and sauces to the value of \$1,933,873 were made by establishments engaged primarily in other industries.

CHOCOLATE AND COCOA PRODUCTS, NOT INCLUDING CONFECTIONERY.

Under this classification is included the manufacture of practically all of the products of the nut of the cacao tree, such as chocolate, cocoa, cocoa butter, and broma. It does not cover establishments making primarily chocolate confectionery, although some of the establishments included under this classification reported such confectionery as a subsidiary product.

Thirteen establishments in 1914, assigned, respectively, to the industries “confectionery,” “coffee, roasting and grinding,” “baking powders,” and “flavoring extracts,” reported chocolate and cocoa products to the value of \$758,625, as compared with three establishments in 1909, with products valued at \$327,008.

COFFEE AND SPICE, ROASTING AND GRINDING.

The roasting of coffee and the grinding of spice are frequently carried on in connection with the wholesale grocery business. For many establishments it is impossible to separate the data for these manufacturing processes from those for the mercantile transactions, and it is probable that the statistics for this industry represent a larger proportion of purely mercantile business than is the case with any other branch of manufacture. More care has probably been exercised in respect to this matter at recent censuses than formerly.

Some of the establishments included under the classification “coffee and spice, roasting and grinding,” also manufactured baking powders, bicarbonate of soda, bluing, household ammonia, mustard, cream of tartar, flavoring extracts, chocolate and cocoa, peanut butter, preserves, gelatine, pancake flour, cereals, and similar commodities as subsidiary products. In many instances it was possible to obtain separate values for these products, and in such cases the figures for them are given under the proper classification.

Since a number of the establishments in this industry specialize in the treatment of spices, separate statistics are given in Table 7 for the two branches of the industry, the establishments being assigned according to the product of chief value. This separation is not satisfactory, however, because of the large quantities of coffee (amounting in value to \$3,253,678) reported by the establishments classified under “spice” and of spices (amounting in value to \$346,602) included in the total for establishments classified under “coffee.” In addition, coffee to the value of \$1,789,704 and spices to the value of \$906,096 were reported by establishments engaged primarily in other industries.

PEANUTS, GRADING, ROASTING, CLEANING, AND SHELLING.

The statistics for this industry cover the various operations connected with the preparation of peanuts for the market. As a rule, the establishments are located in the states where the peanuts are grown, and are engaged exclusively in handling peanuts, no other products being reported. Some peanuts are, however, handled by coffee and spice concerns. Separate statistics were first published for this industry at the census of 1904, it having been treated as a part of “coffee and spices, roasting and grinding,” at prior censuses. In addition, peanuts to the value of \$419,227 in 1914 and to the value of \$306,731 in 1909, were reported by establishments classified under “coffee and spice, roasting and grinding” and “confectionery and ice cream.”

CONFECTIONERY AND ICE CREAM.

This classification covers the manufacture of all kinds of candy and confections, ice cream, cake ornaments, popcorn balls or cakes, chewing gum, salted nuts, stuffed dates, and similar products. It does not cover the operations of establishments making primarily chocolate, cocoa, and similar products, which are classified under "chocolate and cocoa products." Establishments engaged primarily in the making of confectionery in many cases have subsidiary products of different character. At censuses prior to that of 1914 the manufacture of ice cream was not included except in cases where it was made as a subsidiary product in connection with the manufacture of confectionery or of some other class of products for which statistics were collected.

Table 7 gives, for 1914, the general statistics for the industry and subclasses the establishments according to the product of chief value, under the heads of "confectionery," "chewing gum," and "ice cream."

For 1914, confectionery to the value of \$1,630,161 was reported by establishments engaged primarily in the manufacture of ice cream; and to the value of \$5,910,774 by establishments manufacturing chewing gum, and by other establishments, notably those classified under "bread and bakery products." The value of the total production in 1914, so far as it can be identified, was \$161,226,458, which compares with \$140,092,007 for 1909.

The value of ice cream manufactured in 1914 by establishments engaged primarily in the production of confectionery was \$2,367,675, and ice cream to the value of \$10,365,222 was reported by establishments in other industries. The value of the ice cream manufactured by dairies and butter factories alone amounted to \$5,616,197, and by bakeries to \$3,997,885. Large quantities were also reported by manufacturers of mineral and soda waters and of ice. The value of the total production for 1914, so far as it can be identified, was \$68,716,030.

The value of products given for establishments engaged primarily in the manufacture of chewing gum does not include \$59,954, reported as the value of chewing gum made by six establishments engaged primarily in the manufacture of confectionery, nor \$23,200, reported as the value of chewing gum made by other establishments. The total production, so far as it can be identified, was valued at \$17,242,761.

Prior to 1899 the statistics for this industry included data for the numerous small retail makers of confectionery, which fact accounts for the great decrease in the number of establishments between 1889 and 1899 shown in Table 223.

CORDIALS AND FLAVORING SIRUPS.

This industry includes the manufacture of cordials and bitters and of sirups for flavoring and for medicinal purposes, and is closely allied with the manufacture of flavoring extracts, the products of the two industries overlapping to a considerable extent. Among the products reported were liquors, crème de menthe, vermouth, coco-cola sirup, rock candy, fruit and fountain sirups, orange bitters, apricot cordial, tincture of ginger, etc.

Since the classification "flavoring extracts" first appeared at the census of 1879, it is probable that for 1869 many of the establishments making flavoring extracts were included with those making cordials and flavoring sirups, which would explain the decreases shown between 1869 and 1879.

Establishments engaged primarily in the manufacture of other products, principally pickles and preserves and mineral and soda waters, reported for 1914, cordials and flavoring sirups to the value of \$672,110, and for 1909 to the value of \$400,325.

FLAVORING EXTRACTS.

This industry is, as already stated, closely allied with the making of cordials and flavoring sirups. The classification covers the manufacture of extracts, pastes, and powders for flavoring soda water, ice cream, and other food products, of colors for bakers and confectioners, and of fruit juices. Some of the establishments reported subsidiary products, including not only cordials and flavoring sirups, but also perfumery, cosmetics, baking powders, household ammonia, roasted coffee, ground spices, food preparations, and patent medicines.

For 1914, 298 establishments assigned to other industries, principally those designated as "coffee and spice, roasting and grinding," "confectionery and ice cream," "patent medicines and compounds," "perfumery and cosmetics," "soap," and "baking powders," reported as subsidiary products flavoring extracts to the value of \$4,762,617; and for 1909, flavoring extracts valued at \$4,695,724 were reported by 397 similar establishments. These amounts are not included in Table 223.

The value of products other than flavoring extracts made by the establishments placed under this classification amounted to \$924,689 in 1914 and to \$1,127,746 in 1909.

FLOUR-MILL AND GRISTMILL PRODUCTS.

Measured by value of products, this is the most important industry included in the subgroup comprising industries manufacturing vegetable food products. It furnishes the major portion of the materials used in making bread and bakery products, and part of the materials for a number of other industries included in this subgroup. The value of flour-mill and gristmill products, therefore, is largely duplicated in the total value of products for the subgroup.

The classification covers merchant mills that grind cereals of every variety, but not establishments that manufacture primarily special cereal food preparations or breakfast foods, such as rolled oats, puffed rice, corn flakes, etc., nor those making cattle and poultry feed, such establishments being classed under "food preparations." As shown by Table 19, the flour mills and gristmills produce considerable quantities of breakfast foods, rolled oats, and similar products. Data for mills which grind exclusively for toll—"custom mills"—were not collected at the census of 1914. Statistics for such mills were collected at previous censuses, except that of 1904. While these mills were reported at the censuses of 1909 and 1899, the statistics for them have been excluded from the tables presenting statistics for those years in comparison with 1904 and 1914.

The answer to the inquiry "Is merchant, or merchant and exchange, grinding done?" determined whether the mill should be treated as a merchant or as a custom mill. Many small mills reported merchant grinding, and data for them are therefore included in the tables. The custom mills exceeded in number the merchant mills in both 1909 and 1899, but the value of products of the merchant mills constituted 94.1 per cent of the total in 1909 and 89.4 per cent in 1899. For the censuses prior to 1899 it is impossible to segregate the statistics for custom mills from those for merchant mills, for which reason the comparison in Table 223 is confined to the censuses from 1899 to 1914, inclusive.

Although statistics covering custom mills are not available for 1914, the figures for merchant and custom mills combined for the decennial censuses of 1909 and prior years are of interest, and in connection with those relating to merchant mills alone, for 1909 and 1899, as given in Table 223, indicate the relative importance of the custom mills.

The following table presents statistics for all flour mills and gristmills, both merchant and custom, for the decennial censuses from 1849 to 1909, inclusive.

CENSUS YEAR.	Number of establishments.	Wage earners (average number).	Primary horse-power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1909.....	23,652	46,467	1,126,347	\$370,410	\$22,603	\$813,891	\$938,700	\$124,809
1899.....	25,258	37,073	1,014,872	218,714	17,703	475,826	560,719	84,893
1889.....	18,470	47,403	752,365	208,474	18,138	434,152	513,971	79,819
1879.....	24,338	53,407	771,201	177,362	17,422	441,545	505,186	63,641
1869.....	22,573	58,448	576,686	151,565	14,578	367,392	444,985	77,593
1859.....	13,868	27,682	.....	84,585	8,721	208,497	248,580	40,083
1849.....	11,891	23,310	.....	54,416	5,680	113,037	136,057	23,020

Table 19 presents statistics of materials and products for flour mills and gristmills but does not include data for establishments engaged exclusively in custom grinding.

Table 19	FLOUR-MILL AND GRISTMILL PRODUCTS.			
	1914	1909	1904	1899
MATERIALS.				
Total cost.....	\$752, 270, 021	\$767, 576, 479	\$619, 971, 161	\$428, 116, 757
Grain ground or milled, bushels.....	818, 929, 321	806, 247, 961	754, 945, 729	729, 061, 820
Wheat.....	545, 728, 431	496, 480, 314	494, 095, 083	471, 306, 986
Corn.....	180, 115, 704	209, 281, 237	178, 217, 321	180, 573, 076
Rye.....	12, 813, 831	11, 503, 969	11, 480, 370	10, 088, 381
Buckwheat.....	5, 478, 045	7, 156, 062	6, 531, 305	5, 490, 156
Barley.....	20, 288, 396	24, 509, 770	18, 628, 552	10, 067, 348
Oats.....	50, 227, 050	50, 241, 598	45, 381, 009	47, 175, 766
Other.....	4, 277, 864	7, 075, 011	612, 089	4, 360, 107
PRODUCTS.				
Total value.....	¹ \$877, 679, 709	² \$883, 584, 405	³ \$713, 033, 395	\$501, 396, 304
Wheat flour:				
Barrels.....	116, 403, 770	105, 756, 645	104, 013, 278	99, 763, 777
Value.....	\$543, 839, 568	\$550, 116, 254	\$480, 258, 514	\$333, 997, 686
White—				
Barrels.....	115, 829, 791	105, 321, 969	103, 608, 350	(⁴)
Value.....	\$541, 157, 994	\$548, 017, 654	\$478, 484, 601	(⁴)
Graham and whole wheat—				
Barrels.....	573, 979	434, 676	404, 928	(⁴)
Value.....	\$2, 681, 574	\$2, 098, 600	\$1, 773, 913	(⁴)
Rye flour and rye graham:				
Barrels.....	1, 937, 385	1, 532, 139	1, 503, 100	1, 443, 339
Value.....	\$7, 845, 213	\$6, 383, 538	\$5, 892, 108	\$4, 145, 565
Buckwheat flour:				
Pounds.....	125, 622, 189	176, 081, 891	175, 354, 062	143, 190, 724
Value.....	\$3, 754, 857	\$4, 663, 561	\$4, 379, 359	\$3, 190, 152
Barley meal:				
Pounds.....	14, 000, 789	28, 550, 952	68, 508, 655	91, 275, 646
Value.....	\$242, 343	\$486, 000	\$922, 884	\$963, 710
Corn meal and corn flour:				
Barrels.....	16, 327, 993	21, 552, 737	23, 624, 693	27, 838, 811
Value.....	\$54, 963, 301	\$66, 941, 095	\$56, 368, 556	\$52, 167, 739
Hominy and grits:				
Pounds.....	870, 364, 453	827, 987, 702	756, 861, 398	291, 726, 145
Value.....	\$13, 767, 561	\$12, 509, 493	\$8, 455, 420	\$2, 567, 084
Bran and middlings:				
Tons.....	4, 666, 534			
Value.....	\$104, 702, 735	9, 236, 411	7, 925, 412	7, 157, 488
Feed and offal:				
Tons.....	4, 753, 280	\$230, 356, 342	\$152, 201, 659	\$99, 690, 617
Value.....	\$137, 067, 959			
Oatmeal:				
Pounds.....	30, 451, 581			
Value.....	\$757, 804	\$4, 720, 106	(⁴)	(⁴)
Breakfast foods, rolled oats, etc.:				
Pounds.....	92, 676, 085			
Value.....	\$2, 932, 238			
All other cereal products, value.....	\$2, 091, 922			
Corn oil, value.....	\$152, 208	(⁴)	(⁴)	(⁴)
All other products, value.....	\$5, 562, 000	\$7, 408, 016	\$4, 554, 895	\$4, 673, 751

¹ In addition, merchant-ground products, valued at \$9,046,449, were made by establishments engaged primarily in the manufacture of products other than those covered by the industry designation. The items covered by this amount were: Wheat flour, valued at \$2,500,937; rye flour, \$125,887; buckwheat flour, \$4,236; barley meal, \$114,176; corn meal and corn flour, \$1,065,830; hominy and grits, \$1,268,612; oatmeal, \$160; bran and middlings, \$492,351; feed and offal, \$2,810,431; corn oil, \$115,891; and breakfast foods, \$547,938.

² In addition, breakfast foods, to the value of \$36,978,613, were made by establishments engaged primarily in the manufacture of food preparations; and merchant-ground products, valued at \$1,637,228, were made by establishments engaged primarily in the manufacture of products other than those covered by the industry designation. The items covered by the latter amount were wheat flour, valued at \$614,952; corn meal, \$87,507; rye flour, \$12,330; feed, \$907,165; and offal, \$15,274.

³ In addition, breakfast foods, to the value of \$23,904,952, were made by establishments engaged primarily in the manufacture of food preparations.

⁴ Not reported separately.

Some merchant mills were reported for 1914 as grinding cereals for feed for live stock as their chief, and in some instances their only, product; and other mills manufactured feed as a subsidiary product. The total production of feed and offal, as shown by the table, amounted to 4,753,280 tons, valued at \$137,067,959.

BREAD AND OTHER BAKERY PRODUCTS.

This classification covers the baking of bread, crackers, pies, cakes, pastry, pretzels, etc.

The small neighborhood bakeries, as well as the large factories, were included at the census of 1914, provided their product during the census year exceeded \$500 in value. The statistics, however, do not cover the making of bread or bakery products in hotels, restaurants, boarding houses, or private houses. Data as to the quantities of specific products were not called for by the schedule.

While the wording of the class designation has changed slightly at different censuses, it has evidently been intended to cover practically the same class of establishments at each census since and including 1849. The rapid growth of the industry indicates the gradual transfer of a large part of the baking from homes to factories.

Some establishments make a specialty of biscuits and crackers. This branch of the industry has developed to so great an extent as to justify the presentation of separate figures for it, and these are given in Table 7.

Biscuits and crackers to the value of \$1,278,916 were reported by manufacturers of other bakery products, and to the value of \$2,094,845 by establishments assigned to other industries, principally "confectionery."

Bakery products, other than biscuits and crackers, to the value of \$3,009,133 were made by biscuit and cracker factories, and to the value of \$2,349,660 by establishments assigned to other industries, principally manufacturers of ice cream and of confectionery.

For 1909, biscuits and crackers and other bakery products valued at \$2,359,063 were reported as subsidiary products by establishments assigned to other industries.

FOOD PREPARATIONS, NOT ELSEWHERE SPECIFIED.

This classification covers the manufacture of food products not included under some more specific heading. Most of the establishments were engaged principally in the manufacture of "cereal" or "breakfast-food" preparations, although lard compounds and other substitutes; macaroni, vermicelli, spaghetti, etc.; meat products, such as potted and canned meats, mince, etc.; sausage casings; blended and refined sirup made from maple and other sugar; ice-cream cones; peanut butter; pulverized sugar; shelled nuts; coffee substitutes; saratoga chips; pie fillings; meat-curing preparations; sausage flavorings; desiccated eggs, etc., are among the products. Establishments that made a specialty of poultry and animal feed are also included in this industry. No establishments were reported at the census of 1914 as engaged in the manufacture of peanut oil, but 60 establishments reported the production of peanut butter to the value of \$1,503,238.

A separate presentation was made at the census of 1869 for establishments in the food-products industry which manufactured commodities intended to be fed to animals, but no such presentation was made at the census of 1879. It seems probable, therefore, that products of this character were included to a less extent for 1879 than for the earlier year. Such a change in the scope of the industry would explain in part the decrease in the value of products between 1869 and 1879, though this was also due in large measure to the higher nominal values shown in the depreciated currency of 1869.

The inclusion of the blending and refining of sirups for 1909 accounts in part for the large increases between 1904 and 1909.

Table 20 gives, for 1914 and 1909, separate statistics for the establishments engaged primarily in the manufacture of food for human consumption and of feed for animals and poultry, respectively.

In addition to the classification shown in this table, for which comparative figures are available for the two censuses, a further segregation has been made of the reports for 1914 for establishments that manufacture food preparations for human consumption. Table 7 gives the general statistics for these various subclasses.

There are also included as products of the canning and preserving industry considerable quantities of canned soups and other food products similar to those reported by some of the establishments classified as food preparations. The statistics for those products are shown in Table 17.

For 1914 the production of breakfast foods, including oatmeal, rolled oats, etc., valued at \$5,781,964, was reported by flour mills and gristmills; and "breadstuff preparations" to the value of \$59,434 were reported by manufacturers of other food preparations, and to the value of \$1,289,104 by establishments assigned to other industries.

"Lard compounds and other substitutes" to the value of \$33,037,467 were reported by slaughtering and meat-packing establishments, and to the value of \$8,741,924 by manufacturers of cottonseed oil, soap, and tallow.

Table 20

FOOD PREPARATIONS, NOT ELSEWHERE SPECIFIED.

ESTABLISHMENTS MANUFACTURING PRIMARILY—	Num- ber of estab- lish- ments.	Wage earners (aver- age num- ber).	Pri- mary horse- power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manu- facture.
Total, 1914.....	1,559	20,306	80,022	\$91,039	\$10,866	\$153,751	\$219,333	\$65,582
1909.....	1,213	14,968	55,166	64,685	7,043	83,942	125,831	41,389
Foods for human consumption:								
1914.....	1,359	17,770	56,744	77,990	9,259	119,599	177,311	57,712
1909.....	1,021	13,168	(1)	54,105	6,086	67,618	104,244	36,625
Feed for poultry and animals:								
1914.....	200	2,536	23,278	13,049	1,607	34,152	42,022	7,870
1909.....	192	1,800	(1)	10,580	957	16,324	21,087	4,764

¹ Not shown separately.

Macaroni, vermicelli, noodles, etc., to the value of \$5,470 were reported by manufacturers of other food preparations and to the value of \$395,253 by establishments in other industries, principally bakeries, although a small amount was reported by establishments grinding spices and by manufacturers of pickles, preserves, and sauces.

Meat products, such as meat puddings, head cheese, scrapple, etc., to the value of \$4,488,461, were reported by the slaughtering and meat-packing industry, and to the value of \$1,368,036 by establishments assigned to other industries, principally sausage, but including some products classed under "pickles, preserves, and sauces."

The "food-preparations" industry covers the manufacture of all sausage casings not made in slaughtering and meat-packing establishments. The sausage casings made in such establishments during 1914 were valued at \$9,077,593.

Sirups to the value of \$2,002,030 were reported by establishments in other industries.

"All other food preparations for human consumption" to the value of \$111,533 were reported by establishments in other subgroups in the "food-preparations" industry, and to the value of \$3,362,902 by establishments in other industries, such as "pickles, preserves, and sauces," "glue," "coffee, roasting and grinding," "oil, castor," "confectionery," "flavoring extracts," "canning and preserving, fruits and vegetables," "soap," "bread and other bakery products," "butter," "mineral and soda waters," "baking powders," etc.

Prepared food for animals and fowls to the value of \$2,675,912 was reported by manufacturers of breadstuff preparations and cereals, and of sirups, and to the value of \$1,832,610 by establishments assigned to other industries, principally distilled and malt liquors, grease and tallow, fertilizers, linseed oil, glue, buttons, patent medicines and compounds, and oil, not elsewhere specified. So far as it can be identified, the production of prepared foods for animals and fowls in 1914 was valued at \$46,530,913.

Flour and grist mills reported the production of bran and middlings valued at \$104,702,735, and feed and offal valued at \$137,067,959.

Glucose and starch factories also reported the production of stock feed to the value of \$6,690,412.

GLUCOSE AND STARCH.

The manufacture of glucose was treated as a separate industry from 1879 to 1904, but the number of establishments manufacturing glucose as their chief product are few and several of them are large producers of starch. In Table 21 separate figures for the two branches of the industry are given for 1879 to 1914, each establishment being classified according to its product of chief value.

The principal products of glucose factories are glucose or "corn sirup," starch, grape sugar, corn oil, corn-oil cake and meal, and feed for live stock.

The principal business of the establishments included under the starch subclassification is the extraction from corn, potatoes, arrowroot (*Zamia*), and wheat flour of the carbohydrate known as starch. The product is used for food, for laundering, for sizing, for finishing calico, for thickening colors, and for many other purposes. Some of the starch factories also report the manufacture of glucose, dextrine, corn oil, corn-oil cake and meal, and stock feed.

ESTABLISHMENTS MANUFACTURING PRIMARILY—	Number of estab- lish- ments.	Wage earners (average number).	Primary horse- power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manu- facture.
				Expressed in thousands.				
Glucose:								
1914.....	7	2,729	24,590	\$26,572	\$2,327	\$29,910	\$38,619	\$8,709
1909.....	8	2,848	16,923	21,446	1,637	25,272	32,931	7,659
1904.....	9	2,876	24,271	17,045	1,775	20,258	24,567	4,309
1899.....	8	3,288	14,980	41,011	1,755	15,773	21,694	5,921
1889.....	7	1,724	14,800	5,991	902	5,029	7,757	2,728
1879.....	7	1,192	(¹)	2,255	606	3,044	4,551	1,507
Starch:								
1914.....	82	1,780	17,049	17,070	1,223	10,298	13,996	3,668
1909.....	110	1,925	11,334	17,420	1,029	11,627	15,868	4,241
1904.....	131	1,803	11,715	7,008	866	5,261	8,083	2,822
1899.....	124	2,655	11,662	11,672	1,100	5,806	9,233	3,427
1889.....	80	2,903	6,169	4,929	959	5,154	8,935	3,781
1879.....	139	3,119	(¹)	5,328	619	4,911	7,478	2,567
1869.....	195	2,072	4,547	2,742	901	3,855	5,994	2,109
1859.....	167	1,073	(¹)	2,052	299	1,380	2,823	1,443
1849.....	146	694	(¹)	693	193	799	1,261	462

¹ Figures not available.

Statistics as to materials and products, for the years 1914, 1909, and 1904 are presented in the following table:

	GLUCOSE AND STARCH.		
	1914	1909	1904
MATERIALS.			
Corn:			
Pounds.....	2,488,792,405	2,240,508,915	(¹)
Cost.....	\$30,207,562	\$26,674,779	\$19,074,728
Potatoes:			
Pounds.....	169,878,784	210,608,127	209,372,549
Cost.....	\$498,015	\$541,359	\$563,651
Wheat flour:			
Pounds.....	14,198,049	19,545,824	(²)
Cost.....	\$301,560	\$482,263	(²)
PRODUCTS.			
Total value.....	\$52,615,401	\$48,799,311	\$32,649,836
Starch:			
Pounds.....	620,764,347	677,535,647	356,695,335
Value.....	\$15,783,781	\$17,514,823	\$10,927,538
Corn—			
Pounds.....	574,247,697	638,825,366	311,140,814
Value.....	\$13,784,654	\$15,962,916	\$8,878,450
Potato—			
Pounds.....	23,540,472	24,878,415	27,709,400
Value.....	\$718,006	\$823,019	\$924,476
Other starches—			
Pounds.....	22,976,178	13,836,866	17,845,121
Value.....	\$1,281,121	\$728,888	\$1,124,612
Glucose (including all sirups), value.....	\$18,541,429	\$17,922,514	\$12,352,616
Grape sugar:			
Pounds.....	174,368,818	159,060,478	(¹)
Value.....	\$3,765,515	\$3,620,816	\$2,254,745
Corn oil:			
Gallons.....	8,861,579	8,164,175	(¹)
Value.....	\$3,693,163	\$2,802,768	\$1,164,466
Corn-oil cake and meal:			
Pounds.....	143,001,065	(²)	(²)
Value.....	\$1,829,305	(²)	(²)
Stock feed, value.....	\$6,690,412	\$6,013,968	\$4,446,479
All other products, value.....	\$2,311,796	\$924,422	\$1,503,992

¹ Not reported.

² Not reported separately.

In addition, there were produced by establishments engaged primarily in other industries, during 1914, starches to the value of \$101,817. Quantities of refined and blended sirups are also made from corn and other materials by certain establishments engaged primarily in the manufacture of other products; and considerable quantities of glucose are manufactured for their own use by establishments producing sirups, jams, jellies, etc. The value of such glucose and sirups is not included in the total given in the table and can not be shown separately without disclosing the operations of individual establishments.

Although apparently the production of starch decreased from 1909 to 1914 by 56,771,300 pounds, or 8.4 per cent, the actual conditions in the industry indicated an increase. Some of the establishments are engaged primarily in reprocessing or producing mixed starches, and as a result there is more or less duplication in quantities and values of products. In 1909 such factories used as their principal material 105,299,010 pounds of cornstarch, but in 1914 only 9,812,659 pounds were used for this purpose. The deduction of this duplication from the totals gives the quantities of marketable cornstarch produced; 564,435,038 pounds in 1914 and 533,526,356 pounds in 1909. This great decrease in the quantity of cornstarch used in producing reprocessed or mixed starches is explained by the fact that in 1914 several of the largest producers of these starches had either ceased operations entirely or had discontinued this particular branch of business.

The total quantity of glucose and sirups manufactured during 1914, including that consumed in establishments where produced, was 847,180,968 pounds. The quantity of glucose produced as an intermediate product and consumed by the same establishments in the manufacture of sirups, jams, jellies, and similar products was not reported in 1909, but the total quantity of glucose and sirups reported at that census was 769,660,210 pounds. The principal materials used are corn, potatoes, and wheat flour, the first named being by far the most important.

RICE, CLEANING AND POLISHING.

The statistics for establishments engaged primarily in milling rice, domestic and foreign, are included under this classification. The processes involve the production, from rough rice, of cleaned and polished rice, rice bran, and polish. The principal statistics for the industry as reported at each census from 1879 to 1914, inclusive, are shown in Table 223, the statistics for 1914 being given by states.

The following table presents statistics, from 1899 to 1914, inclusive, as to quantity of rough rice milled, both on a custom or exchange basis and in merchant mills, and as to the quantity and value of the various products obtained:

	RICE, CLEANING AND POLISHING.			
	1914	1909	1904	1899
Rough rice treated, pounds.....	1, 036, 587, 825	974, 747, 475	999, 727, 650	398, 602, 018
Domestic.....	1, 025, 628, 075	970, 873, 740	990, 473, 625	359, 187, 559
Foreign.....	10, 959, 750	3, 873, 735	9, 254, 025	39, 414, 459
PRODUCTS.				
Total value.....	\$23, 039, 294	\$22, 371, 457	\$16, 296, 916	\$8, 723, 726
Clean rice:				
Pounds.....	674, 872, 108	626, 089, 489	623, 900, 245	243, 031, 200
Value.....	\$21, 655, 105	\$20, 685, 982	\$15, 357, 133	(¹)
Polish:				
Pounds.....	31, 053, 118	29, 821, 813	33, 290, 331	15, 134, 648
Value.....	\$352, 271	\$362, 052	\$267, 647	(¹)
Bran:				
Pounds.....	99, 403, 200	91, 208, 529	120, 694, 130	69, 265, 012
Value.....	\$772, 275	\$736, 215	\$501, 193	(¹)
All other products, value.....	\$259, 643	\$587, 208	\$170, 943	(¹)

¹ Not shown separately.

Of the domestic growth milled, 562,837,320 pounds were of the Honduras type, 454,067,775 of the Japan type, and 8,722,980 pounds of other types.

A very small amount of rice treated by small mills doing custom work of various kinds is not included in the census, but the quantity is so slight as to have no appreciable effect on the total shown in the table.

SUGAR.

The statistics relative to the manufacture of sugar are presented under three classifications. The beet-sugar industry covers the making of sugar, mainly refined or granulated, from beets of domestic origin; the industry designated "sugar, cane" comprises the manufacture of sugar, sirup, and molasses from sugar cane of domestic origin; and the industry designated "sugar, refining" embraces the refining of raw cane sugar, the greater part of the material being imported sugar. The census of 1909 was the first at which statistics relating to the manufacture of sugar and molasses direct from the cane were separated from those for the refining of the purchased raw sugar. Most of the establishments in the cane-sugar industry reported sugar as their principal product, though there were a few (29 out of a total of 181 in 1914 and 22 out of a total of 214 in 1909) that reported sirup as their chief product. The production of maple sugar and sirup and the manufacture of sirup on farms from sugar and sorghum cane are not covered by this industry. For blended sirups, see Food preparations, Table 7.

The combined value of products of the beet-sugar and cane-sugar mills using materials of domestic origin amounted to \$84,240,583 in 1914 and to \$78,743,121 in 1909. The value of products of the cane-sugar refineries aggregated \$289,398,715 in 1914 and \$248,628,659 in 1909. Of this value, the cost of materials, which consist chiefly of raw sugar imported from Cuba and from the United States insular possessions of Porto Rico, Hawaii, and the Philippines, represented 91.3 per cent in 1914 and 91 per cent in 1909. The combined value of products of all establishments producing raw or refined sugar was \$373,639,298 in 1914 and \$327,371,780 in 1909. These amounts include some duplication due to the use of the cane-mill product as material for the refineries.

Table 24

PRODUCT.	BEET AND CANE SUGAR INDUSTRIES.	
	1914	1909
Total value.....		
Beet products.....	\$84,240,583	\$78,743,121
Cane products.....	62,605,210	48,122,383
	21,635,373	30,620,738
Sugar:		
Tons (2,000 pounds).....		828,540
Value.....	1,008,274	\$72,033,302
Beet:	\$77,538,149	
Tons.....		501,682
Value.....	743,473	\$45,937,629
Cane:	\$58,590,466	
Tons.....		326,858
Value.....	264,801	\$26,095,673
Molasses, sirups, and all other products, value ¹	\$18,947,683	
Beet.....	\$6,702,434	\$6,709,819
Cane.....	\$4,014,744	\$2,184,754
	\$2,687,690	\$4,525,065

¹ Includes molasses, sirup, and other products of mills producing no sugar.

The total production of sugar in 1914 from beets and cane of domestic growth was 1,008,274 tons (of 2,000 pounds), as against 828,540 tons in 1909. Beet sugar constituted 73.7 per cent of the total in the later year and cane sugar 26.3 per cent; the corresponding percentages for 1909 were 60.6 and 39.4, respectively.

Beet sugar.—The beet-sugar industry was first shown separately at the census of 1879, when there were reported four establishments, with 350 wage earners and products to the value of \$282,572. At the census of 1869, however, two establishments, with 116 wage earners and products valued at \$119,720, had been reported under "sugar and molasses, beet and grape," the greater part of the product doubtless being beet sugar. For 1889 only two establishments were reported, and these were included with "all other industries" in order to avoid the disclosure of individual operations. Table 223 gives statistics for the census years from 1899 to 1914, inclusive.

Table 25 shows the quantities and values of the products made from sugar beets of domestic growth, the quantities of beets grown, and the acreage devoted to this crop.

Table 25

	BLEET SUGAR.			
	1914	1909	1904	1899
Acreage of sugar beets, total planted.....	532,421	415,964	240,757	135,305
Directly by factory.....	28,230	29,459	20,484	10,239
By tenants of factory.....	15,397	18,166	20,223	13,074
On contract by others than tenants of factory.....	488,788	368,339	200,050	111,992
Beets used, tons (2,000 pounds).....	5,639,103	3,965,356	2,175,417	794,658
Grown directly by factory.....	214,923	266,768	169,839	23,241
Grown by tenants of factory.....	135,537	163,843	210,247	95,071
Grown on contract by others than tenants of factory.....	5,288,643	3,534,745	1,795,331	676,346
PRODUCTS.				
Total value.....	\$62,605,210	\$48,122,383	\$24,393,794	\$7,323,857
Sugar:				
Tons (2,000 pounds).....	743,473	501,682	253,921	81,729
Value.....	\$58,590,466	\$45,937,629	\$23,924,602	\$7,222,581
Granulated—				
Tons.....	739,233	496,807	245,309	57,843
Value.....	\$58,351,324	\$45,645,810	\$23,493,373	\$5,580,527
Raw—				
Tons.....	4,240	4,875	5,612	23,886
Value.....	\$239,142	\$291,819	\$431,229	\$1,642,054
Molasses:				
Gallons (12.2 pounds).....	26,461,291	20,812,747	9,609,542	3,551,856
Value.....	\$1,536,192	\$1,129,905	\$221,097	\$5,102,279
Pulp, value.....	\$2,094,863	\$795,900	\$202,070	\$21,822
Dried.....	\$1,510,759	(2)	(2)	(2)
Moist.....	\$584,104	(2)	(2)	(2)
All other products, value.....	\$383,689	\$258,949	\$46,025	\$54,352

¹ Includes quantities for which no value could be given; also wastage.

² Not reported separately.

Cane sugar.—Statistics for the cane-sugar and the sugar-refining industries combined are given, for the last four censuses, in the following table:

Table 26

CENSUS YEAR.	CANE SUGAR, AND CANE-SUGAR REFINING.							
	Number of establishments.	Wage earners (average number).	Primary horse-power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	199	14,885	162,912	\$173,497	\$9,384	\$280,043	\$311,034	\$30,991
1909.....	233	13,526	160,603	153,167	7,484	247,583	279,250	31,667
1904.....	344	13,549	140,650	165,468	7,576	244,753	277,285	32,532
1899.....	657	14,129	152,569	184,033	6,918	221,385	239,711	18,326

In this table the figures for cost of materials and value of products include, of course, some duplication due to the use of the products of the cane-sugar industry as materials for the sugar-refining industry.

The cane-sugar industries were reported at censuses prior to 1899, but on such different bases that the figures are not comparable with those for the last four censuses, and for that reason they are excluded from the table. For 1849, under "sugar refiners," 23 establishments were reported, with 1,656 wage earners and products valued at \$9,898,800; for 1859, 39, with 3,484 wage earners and products valued at \$42,143,234; for 1869, 59, with 4,597 wage earners and products valued at \$108,941,911; for 1879, 49, with 5,857 wage earners and products valued at \$155,484,915; and for 1889, 393, with 7,043 wage earners and products valued at \$123,118,259. In molasses, for 1859, 2 establishments were classified under the heading of "sugar and molasses" and 2 under the heading of "sugar evaporators," the former having 5 wage earners and products valued at \$2,280, and the latter, 27 wage earners and products valued

at \$31,000; and for 1869, 713 establishments were reported under the heading of "sugar and molasses, raw cane," employing 21,299 wage earners and having products valued at \$10,383,368. In 1899 and 1904 there were no classifications of this nature.

The figures for 1914 and 1909 are not strictly comparable with those for previous censuses, because at the earlier censuses some important establishments which made table sirups by compounding maple, cane, or beet sugar with other materials were included under the heading of "sugar and molasses, refining," whereas at the censuses of 1914 and 1909 such establishments were classed with those which manufactured "food preparations." At the census of 1904 the statistics for "sugar and molasses, refining," included data for 38 establishments of this character, which employed 679 wage earners and paid out \$295,442 in wages. The cost of materials reported by these establishments was \$5,570,320 and the value of products \$6,801,034. Information of this nature is not available for prior censuses.

The following table shows the quantities and values of the products made direct from sugar cane of domestic growth, as well as the quantities of cane crushed, for 1914 and 1909. Separate statistics for this industry are not available for prior censuses.

	CANE SUGAR.	
	1914	1909
Cane crushed:		
Tons (2,000 pounds).....	3,754,820	4,520,419
Cost.....	\$13,408,689	\$17,211,752
	PRODUCTS. ¹	
Total value.....	\$21,635,373	\$30,620,738
Sugar:		
Tons (2,000 pounds).....		
Value.....	264,801	326,858
Refined—		
Tons.....	\$18,947,683	\$26,095,673
Value.....	53,594	(²)
Clarified (all sugar not refined and not raw, usually called "yellow" or "white clarified")—	\$4,228,860	(²)
Value.....	91,075	
Raw (all sugar not ready for consumption, usually sold to refiners)—	\$6,742,266	³ 323,180
Tons.....		⁴ \$25,794,287
Value.....	114,823	
Brown (open-kettle process)—	\$7,615,147	
Value.....	5,309	3,678
Molasses (liquid product from which more or less sugar has been extracted):	\$361,410	\$301,386
Gallons.....		
Value.....	20,675,260	24,587,581
Sirup (liquid product from which no sugar has been extracted):	\$2,021,517	\$2,845,559
Gallons.....		
Value.....	2,420,633	⁴ 1,449,860
All other products, value.....	\$609,696	⁴ \$365,632
	\$56,477	⁴ \$1,313,874

¹ Products manufactured direct from cane, not including the refined product made from raw sugar purchased.

² Not reported separately.

³ Reported as "vacuum pan."

⁴ The sirup produced by establishments which manufacture no sugar is included under "all other products" for 1909.

Sugar, refining.—The quantities and values of the products of establishments in the cane-sugar refining industry are shown in Table 28 for 1914. The statistics for this industry were not shown in detail at prior censuses.

Table 28	Cane-sugar refining, 1914.
Raw sugar used:	
Pounds.....	7,120,957,300
Cost.....	\$247,086,355
PRODUCTS.	
Total value.....	\$289,398,715
Refined sugar:	
Pounds.....	6,666,268,045
Value.....	\$285,495,974
Molasses and sirup:	
Gallons.....	35,802,995
Value.....	\$3,284,278
All other products, value.....	\$618,463

VINEGAR AND CIDER.

The manufacture of vinegar and cider is frequently conducted on farms, and the factory industry itself is closely allied to agriculture. Although the instructions to special agents in 1914 were to exclude cider mills on farms from the census of manufactures, it is probable that some were included. As a rule the cider-making establishments included in the census reported motive power and were of considerable importance. Some of these establishments were also engaged in sawing logs, grinding grain, etc., but cider was there product of greatest value. The value of the lumber, stock feed, and other subsidiary products reported by such establishments for 1914 was \$625,738, and for 1909, \$746,280.

For 1914, in order to present figures comparable with those for exports, separate statistics are given in Table 7 for "vinegar" and for "cider," each establishment being classified according to the product of chief value. There is, however, considerable overlapping between the two groups. For 1914, vinegar to the value of \$338,056 was reported by cider mills, to the value of \$228,114 as made for sale by establishments engaged primarily in canning and preserving fruits and vegetables, and to the value of \$2,495,289 by establishments under other classifications, principally "pickles, preserves, and sauces." Cider to the value of \$433,369 was reported by manufacturers of vinegar, to the value of \$148,122 as made for sale by canneries, and to the value of \$178,180 by other manufacturers, principally those classified under "mineral and soda waters" and "pickles, preserves, and sauces." For 1909, vinegar and cider to the value of \$2,552,604 were reported as subsidiary products by establishments assigned to other industries.

The decrease in the value of products of the vinegar and cider industry is probably attributable to the increased use of factory-made pickles, the pickle factories making practically all their own vinegar.

TEXTILES AND THEIR PRODUCTS.

THE GROUP AS A WHOLE.

This group of industries may be broadly divided into three divisions, namely, those which are engaged in one or more of the processes involved in the manufacture of the fabric, those which convert the fabric into articles for personal wear, and those making other textile products. Industries of the second and third divisions largely use as materials the products of industries of the first division. Moreover, even within a single industry there is often duplication in value of products due to the same cause. The textile group, as a whole, occupies second place among the 14 groups of industries in value of products, being exceeded in this respect by "food and kindred products." If the comparison be based on the average number of wage earners, however, the textile group ranks first, giving employment in 1914 to 1,498,664 wage earners, or 21.3 per cent of the total number reported for all manufacturing industries.

Table 29

INDUSTRY.	TEXTILES AND THEIR PRODUCTS: 1914.						
	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Expressed in thousands.							
Total.....	22,995	1,498,664	\$2,810,848	\$672,351	\$1,993,058	\$3,414,615	\$1,421,557
Textile fabrics and materials....	5,942	950,880	2,122,828	404,606	1,185,091	1,935,344	750,253
Cotton goods.....	1,179	379,366	867,044	146,130	431,603	676,569	244,966
Cotton small wares.....	108	6,598	11,765	2,825	6,243	11,525	5,282
Cotton lace.....	41	7,440	20,957	3,468	5,677	13,207	7,530
Hosiery and knit goods.....	1,622	150,520	215,826	59,758	146,687	258,913	112,226
Regular factories.....	1,481	150,145	215,357	59,605	146,291	258,041	111,750
Hand-knit goods.....	131	375	469	153	396	872	476
Silk goods.....	902	108,170	210,072	47,109	144,442	254,011	109,569
Finished products.....	685	59,967	173,462	42,117	131,798	232,602	100,894
Throwing and winding.....	207	18,203	36,610	4,992	12,644	21,319	8,675
Woolen and worsted goods.....	709	158,692	389,658	75,973	246,437	379,484	132,987
Woolen goods.....	501	49,165	107,872	24,204	63,696	103,816	40,120
Worsted goods.....	298	109,527	281,781	51,749	182,801	275,668	92,867
Felt goods.....	53	4,035	20,284	2,089	8,308	13,693	5,385
Hats, wool-felt.....	30	1,249	2,609	600	978	1,945	967
Carpets and rugs, other than rag.....	97	31,309	85,154	14,716	42,280	69,128	26,848
Wool shoddy.....	64	2,145	6,421	1,056	5,300	7,707	2,407
Wool pulling.....	34	708	3,493	452	6,632	8,273	1,641
Wool scouring.....	24	1,059	3,493	617	3,176	4,565	1,389
Cordage and twine.....	105	15,769	72,472	6,996	43,605	59,762	16,157
Jute goods.....	34	7,987	17,279	3,060	12,580	16,514	3,934
Linen goods.....	21	3,567	8,310	1,386	4,289	6,960	2,671
Flax and hemp, dressed.....	16	116	235	45	185	283	98
Mats and mattings, from cocoa fiber and grass.....	12	869	5,055	455	1,170	2,236	1,066
Hats, fur-felt.....	224	21,318	39,401	12,071	16,947	37,350	20,403
Haircloth.....	19	595	2,945	290	1,654	2,396	742
Dyeing and finishing textiles, exclusive of that done in textile mills.....	507	48,467	139,194	24,872	56,705	109,292	52,587
Cloth, sponging and refinishing.....	51	901	625	658	133	1,531	1,398
Articles from textile fabrics for personal wear.....	14,953	510,595	571,866	250,114	673,013	1,297,273	624,260
Clothing, men's.....	4,830	173,747	224,051	86,828	230,032	458,211	228,179
Regular factories.....	2,331	123,939	218,025	63,495	228,117	425,087	196,970
Men's and youths' clothing.....	2,044	115,633	202,671	59,130	209,146	388,299	179,153
Boys' clothing.....	254	7,753	14,510	4,138	18,107	35,313	17,206
All other.....	33	553	844	227	864	1,475	611
Contract work.....	2,499	49,808	6,026	23,333	1,915	33,124	31,203
Men's and youths' clothing.....	2,310	45,264	5,469	21,415	1,591	30,224	28,609
Boys' clothing.....	185	4,498	546	1,887	322	2,899	2,507
All other.....	4	46	11	31	2	71	69
Clothing, men's, buttonholes.....	139	672	224	326	90	638	548
Shirts.....	792	51,972	50,944	19,170	50,665	95,815	45,150
Furnishing goods, men's.....	551	22,469	27,888	8,416	31,593	52,453	20,860
Collars and cuffs, men's.....	35	10,100	15,025	4,494	6,566	18,531	11,965
Suspenders, garters, and elastic woven goods.....	216	9,646	16,344	4,276	15,191	24,433	9,242

Table 29—Continued.

TEXTILES AND THEIR PRODUCTS: 1914.

INDUSTRY.	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Articles from textile fabrics for personal wear—Continued.							
Hats and caps, other than felt, straw, and wool.	580	7,322	\$6,847	\$4,508	\$9,268	\$18,593	\$9,325
Clothing, women's.	5,564	168,907	153,549	92,574	252,345	473,888	221,543
Regular factories.	4,470	151,950	150,929	85,869	251,330	462,005	210,675
Suits, skirts, and cloaks.	2,053	59,468	64,615	42,044	120,978	223,257	102,279
Shirt waists and dresses, except house dresses.	1,369	58,211	47,110	29,726	79,149	150,105	70,956
Undergarments and petticoats.	439	20,122	23,829	8,353	31,832	52,687	20,855
Wrappers and house dresses.	253	6,673	8,149	2,596	9,772	17,900	8,128
All other.	356	7,476	7,226	3,150	9,599	18,056	8,457
Contract work.	1,094	16,957	2,620	6,705	1,015	11,883	10,868
Suits, skirts, and cloaks.	631	7,318	1,158	3,791	493	6,282	5,739
Shirt waists and dresses, except house dresses.	265	5,382	796	1,287	180	3,012	2,832
Undergarments and petticoats.	51	1,204	177	411	118	690	572
Wrappers and house dresses.	50	1,273	189	423	41	591	550
All other.	97	1,780	300	793	183	1,358	1,175
Corsets.	167	20,496	23,893	7,977	19,587	40,551	20,964
Millinery and lace goods.	2,079	45,274	53,101	21,545	57,676	114,160	56,484
Embroideries.	773	11,332	15,487	5,581	9,125	23,393	14,268
Trimmed hats and hat frames.	634	16,602	17,677	8,959	26,639	48,362	21,723
Dress and cloak trimmings, braids, and fringes.	218	2,697	3,530	1,185	4,496	7,810	3,314
Women's neckwear.	150	5,544	5,387	2,403	6,984	13,896	6,912
All other.	304	9,099	11,020	3,417	10,432	20,699	10,267
Other textile products.	2,100	37,189	116,154	17,631	134,954	181,998	47,044
Awnings, tents, and sails.	888	5,073	9,958	2,954	10,155	18,138	7,983
Bags, other than paper.	138	9,358	30,878	3,789	67,021	79,049	12,028
Belting and hose, woven.	31	952	4,848	460	2,869	4,441	1,572
Woven belting.	26	838	4,509	404	2,578	3,964	1,386
Woven hose.	5	114	339	56	291	477	186
Clothing, horse.	37	1,669	4,482	668	3,569	5,150	1,581
Flags and banners.	87	1,495	1,843	690	1,750	3,601	1,551
Regalia and society badges and emblems.	138	2,010	4,122	980	2,205	5,025	2,820
Hammocks.	14	285	608	119	361	671	310
Nets and seines.	15	1,058	2,678	379	2,257	3,088	831
Carpets, rag.	463	2,130	1,654	995	722	2,786	2,064
Oilcloth and linoleum, floor.	18	4,428	20,292	2,604	11,252	17,602	6,550
Oilcloth, enameled.	13	1,223	7,749	609	6,524	7,996	1,472
Upholstering materials.	179	4,426	15,879	2,144	10,786	16,432	5,696
Imitation leather, lea. theroid.	10	795	6,020	485	4,108	6,097	1,989
Excelsior.	99	1,177	2,980	558	1,403	2,516	1,113
Curled hair.	19	1,212	2,930	524	2,471	3,658	1,187
All other.	51	1,242	3,949	577	2,814	4,221	1,407
Waste.	73	2,966	10,668	1,191	15,238	17,600	2,362
Cotton.	49	2,668	9,732	1,048	14,122	16,111	1,989
All other.	24	298	936	143	1,116	1,489	373
Okum.	6	116	495	49	235	359	124

TEXTILE FABRICS.

Table 30 shows the development of the manufacture of textile fabrics since 1850. It covers, primarily, the industries that do spinning and weaving, and, therefore, includes the manufacture of cotton goods, cotton small wares, and cotton lace; woolen goods, worsted goods, felt goods, wool-felt hats, and carpets and rugs, other than rag; silk goods, including throwster products; hosiery and knit goods; and cordage and twine, jute goods, and linen goods.

CENSUS YEAR.	TEXTILE FABRICS.							
	Number of establishments.	Wage earners (average number).	Primary horsepower.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	4,991	874,702	2,364,986	\$1,921,925	\$364,090	\$1,093,189	\$1,761,711	\$668,522
1909.....	4,825	834,087	1,976,026	1,717,795	312,975	950,995	1,591,736	640,741
1904.....	4,268	704,051	1,526,031	1,254,896	233,967	726,357	1,164,706	438,349
1899.....	4,099	631,979	1,229,857	982,559	196,372	503,511	886,882	353,371
1889.....	4,056	497,822	767,369	729,333	159,613	435,250	730,567	295,317
1879.....	4,290	387,554	1,435,933	406,337	104,373	311,753	534,674	222,021
1869.....	4,709	267,321	(2)	285,175	83,002	260,570	418,527	157,957
1859.....	3,104	191,152	(2)	148,440	39,453	113,890	211,707	97,817
1849.....	2,921	141,792	(2)	107,696	(3)	65,176	113,316	48,140

¹ Does not include horsepower used in cordage and twine and jute and linen goods industries, which was not reported separately.

² Comparable figures not available.

³ Not fully reported.

Table 31 shows the quantities of the different kinds of raw fiber consumed in the manufacture of textile fabrics, as reported at the last four censuses. This table combines and summarizes the data shown in detail in Tables 35, 43, 46, and 60.

FIBER.	TEXTILE FABRICS—RAW FIBERS CONSUMED (POUNDS).			
	1914	1909	1904	1899
Cotton.....	2,679,934,778	2,465,225,572	1,981,804,446	1,923,704,600
Wool.....	510,008,799	559,850,995	501,468,203	412,745,779
Animal hair and fur.....	44,821,941	41,549,822	50,808,287	35,737,924
Silk.....	25,021,945	17,729,306	11,572,733	9,760,770
Flax.....	26,455,737	28,063,703	(1)	16,980,646
Hemp, jute, etc.....	751,029,659	632,786,278	(1)	507,777,585

¹ Figures not available.

The following table gives the number of producing spindles in active textile mills at the time of each census from 1869 to 1914, inclusive. It does not cover 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 197,021 were returned for 1914, as compared with 142,169 for 1909.

CENSUS YEAR.	NUMBER OF SPINDLES.				
	Total.	Used in the manufacture of—			
		Cotton goods.	Silk goods.	Woolen goods.	Worsted goods.
1914.....	38,111,240	31,703,863	2,100,012	2,079,626	2,227,739
1909.....	33,866,054	28,178,862	1,777,962	2,156,424	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 figures represent the number of spindles used in the manufacture of cotton, silk, woolen, and worsted goods, respectively. They do not represent the number employed in the four classes of mills, however, because some mills use two or more kinds of material. Woolen mills, for example, have a large number of spindles that spin cotton exclusively.

In addition to the number of cotton spindles reported in connection with the census of manufactures, statistics of the number employed in all branches of the

textile industry are reported monthly to the Bureau of the Census. According to these monthly reports for the year ending August 31, 1914, there were 32,744,012 cotton spindles in the United States and of this number 32,107,572 were active during the year.

The loom equipment of active establishments at the time of the several censuses, beginning with that of 1869, is presented in Table 33. It does not include looms in establishments engaged primarily in the manufacture of rag carpets, woven belting and hose, and suspenders, garters, and elastic woven goods, nor products made from flax, hemp, jute, and similar fibers. Cotton looms operated by power formed 79.9 per cent of the total number of power looms in 1914, silk looms 10 per cent, and those employed in wool manufactures (which include the manufacture of woolen and worsted goods and carpets and rugs) 10.1 per cent. The corresponding percentages for 1909 were: Cotton looms, 80.6; silk looms, 9.1; looms in wool manufactures, 10.2.

Table 33

NUMBER OF LOOMS.

CLASS OF LOOMS AND CENSUS YEAR.	Total.	Used in the manufacture of—				
		Cotton goods.	Silk goods.	Woolen goods.	Worsted goods.	Carpets and rugs.
Power:						
1914.....	848,246	677,920	85,058	28,866	46,581	9,821
1909.....	825,478	665,652	75,406	33,148	39,476	11,796
1904.....	696,785	559,781	59,775	38,104	28,123	11,002
1899.....	573,214	455,752	44,257	36,734	28,630	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:						
1914.....	94	19	(1)	44		31
1909.....	248	(2)	(1)	41		207
1904.....	1,039	(2)		66		690
1899.....	1,311	(2)	283	83		1,055
1889.....	4,823	(2)	1,747	481		2,628
1879.....	7,929	(2)	3,153	781		3,995
1869.....	4,163	(2)	188	(2)		3,975

¹ Included with power looms.

² Not reported.

COTTON MANUFACTURES.

Separate figures are given in Table 29 for the manufacture of "cotton goods," which includes the spinning of cotton and the weaving of piece goods, for "cotton lace," and for "cotton small wares." Some of the establishments included under "cotton goods" also manufacture cotton small wares such as shoe and corset lacings, lamp and stove wicks, tape and webbing, etc. Statistics for the two classes of establishments were first shown separately at the census of 1899. For 1914 a further division was made so as to give separate figures for those that manufacture cotton lace.

Table 34 presents comparative statistics for cotton manufactures, as a whole, from 1849 to 1914, inclusive.

Table 34

COTTON MANUFACTURES.

CENSUS YEAR.	Number of establishments.	Wage earners (average number).	Primary horse-power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	1,328	393,404	1,585,953	\$899,766	\$152,423	\$443,523	\$701,301	\$257,778
1909.....	1,324	378,880	1,286,517	822,238	132,859	371,009	628,392	257,383
1904.....	1,154	315,874	986,604	613,111	96,206	286,255	450,468	164,213
1899.....	1,055	302,861	795,834	467,240	86,690	176,552	339,200	162,648
1889.....	905	218,876	464,881	354,021	66,025	154,913	267,982	113,069
1879 ¹	756	172,544	275,504	208,280	42,041	102,206	192,090	89,884
1869.....	956	135,369	146,040	140,706	39,044	111,737	177,490	65,753
1859.....	1,091	122,028	(2)	98,585	23,940	57,286	115,682	58,396
1849.....	1,094	92,286	(2)	74,501	(2)	34,835	61,869	27,034

¹ Does not include 249 mills, classed as "special mills," making hosiery, braiding, tapes, and fancy fabrics, and mixed goods or other fabrics not sold as specific manufactures of wool or cotton. In these establishments there were 12,928 employees, receiving \$3,573,909 in wages. The cotton consumed by them cost \$2,338,385, and the value of their products was \$18,860,273.

² Figures not available.

² Not shown separately.

The following table is a comparative statement of the quantity of raw cotton fiber consumed in the different classes of textile mills. The aggregate amount of cotton fiber used by all industries in 1914, as computed from the monthly reports of cotton consumed, was approximately 2,800,000,000 pounds. In the textile industries alone a consumption of 2,679,934.778 pounds was reported.

INDUSTRY.	COTTON FIBER CONSUMED IN TEXTILE MILLS (POUNDS).			
	1914	1909	1904	1899
Total.....	2,679,934,778	2,465,225,572	1,981,804,446	1,923,704,600
Cotton goods.....	2,511,819,646	2,332,262,636	1,873,074,716	1,814,002,512
Cotton small wares.....	9,810,156	3,082,270	3,362,434	3,640,878
Cotton lace.....	1,871,035	(1)	(1)	(1)
Hosiery and knit goods.....	88,390,208	75,416,023	50,586,760	49,451,301
Cordage and twine.....	32,336,685	27,624,490	18,142,735	13,022,755
Woolen goods.....	23,915,496	15,801,394	28,279,832	34,967,959
Worsted goods.....	4,471,526	4,222,667	4,333,576	5,276,751
Felt goods.....	3,117,272	1,375,670	1,982,624	1,225,850
Carpets and rugs, other than rag.....	3,802,789	5,147,130	1,997,369	1,943,942
Wool shoddy.....	399,965	293,292	44,400	172,652

¹ Not reported separately.

Table 36 presents for each census from 1899 to 1914 comparative statistics as to materials, products, and equipment for cotton manufactures, but does not include figures for cotton hosiery and knit goods.

	COTTON MANUFACTURES.			
	1914	1909	1904	1899
MATERIALS.				
Total cost.....	\$443,522,515	\$371,009,470	\$286,255,303	\$176,551,527
Cotton, raw:				
Pounds.....	2,523,500,837	2,335,344,906	1,876,437,150	1,817,643,300
Cost.....	\$330,315,223	\$274,724,210	\$222,212,749	\$125,169,616
Domestic—				
Pounds.....	2,431,405,884	2,259,312,974	1,832,736,744	1,761,798,458
Cost.....	\$312,586,001	\$261,547,820	\$214,615,844	\$119,098,443
Foreign—				
Pounds.....	92,094,953	76,031,932	43,700,406	55,844,932
Cost.....	\$17,729,222	\$13,176,390	\$7,596,905	\$6,071,173
Dyed, bleached, and other prepared cotton:				
Pounds.....	1,052,836	191,779	(1)	(1)
Cost.....	\$111,423	\$21,591	(1)	(1)
Cotton waste:				
Pounds.....	54,116,105	80,044,061	76,678,645	41,234,900
Cost.....	\$3,542,631	\$4,225,790	\$3,814,290	\$1,515,591
All other fibers:				
Pounds.....	4,276,476	1,627,189	(1)	(1)
Cost.....	\$3,203,262	\$1,176,449	(1)	(1)
Cotton yarns:				
Pounds.....	139,432,027	126,707,003	105,411,516	94,692,864
Cost.....	\$39,793,131	\$34,384,791	\$24,611,200	\$17,622,568
All other yarns:				
Pounds.....	3,309,277	5,605,522	3,530,963	4,897,438
Cost.....	\$4,793,221	\$8,183,206	\$2,425,362	\$3,320,594
Starch, cost.....	\$2,629,558	\$2,114,756	\$1,506,804	\$1,227,010
Chemicals and dyestuffs, cost.....	\$5,789,235	\$4,886,514	\$4,573,375	\$5,718,107
All other materials, cost.....	\$53,364,831	\$41,292,163	\$27,111,523	\$21,978,041
PRODUCTS.				
Total value.....	² \$701,300,933	² \$628,391,813	\$450,467,704	\$339,200,320
Woven goods: ³				
Square yards.....	6,810,712,349	6,267,561,279	5,056,797,590	4,485,605,418
Value.....	\$488,728,054	\$447,167,319	\$317,539,626	\$239,668,017
Unbleached and bleached sheetings, shirtings, and muslins—				
Square yards.....	3,852,471,903	3,709,031,377	2,990,525,354	2,794,016,875
Value.....	\$196,520,984	\$199,900,874	\$141,564,988	\$118,293,972

See footnotes on p. 61.

Table 36—Continued.

	COTTON MANUFACTURES.			
	1914	1909	1904	1899
PRODUCTS—continued.				
Woven goods—Continued.				
Ducks—				
Square yards.....	248,539,379	162,476,322	122,601,212	129,234,076
Value.....	\$47,921,989	\$27,485,892	\$17,005,982	\$14,263,008
Ginghams—				
Square yards.....	489,661,133	537,430,463	302,316,132	278,392,708
Value.....	\$36,706,542	\$37,939,040	\$22,471,867	\$16,179,200
Fancy weaves, total— ¹				
Square yards.....	1,399,486,243	1,318,765,235	1,123,507,987	892,709,523
Value.....	\$129,695,313	\$126,873,133	\$88,581,288	\$63,677,039
Drills—				
Square yards.....	289,969,885	238,869,407	194,735,303	237,206,549
Value.....	\$21,256,698	\$17,750,151	\$12,596,063	\$11,862,794
Twill, sateens, etc.—				
Square yards.....	392,108,735	388,314,961	366,142,513	235,860,518
Value.....	\$32,891,854	\$34,274,107	\$23,701,305	\$14,301,302
Other fancy weaves— ²				
Square yards.....	717,407,623	691,580,867	562,630,171	419,642,456
Value.....	\$75,546,761	\$74,848,875	\$52,283,920	\$37,512,943
Napped fabrics—				
Square yards.....	263,862,227	305,655,864	330,808,140	268,852,716
Value.....	\$24,352,020	\$25,695,367	\$26,108,315	\$18,231,044
Velvets, corduroys, plushes, etc.—				
Square yards.....	29,128,703	19,706,438	16,014,556	7,961,523
Value.....	\$8,540,143	\$6,965,634	\$4,790,573	\$2,682,017
Toweling and terry weaves—				
Square yards.....	75,798,907	52,778,170	40,280,292	(¹)
Value.....	\$9,805,232	\$6,037,075	\$4,365,470	(¹)
Mosquito netting and similar fabrics—				
Square yards.....	97,981,783	59,100,819	36,232,918	41,885,023
Value.....	\$2,820,524	\$2,103,560	\$794,953	\$875,888
Bags and bagging—				
Square yards.....	129,357,002	63,107,568	57,067,663	32,739,616
Value.....	\$9,705,616	\$4,862,551	\$3,953,732	\$2,554,192
Tapestries—				
Square yards.....	10,137,710	10,657,385	9,605,006	10,166,538
Value.....	\$5,411,592	\$4,723,907	\$4,242,506	\$4,158,600
Other woven goods— ³				
Square yards.....	214,287,359	28,851,638	27,838,330	29,646,820
Value.....	\$17,248,099	\$4,580,388	\$3,659,952	\$3,753,077
Yarns manufactured for sale:				
Pounds.....	497,986,999	470,370,995	364,634,753	332,302,621
Value.....	\$127,363,952	\$109,314,953	\$79,939,687	\$55,216,066
Thread:				
Pounds.....	26,507,023	23,700,957	17,163,741	15,907,058
Value.....	\$22,917,099	\$20,516,269	\$15,043,043	\$11,908,671
Twine:				
Pounds.....	13,284,875	13,715,771	7,301,589	11,642,718
Value.....	\$2,792,125	\$2,417,391	\$1,428,994	\$1,546,611
Cordage and rope:				
Pounds.....	5,515,658	7,603,907	(¹)	(¹)
Value.....	\$391,223	\$1,164,526	(¹)	(¹)
Cotton waste:				
Pounds.....	317,360,019	310,513,348	247,649,640	270,562,613
Value.....	\$14,421,929	\$10,874,386	\$10,062,057	\$5,563,570
All other products, value.....	\$44,186,551	\$36,936,969	\$26,454,297	\$25,297,385
EQUIPMENT.				
Producing spindles, number.....	30,887,489	27,425,608	23,195,143	19,050,952
Looms, all classes, number.....	676,661	665,049	559,296	455,752

¹ Not reported separately.

² In addition, cotton goods to the value of \$10,929,849 in 1914, and to the value of \$4,291,602 in 1909, were made by establishments engaged primarily in the manufacture of products other than cotton goods. Of these amounts \$4,326,153 in 1914 and \$2,067,506 in 1909 represent the value of cotton yarn reported by mills engaged chiefly in the production of hosiery and knit goods and wool manufactures.

³ Does not include lace, tape, webbing, nor fabrics reported under the heading, "other cotton products," because not properly falling under any of the classifications called for and for much of which the quantity was not given, nor those fabrics used in further processes of manufacture by the establishments producing them, as duck in the manufacture of belting, buckets, etc.

⁴ Fabrics, the combined quantities and values of which are here brought into comparison with 1914 figures were designated at prior censuses as, "plain clothes for printing and converting" and "brown or bleached sheetings and shirtings."

⁵ Does not include fancy woven ginghams, napped fabrics, nor unbleached or bleached shirtings.

Cotton goods.—Table 36 presents the statistics for cotton products for which separate figures were compiled at the last four censuses. To meet the demand for more detail and to facilitate comparison with statistics of imports and exports, a more extended inquiry was made at the census of 1914 in regard to the classes of goods manufactured. The detail statistics obtained by this canvass are given in Table 37, and are confined to "cotton goods," the largest of the industries composing cotton manufactures.

Table 37

	COTTON GOODS, 1914.		
	Unit of measure.	Quantity.	Amount.
MATERIALS.			
Total cost.....			\$431,602,540
Cotton:			
Domestic.....	Pounds.....	2,419,724,693	311,379,525
Foreign.....	Pounds.....	92,094,953	17,729,222
Cotton yarns.....	Pounds.....	115,251,262	32,653,519
Cotton waste.....	Pounds.....	53,994,930	3,533,165
Starch.....			2,585,365
Chemicals and dyestuffs.....			5,618,299
All other materials.....			58,103,445
PRODUCTS.			
Total value.....			\$676,569,115
Woven goods:			
Unbleached.....	Square yards.....	5,297,135,769	343,500,338
Bleached.....	Square yards.....	266,208,396	25,681,025
Colored, dyed, or printed.....	Square yards.....	1,247,368,184	119,546,641
Plain cloths—			
Ducks.....	Square yards.....	248,539,379	47,921,989
Sheetings.....	Square yards.....	2,665,626,718	133,331,830
Muslin (containing under No. 45 yarn).....	Square yards.....	674,709,190	27,605,552
Muslins (over No. 45 yarn), including lawns, nainsooks, etc., or other plain weaves.....	Square yards.....	478,533,374	32,612,462
Colored yarn fabrics—			
Ginghams.....	Square yards.....	229,224,945	15,417,351
Shirtings.....	Square yards.....	138,463,264	10,430,323
All other.....	Square yards.....	70,912,969	6,186,773
Napped fabrics.....	Square yards.....	202,502,229	13,760,996
Pillow tubing.....	Square yards.....	15,212,622	1,483,847
Fancy cloths—			
Drills.....	Square yards.....	289,969,885	21,256,698
Twill, sateens, etc.....	Square yards.....	392,103,735	32,891,854
Dobby fancies.....	Square yards.....	285,564,116	24,177,179
Jacquards.....	Square yards.....	101,312,325	14,310,860
Colored yard fabrics—			
Ticks and denims.....	Square yards.....	229,330,359	24,947,983
Ginghams.....	Square yards.....	260,436,138	21,289,191
Shirtings.....	Square yards.....	46,859,256	5,517,597
All other.....	Square yards.....	77,642,662	3,711,433
Pile fabrics:			
Velvets, corduroys, plushes, etc.....	Square yards.....	29,128,703	8,540,143
Towelings and terry weaves.....	Square yards.....	75,798,907	9,805,232
Mosquito netting and similar fabrics			
Tapestries (piece goods, curtains, etc.).....	Square yards.....	97,981,783	2,830,524
Bags and bagging.....	Square yards.....	10,137,710	5,411,592
Tape and webbing.			
Yarns for sale.....	Square yards.....	129,357,002	9,705,616
Thread.....	Linear yards.....	2,392,221	102,554
Twine.....	Pounds.....	497,986,999	127,363,952
Cordage and rope.....	Pounds.....	26,507,023	22,917,099
Cotton waste for sale.....	Pounds.....	13,049,520	2,716,233
Dyed, bleached, or other prepared cotton.....	Pounds.....	4,962,123	791,633
Bating and wadding.....	Pounds.....	317,193,319	14,416,870
Other cotton products.....	Pounds.....	7,255,404	1,123,576
Old bagging and ties from cotton bales.....	Pounds.....	2,659,465	437,452
All other products.....			9,785,365
			1,009,760
			7,173,474

Cotton small wares.—The general statistics for this industry are given in Table 223 (p. 609), for the census years from 1899 to 1914, inclusive. Prior to 1899 this industry was included with "cotton goods." The establishments in this classification do not make piece goods, but confine their operations mainly to the manufacture of narrow fabrics, such as braids, tapes, bindings, shoe laces, corset laces, fishlines,

etc. Considerable quantities of cotton small wares are also manufactured by establishments making piece goods.

A number of the large establishments, formerly classed in this industry, so changed their production that cotton small wares was not the product of chief value in 1914. For this reason the production of cotton small wares showed an apparent decrease at the last census as compared with 1909. The decrease is also due in part to the fact that in 1909 the classification included some establishments engaged in the manufacture of cotton lace, which were assigned to the cotton lace industry in 1914.

Cotton lace.—Under this designation are included establishments engaged in the manufacture of machine-made cotton laces, such as lace curtains, curtain nets, levers laces, panels, bedspreads, narrow laces, edgings, etc. Lace goods was not shown as a separate industry prior to 1914, but was included with cotton goods and cotton small wares. In 1904 those establishments assigned to the cotton-goods industry that manufactured lace or lace curtains as their product of chief value were withdrawn for 1904 and 1899 and a tabulation made giving statistics for this branch of the industry. The statistics, however, are not comparable with those for 1914, as they do not include narrow laces and edgings, which were classed as cotton small wares.

		COTTON-LACE GOODS, 1914.		
		Unit of measure.	Quantity.	Amount.
MATERIALS.				
Total cost				\$5,676,948
Yarns:				
Cotton ¹	Net pounds		11,137,700	3,709,978
Mercerized	Net pounds		247,801	83,433
Silk and spun silk ²	Net pounds		55,240	263,612
Artificial silk	Net pounds		3,508	7,533
All other materials				1,612,392
PRODUCTS.				
Total value				\$13,206,785
Nottingham lace curtains	Pairs	5,591,154		4,678,847
Nottingham lace-curtain nets	Linear yards	7,504,809		1,258,307
Lever laces	Square yards	7,236,934		3,681,042
Narrow laces	Linear yards	166,169,567		896,692
Panels and other small pieces	Number	2,359,879		322,594
Bedspreads	Number	719,333		484,107
All other laces				1,199,464
All other products				685,732

¹ Includes raw cotton.

² Includes raw silk.

The following table shows the number of spindles and lace machines of foreign and domestic manufacture in actual use during all or part of the year 1914 in the establishments reported:

	Of foreign manufacture (number).	Of domestic manufacture (number).
Spindles:		
Frame		28,000
Lace machines:		
Nottingham lace curtain	412	
Bobbinet	28	3
Lever	374	70
Warp	26	9
All other	508	152

HOSIERY AND KNIT GOODS.

This classification includes the operations of establishments engaged in the manufacture of knitted goods, irrespective of the material used.

The manufacture of silk hosiery has increased rapidly and large quantities of silk are now used as material. This portion of the industry is therefore referred to in connection with the manufacture of silk goods. The amount of cotton, wool, and other fiber used in the hosiery and knit goods industry is also considered in connection with

the statistics for the different branches of the textile industry. Two classifications are used, one covering establishments employing power, while the other covers the establishments whose machines were operated by hand and is designated hand-knit goods. The use of power-driven machines is becoming more general, and establishments classed under "hand-knit goods" at one census frequently pass into the other class at a subsequent census; the distinction between the two classes of establishments has therefore lost much of its significance. Separate data for the two branches may, however, be of interest and they are presented in Table 40.

Statistics for the industry as a whole are given in Table 223, for the census years from 1849 to 1914, inclusive.

ESTABLISHMENTS MANUFACTURING PRIMARILY—	Number of establishments.	Wage earners (average number).	Primary horse-power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Power-machine knit goods:								
1914.....	1,491	150,145	125,775	\$215,357	\$59,605	\$146,291	\$258,041	\$111,750
1909.....	1,264	128,708	103,707	162,855	44,527	109,416	198,572	89,156
1904.....	1,079	103,715	78,738	106,663	31,536	76,594	136,558	59,964
1899.....	921	83,387	57,342	81,861	24,358	51,072	95,483	44,411
1889.....	796	59,588	34,538	50,608	16,578	35,862	67,241	31,379
1879.....	359	28,885	11,561	15,579	6,701	15,211	29,167	13,956
Hand-machine knit goods:								
1914.....	131	375	67	469	153	396	872	476
1909.....	110	567	2	786	214	825	1,572	747
1904.....	65	377	31	280	79	195	518	323
1899.....	85	304	4	205	76	123	351	228
1889.....	28	186	26	78	36	88	206	118
1879.....	39	1,814	.....	153	138	239	447	208

Table 41 presenting the statistics for materials, products, and equipment for the censuses 1899 to 1914, includes establishments making hand-knit goods as well as those using power-driven machines.

MATERIALS.	1914	1909	1904	1899
	Total cost.....	\$146,687,458	\$110,241,053	\$76,780,348	$51,195,330
Cotton:				
Domestic—				
Pounds.....	86,202,432	71,986,529	48,668,643	49,451,301
Cost.....	\$11,083,987	\$8,277,508	\$5,526,396	\$3,561,592
Foreign—				
Pounds.....	2,187,776	3,429,494	1,918,117	(1)
Cost.....	\$360,919	\$526,001	\$342,921	(1)
Carded and other prepared—				
Pounds.....	1,920,124	(1)	(1)	(1)
Cost.....	\$235,832	(1)	(1)	(1)
Waste purchased—				
Pounds.....	24,303,514	(1)	(1)	(1)
Cost.....	\$2,190,762	(1)	(1)	(1)
Wool:				
Foreign (in condition purchased)—				
Pounds.....	1,212,203	472,707	1,130,433	(1)
Cost.....	\$530,959	\$252,419	\$543,418	(1)
Domestic (in condition purchased)—				
Pounds.....	5,735,395	6,596,081	16,170,183	17,953,907
Cost.....	\$2,436,524	\$2,666,636	\$5,610,440	\$5,262,135
Equivalent in scoured condition, pounds.....	6,072,257	5,582,839	13,909,144	13,031,308

See footnotes on p. 67.

Table 41—Continued.

	HOSIERY AND KNIT GOODS.			
	1914	1909	1904	1899
MATERIALS—continued.				
All other animal hair:				
Pounds.....	690,714	191,344	89,502	(1)
Cost.....	\$153,099	\$62,363	\$54,877	(1)
Recovered wool fiber:				
Pounds.....	3,453,682	7,482,553	7,489,358	3,770,626
Cost.....	\$602,392	\$919,970	\$923,719	\$488,792
Wool waste and noils:				
Pounds.....	5,946,337	8,586,261	6,020,459	5,276,454
Cost.....	\$1,827,122	\$2,813,129	\$1,711,669	\$1,487,907
Tops:				
Pounds.....	265,216	121,565	182,149	(1)
Cost.....	\$140,153	\$92,995	\$116,773	(1)
Raw silk:				
Pounds.....	1,590,162	(1)	(1)	(1)
Cost.....	\$6,331,413	(1)	(1)	(1)
Yarn, not made in this mill:				
Cotton—				
Pounds.....	189,905,523	216,987,611	161,500,466	131,820,068
Cost.....	\$47,619,322	\$48,165,749	\$34,372,910	\$22,204,918
Mercerized cotton—				
Pounds.....	15,672,427	(1)	(1)	(1)
Cost.....	\$9,289,859	(1)	(1)	(1)
Woolen—				
Pounds.....	7,145,453	6,140,265	4,839,343	2,621,893
Cost.....	\$4,442,765	\$3,834,094	\$2,798,454	\$1,257,587
Worsted—				
Pounds.....	14,305,333	10,370,004	8,789,570	5,823,215
Cost.....	\$11,694,039	\$10,116,325	\$7,457,690	\$4,805,304
Merino—				
Pounds.....	4,333,309	4,014,609	2,568,890	1,981,484
Cost.....	\$2,380,702	\$2,667,051	\$1,118,999	\$642,535
Spun silk—				
Pounds.....	1,913,478	982,753	320,671	266,247
Cost.....	\$7,510,872	\$3,606,599	\$1,200,259	\$946,801
Artificial silk—				
Pounds.....	1,257,243	(1)	(1)	(1)
Cost.....	\$2,337,949	(1)	(1)	(1)
Linen, jute, and other vegetable fiber—				
Pounds.....	70,278	241,754	62,617	116,160
Cost.....	\$60,839	\$180,818	\$56,224	\$111,265
Chemicals and dyestuffs, cost.....	\$2,913,027	\$2,541,939	\$1,677,252	\$1,023,161
All other materials.....	\$32,544,922	\$23,517,457	\$13,277,347	\$9,343,333
Yarns made in the establishment using—				
Cotton, pounds.....	75,970,761	69,171,277	39,954,890	40,845,889
Woolen, pounds.....	7,714,761	8,316,349	(1)	(1)
Worsted, pounds.....	231,752	223,404	(1)	(1)
Merino, pounds.....	23,680,971	20,856,989	(1)	(1)
PRODUCTS.				
Total value.....	\$258,912,903	\$200,143,527	\$137,076,454	\$95,833,692
Hosiery:				
Dozen pairs.....	75,164,911	62,825,069	44,186,063	29,903,899
Value.....	\$98,098,590	\$68,721,825	\$44,113,260	\$27,420,029
Hose—				
Dozen pairs.....	44,186,412	\$34,933,976	\$26,041,878	\$16,654,341
Value.....	\$63,144,569	\$41,503,427	\$26,674,346	\$16,389,785
Cotton—				
Dozen pairs.....	36,952,380	32,499,104	24,109,804	15,028,173
Value.....	\$38,300,194	\$34,078,622	\$22,764,799	\$13,275,732
Wool—				
Dozen pairs.....	1,369,492	1,166,429	1,083,783	1,176,705
Value.....	\$2,548,047	\$2,358,106	\$2,205,080	\$2,267,681
Merino—				
Dozen pairs.....	723,433	834,029	746,226	436,891
Value.....	\$1,414,118	\$1,406,283	\$1,182,164	\$659,959
Silk—				
Dozen pairs.....	2,354,648	³ 434,414	³ 42,065	³ 12,572
Value.....	\$13,851,251	\$3,600,416	\$522,303	\$186,413
Silk-mixed—				
Dozen pairs.....	2,786,459	(1)	(1)	(1)
Value.....	\$6,940,959	(1)	(1)	(1)
Half-hose—				
Dozen pairs.....	30,078,499	27,891,093	18,144,185	13,249,558
Value.....	\$34,954,021	\$27,218,398	\$17,438,914	\$11,030,244

See footnotes on p. 67.

Table 41—Continued.	HOSIERY AND KNIT GOODS.			
	1914	1909	1904	1899
PRODUCTS—continued.				
Hosiery—Continued.				
Half-hose—Continued.				
Cotton—				
Dozen pairs.....	24,457,195	24,805,917	15,223,243	11,352,081
Value.....	\$21,241,280	\$21,831,365	\$11,821,830	\$7,906,945
Wool—				
Dozen pairs.....	616,341	1,061,535	1,309,876	939,957
Value.....	\$1,327,439	\$2,087,121	\$3,402,406	\$1,738,535
Merino—				
Dozen pairs.....	2,335,861	2,023,641	1,611,066	957,520
Value.....	\$3,384,831	\$3,299,912	\$2,214,678	\$1,384,764
Silk—				
Dozen pairs.....	1,305,792	(4)	(4)	(4)
Value.....	\$4,701,969	(4)	(4)	(4)
Silk-mixed—				
Dozen pairs.....	2,263,310	(1)	(1)	(1)
Value.....	\$4,298,502	(1)	(1)	(1)
Shirts and drawers:				
Dozens.....	21,758,775	25,337,779	19,723,141	15,873,700
Value.....	\$57,523,051	\$69,592,817	\$56,643,860	\$45,675,594
Cotton—				
Dozens.....	19,735,898	22,567,121	17,107,958	12,058,431
Value.....	\$43,097,937	\$50,007,598	\$39,658,762	\$26,882,902
Wool—				
Dozens.....	373,045	178,163	485,328	1,085,046
Value.....	\$3,448,575	\$1,820,521	\$3,647,934	\$4,980,818
Merino—				
Dozens.....	1,434,504	2,536,473	2,113,810	2,675,416
Value.....	\$9,228,686	\$17,055,624	\$13,031,754	\$13,293,829
Silk—				
Dozens.....	69,786	56,022	16,045	54,807
Value.....	\$1,214,609	\$709,074	\$305,410	\$518,045
Silk-mixed—				
Dozens.....	43,118	(5)	(5)	(5)
Value.....	\$313,439	(5)	(5)	(5)
All other—				
Dozens.....	102,424	(1)	(1)	(1)
Value.....	\$219,805	(1)	(1)	(1)
Combination suits:				
Dozens.....	6,272,515	2,473,103	1,440,420	986,855
Value.....	\$35,596,034	\$14,853,536	\$6,793,947	\$3,691,847
Cotton—				
Dozens.....	5,468,730	2,047,637	1,260,301	824,632
Value.....	\$25,617,815	\$9,713,597	\$4,478,664	\$2,240,566
Wool—				
Dozens.....	147,221	50,102	68,067	9,501
Value.....	\$2,490,815	\$683,289	\$965,132	\$201,667
Merino—				
Dozens.....	486,128	364,387	105,242	139,994
Value.....	\$5,706,102	\$4,217,432	\$1,199,949	\$1,133,328
Silk—				
Dozens.....	31,714	10,977	6,810	12,728
Value.....	\$886,248	\$239,218	\$150,202	\$110,286
Silk-mixed—				
Dozens.....	29,895	(5)	(5)	(5)
Value.....	\$393,618	(5)	(5)	(5)
All other—				
Dozens.....	108,827	(1)	(1)	(1)
Value.....	\$501,436	(1)	(1)	(1)
Bathing suits:				
Dozens.....	274,544	(1)	(1)	(1)
Value.....	\$2,033,889	(1)	(1)	(1)
Leggings:				
Dozens.....	74,901	65,326	122,462	71,038
Value.....	\$313,952	\$192,242	\$619,998	\$248,523
Gloves and mittens:				
Dozens.....	2,470,183	2,527,889	2,260,508	1,898,587
Value.....	\$10,519,613	\$7,296,887	\$5,556,260	\$4,244,046
Hoods, scarfs, etc.:				
Dozens.....	987,178	888,223	539,315	343,429
Value.....	\$3,456,326	\$3,217,985	\$1,774,862	\$1,002,392
Cardigan jackets, sweaters, etc.:				
Dozens.....	2,249,142	2,221,410	811,629	594,090
Value.....	\$26,195,002	\$22,430,817	\$8,345,369	\$3,498,837
Shawls:				
Dozens.....	63,264	218,923	435,306	157,622
Value.....	\$713,545	\$916,294	\$1,293,348	\$328,720
All other fancy knit goods:				
Value.....	\$3,196,979	\$2,392,927	\$2,118,842	\$951,052

Table 41—Continued.	HOSIERY AND KNT GOODS.			
	1914	1909	1904	1899
PRODUCTS—continued.				
Boot and shoe linings:				
Square yards.....	6,221,601	9,726,770	11,768,961	10,406,440
Value.....	\$670,095	\$1,209,464	\$1,249,401	\$2,205,003
Eider down:				
Square yards.....	1,076,995	1,298,322	4,843,939	(¹)
Value.....	\$516,957	\$442,431	\$1,018,981	.....
Jersey cloth and stockinette:				
Square yards.....	10,593,986	3,111,272	3,354,026	4,488,911
Value.....	\$4,378,544	\$784,255	\$1,145,127	\$1,305,376
Astrakhan and similar fabrics:				
Square yards.....	1,854,851	410,207	455,274	664,779
Value.....	\$1,251,653	\$269,323	\$354,316	\$332,488
Yarns for sale:				
Cotton—				
Pounds.....	17,052,510	7,457,412	3,304,615	2,419,282
Value.....	\$3,990,349	\$1,568,417	\$654,234	\$422,100
Woolen—				
Pounds.....	116,976	⁶ 488,322	62,653	79,027
Value.....	\$63,861	\$217,114	\$14,268	\$38,307
Worsted—				
Pounds.....	658	(¹)	232,869	51,202
Value.....	\$638	(¹)	\$230,836	\$36,303
Merino—				
Pounds.....	183,147	(¹)	198,037	4,300
Value.....	\$76,905	(¹)	\$100,745	\$2,080
Cotton waste:				
Pounds.....	12,999,218	(¹)	(¹)	(¹)
Value.....	\$628,944	(¹)	(¹)	(¹)
Old bagging and ties, value.....	\$24,452	(¹)	(¹)	(¹)
Amount of contract work, value.....	\$3,649,274	\$1,082,485	\$208,167	\$273,931
All other products, value.....	\$6,014,250	\$4,954,708	\$4,840,033	\$4,157,064
EQUIPMENT.				
Sets of cards.....	3,074	2,671	1,977	.....
Woolen and shoddy.....	863	844	977	1,161
Cotton.....	2,211	1,827	1,000	(¹)
Spindles, producing.....	848,729	729,935	596,362	510,172
Woolen and shoddy.....	254,157	244,453	286,661	290,366
Worsted.....	2,585	2,360	9,664	14,064
Cotton.....	591,987	483,117	300,037	205,742
Sewing machines, all classes.....	65,328	43,885	30,410	24,535
Knitting machines.....	142,240	115,019	88,374	69,047
Power.....	138,167	110,630	81,876	63,238
Spring-beard needle.....	16,138	17,308	13,564	14,177
Latch needle.....	122,029	93,322	68,312	49,061
Hand.....	4,073	4,389	6,498	5,809
Spring-beard needle.....	238	372	335	336
Latch needle.....	3,835	4,017	6,163	5,473

¹ Not reported separately.

² In addition, hosiery and knit goods to the value of \$5,088,033 in 1914, and to the value of \$2,975,749 in 1909, were reported by establishments engaged primarily in other industries.

³ Includes silk half-hose.

⁴ Included in silk hose.

⁵ Included in silk shirts and drawers and combination suits.

⁶ Includes woolen, worsted, and merino yarns.

SILK GOODS, INCLUDING THROWSTERS.

This classification covers the manufacture of broad silks, velvets, plushes, upholstery and tapestry goods; ribbons, laces, veilings, and embroideries; braids and bindings, trimmings, and fringes and gimps; machine twist; and sewing, embroidery, wash, fringe, and floss silks. In all instances silk is the material of predominant value. Some establishments are engaged exclusively in the throwing of raw silk into organzine and tram, which constitute the warp and woof, respectively, of silk goods. The work is either done on commission, the material being furnished by others, or the raw silk is bought and the product sold by the throwster. In the former case only the amount received as commission is included in the value of products reported by the throwster. The throwing of silk in establishments other than those manufacturing the finished product has assumed large proportions, almost two-thirds of the total quantity of raw silk thrown into organzine and tram being reported by

such establishments. For this reason there is some duplication in the total value of products for the industry.

Statistics for the silk industry are given for each census from 1849 to 1914, inclusive, in Table 223 (p. 688).

The figures for 1849 to 1889, inclusive, include establishments that reported silk hose and silk knit goods as the product of chief value. Since 1889 the reports for such establishments have been included under the classification of "hosiery and knit goods." (See Table 41.)

The statistics for 1914 and 1909 show, separately, data for those establishments making finished products and for those engaged exclusively in throwing and winding.

	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Total, 1914.....	902	108,170	\$210,072	\$47,109	\$144,442	\$254,011	\$109,569
1909.....	852	99,037	152,158	38,570	107,767	196,912	89,145
Finished products:							
1914.....	695	89,967	173,462	42,117	131,798	232,692	100,894
1909.....	660	82,993	137,385	34,619	101,810	183,720	81,910
Throwing and winding:							
1914.....	207	18,203	36,610	4,992	12,644	21,319	8,675
1909.....	192	16,044	14,773	3,951	5,957	13,191	7,234

Silk and silk yarn used in textile manufactures.—The use of silk in the manufacture of hosiery, cotton, woolen and worsted goods has increased rapidly. The following table shows the quantity of raw silk and of silk yarn and spun silk reported as material for each of the textile industries at the censuses of 1914, 1909, 1904, and 1899. The use of artificial silk in textile manufacture has become so important in recent years that the quantities reported are also included in this table.

	SILK CONSUMED IN TEXTILE MILLS (POUNDS).			
	1914	1909	1904	1899
Raw silk.....	25,021,945	17,729,306	11,572,783	9,760,770
Silk goods.....	22,374,700	17,472,204	11,572,783	9,760,770
Cotton manufactures.....	1,057,083	257,102		
Hosiery and knit goods.....	1,590,182			
Silk yarn and spun silk.....	10,628,502	9,015,079	6,409,531	5,041,899
Silk goods.....	7,065,208	5,490,944	5,187,945	3,888,755
Cotton manufactures.....	855,123	2,062,006	412,589	560,680
Cotton goods.....	714,093	1,923,727	369,575	507,119
Cotton small wares.....	86,943	138,279	43,014	53,561
Cotton lace.....	54,087			
Hosiery and knit goods.....	1,913,478	982,753	320,671	266,247
Cordage and twine.....				5,874
Wool manufactures.....	794,693	479,376	488,326	320,343
Woolen goods.....	117,291	70,959	107,396	57,978
Worsted goods.....	404,370	211,577	304,930	78,951
Carpets and rugs, other than rag.....	273,032	196,840	76,000	138,414
Artificial silk.....	3,610,644	914,494	466,151	6,065
Silk goods.....	1,902,974	914,494	466,151	6,065
Cotton manufactures.....	450,427	(1)	(1)	(1)
Hosiery and knit goods.....	1,257,243	(1)	(1)	(1)

¹ Not reported separately.

Table 44 presents statistics for the materials, products, and equipment for the manufacture of silk goods, including throwsters, as reported for the census years 1899 to 1914, inclusive.

Table 44

SILK GOODS.

	1914	1909	1904	1899
MATERIALS.				
Total cost.....	\$144,442,321	\$107,766,916	\$75,861,188	\$62,406,665
Silk: ¹				
Raw—				
Pounds.....	22,374,700	17,472,204	11,572,783	9,760,770
Cost.....	\$86,416,857	\$67,787,037	\$45,318,416	\$40,721,877
Spun—				
Pounds.....	3,209,309	2,212,972	1,951,201	1,550,291
Cost.....	\$8,094,427	\$4,848,789	\$4,310,061	\$3,406,059
Artificial—				
Pounds.....	1,902,974	914,494	466,151	6,056
Cost.....	\$3,440,154	\$1,926,894	\$1,623,473	\$10,380
Organzine and tram, purchased—				
Pounds.....	3,855,899	3,377,972	3,236,744	2,338,464
Cost.....	\$16,703,096	\$14,679,719	\$14,552,425	\$10,539,632
Fringe and floss, including waste, noils, etc., purchased—				
Pounds.....	4,328,536	2,402,960	249,811	1,735,179
Cost.....	\$3,066,297	\$1,637,187	\$187,159	\$1,008,947
Yarns, other than silk:				
Cotton, including mercerized—				
Pounds.....	18,333,810	14,111,878	9,018,295	6,664,069
Cost.....	\$7,241,577	\$5,811,532	\$3,057,989	\$1,996,233
Woolen or worsted—				
Pounds.....	1,987,918	610,588	443,155	239,461
Cost.....	\$2,087,804	\$765,989	\$409,867	\$167,770
Mohair—				
Pounds.....	2,645,055	710,108	138,389	104,810
Cost.....	\$1,604,362	\$640,529	\$137,097	\$107,365
All other—				
Pounds.....	291,672	353,780	130,930	108,388
Cost.....	\$438,944	\$456,597	\$108,841	\$134,986
All other materials, cost.....	\$15,348,803	\$9,212,593	\$6,155,860	\$4,313,416
PRODUCTS.				
Total value.....	\$254,011,257	\$196,911,667	\$133,288,072	\$107,256,258
Broad silks:				
Yards.....	216,033,696	185,707,316	124,871,215	87,636,883
Value.....	\$137,719,564	\$107,881,146	\$66,917,762	\$52,152,816
All-silk goods—				
Yards.....	142,713,359	114,876,641	97,870,717	68,437,218
Value.....	\$96,689,801	\$74,471,291	\$55,944,988	\$42,573,279
Piece, dyed—				
Yards.....	59,304,041			
Value.....	\$38,819,874			
Printed—				
Yards.....	4,528,453	19,693,393	21,334,584	7,331,501
Value.....	\$2,637,231	\$11,353,242	\$9,276,445	\$3,342,167
Yarn, dyed—				
Yards.....	78,880,865	95,183,248	76,536,133	61,105,712
Value.....	\$55,232,696	\$63,118,049	\$46,668,543	\$39,231,112
Mixed goods—				
Yards.....	73,320,337	70,830,675	27,000,498	19,199,665
Value.....	\$41,029,763	\$33,409,855	\$10,972,774	\$9,579,537
Piece, dyed—				
Yards.....	39,559,303			
Value.....	\$21,843,055			
Printed—				
Yards.....	310,731	40,044,433	15,603,353	8,558,884
Value.....	\$203,848	\$15,728,195	\$4,399,654	\$2,868,506
Yarn, dyed—				
Yards.....	33,450,303	30,786,242	11,397,145	10,640,781
Value.....	\$18,982,860	\$17,681,660	\$6,573,120	\$6,711,031
Velvets:				
Yards.....	16,318,135	10,093,583	7,262,315	5,122,249
Value.....	\$8,570,022	\$4,767,990	\$3,161,206	\$2,479,903
Plushes:				
Yards.....	9,114,992	2,759,411	2,547,367	3,848,684
Value.....	\$10,135,842	\$2,104,768	\$1,340,815	\$2,480,068
Upholstery and tapestries:				
Yards.....	477,699	226,717	1,766,210	1,333,119
Value.....	\$840,126	\$382,820	\$1,559,982	\$1,009,835
Ribbons, value.....	\$38,201,293	\$32,744,873	\$21,890,604	\$18,467,179
Laces, nets, veils, veilings, etc., value.....	\$1,328,933	\$1,350,850	\$745,489	\$803,104

See footnotes on p. 70.

Table 44—Continued.

	SILK GOODS.			
	1914	1909	1904	1899
PRODUCTS—continued.				
Embroideries, value.....	\$33,500	\$485,322	\$112,362	\$57,625
Fringes and gimps, value.....	\$1,025,188	\$824,527	\$1,016,954	\$444,787
Braids and bindings, value.....	\$3,073,648	\$4,483,248	\$3,493,977	\$1,522,565
Tailors' trimmings, value.....	\$210,741	\$41,040	\$700	\$26,624
Military trimmings, value.....	\$431,422	\$346,963	\$170,231	\$54,666
Machine twist:				
Pounds.....	659,540	1,088,780	932,998	987,917
Value.....	\$4,036,807	\$6,341,719	\$5,521,055	\$5,997,974
Sewing and embroidery silks:				
Pounds.....	744,703	660,507	606,357	477,658
Value.....	\$5,046,452	\$3,778,306	\$3,927,954	\$3,276,826
Fringe and floss silks:				
Pounds.....	157,791	86,739	205,354	261,643
Value.....	\$598,354	\$401,049	\$697,062	\$971,390
Organzine, for sale:				
Pounds.....	1,492,999	1,077,931		
Value.....	\$6,325,291	\$5,330,528	2,025,645	2,468,387
Tram, for sale:			\$9,190,650	\$11,167,191
Pounds.....	2,577,402	1,662,388		
Value.....	\$9,698,637	\$7,219,982		
Spun silk, for sale:				
Pounds.....	1,607,416	779,462	570,529	437,459
Value.....	\$4,577,058	\$2,104,066	\$1,660,647	\$1,026,227
All other products, value.....	⁵ \$13,757,772	⁶ \$7,958,120	⁶ \$8,164,566	⁶ \$2,980,258
Received for contract work.....	\$8,400,607	\$8,364,350	\$3,716,056	\$2,337,220
<i>Work done by throwsters (materials furnished by others).</i>				
Thrown into organzine, pounds.....	7,088,229	6,114,209	3,635,384	2,331,456
Thrown into tram, pounds.....	6,781,010	6,638,793	3,466,467	1,967,203
EQUIPMENT.				
Spindles:				
Throwing—				
Winding (raw silk only).....	677,960	637,565	624,686	442,410
Spinning and twisting.....	2,023,491	1,647,415		
Spun silk—				
Spinning.....	107,251	130,547	1,394,020	1,213,493
Looms.....				
40-inch or under, reed space (including Jacquard looms).....	85,058	75,406	60,058	44,430
Over 40-inch reed space (including Jacquard looms).....	26,431	28,426		
Velvet (including Jacquard looms).....	44,549	35,214	50,449	36,989
Ribbon (including Jacquard looms).....	2,524	1,196		
Jacquard machines.....	11,554	10,570	9,609	7,441
	6,826	8,985		

¹ Does not include 3,039,643 pounds of raw and thrown silk, at a cost of \$12,126,467; spun silk, 411,287 pounds, at a cost of \$1,507,232; and artificial silk, 1,257,243 pounds, costing \$2,337,949, used in the manufacture of hosiery and knit goods in 1914.

² Does not include waste, noils, etc.

³ In addition, similar classes of silk goods, to the value of \$1,776,660 in 1914 and \$1,218,101 in 1909, were made in establishments engaged primarily in the manufacture of other products.

⁴ For comparison, the figures for "plain and fancies" and "Jacquards" are combined for 1909, 1904, and 1899.

⁵ Includes 7,232,757 yards of undyed, unfinished broad silks, valued at \$3,141,765.

⁶ Includes "millinery trimmings," "ladies' dress trimmings," and "cloak trimmings," not reported separately on 1914 schedule.

Considerable duplication occurs in the total cost of materials and in the total value of products shown in the preceding table. To eliminate this duplication the following method may be used: (1) Organzine and tram, reported as material and product, may be deducted from both materials and products, respectively; (2) spun silk, reported as a product, may be deducted from both materials and products; (3) fringe and floss, reported as material, deducted from both materials and products; and (4) amount received for contract work, reported as product, deducted from products.

WOOL MANUFACTURES.

The statistics for the manufacture of woolen, worsted, and felt goods, carpets and rugs, other than rag, and wool-felt hats are here assembled. These industries are the principal consumers of wool, although some wool is used in the manufacture of hosiery and knit goods. Wool pulling, wool scouring, and the making of wool shoddy represent processes in the manufacture of wool products rather than the production of finished goods. There is, of course, considerable duplication in value of products within this wool group, due to the use of the products of one establishment—especially yarn—as material for another establishment.

Table 45 gives the general statistics for the wool group of industries for the census years 1899 to 1914, inclusive. Comparative statistics for the separate industries are given in Table 223 (p. 568).

	WOOL MANUFACTURES.			
	1914	1909	1904	1899
Number of establishments.....	979	1,124	1,213	1,414
Persons engaged.....	203,716	209,882	186,699	164,713
Proprietors and firm members.....	578	866	1,107	1,110
Salaried employees.....	7,853	6,987	5,616	4,495
Wage earners (average number).....	195,285	202,029	179,976	159,108
Primary horsepower.....	442,330	400,702	322,914	271,565
Capital.....	\$497,699,293	\$506,205,584	\$370,861,691	\$310,179,749
Salaries and wages.....	108,009,668	100,268,868	78,974,869	64,389,312
Salaries.....	14,651,788	12,306,199	8,177,345	6,455,495
Wages.....	93,357,880	87,962,669	70,797,524	57,933,817
Paid for contract work.....	2,456,260	3,629,257	1,220,708	1,749,222
Rent and taxes.....	3,922,866	2,925,922	2,357,150	2,007,374
Cost of materials.....	298,063,498	322,441,043	242,561,096	181,159,127
Value of products.....	464,249,813	507,166,710	380,934,003	296,990,484
Value added by manufacture (value of products less cost of materials).....	166,186,315	184,725,667	138,372,907	115,831,357

Wool and wool yarn used as material in the manufacture of textiles.—The following table shows the quantity of wool and wool yarn reported as material for each branch of textile manufacture at the censuses of 1914, 1909, 1904, and 1899.

	WOOL AND WOOL YARNS CONSUMED IN TEXTILE MILLS (POUNDS).			
	1914	1909	1904	1899
Wool.....	510,008,799	559,850,995	501,468,203	412,745,779
Wool manufactures.....	502,857,333	552,503,710	483,526,095	394,369,523
Woolen goods.....	78,873,319	87,037,951	157,335,727	150,200,616
Worsted goods.....	355,854,756	387,717,415	261,368,084	179,977,936
Felt goods.....	14,989,852	12,409,826	11,868,238	9,606,263
Carpets and rugs, other than rag.....	52,552,449	64,135,020	51,320,521	51,871,334
Wool-felt hats.....	606,957	1,203,498	1,633,525	2,713,374
Cotton goods.....		41,400		
Hosiery and knit goods.....	6,947,598	7,068,788	17,300,616	17,953,907
Wool shoddy.....	203,868	237,097	597,492	422,349
Fur-felt hats.....			44,000	
Woolen, worsted, and merino yarns.....	115,870,817	122,714,085	102,411,024	89,383,267
Wool manufactures.....	87,404,089	99,763,501	84,203,600	77,185,429
Woolen goods.....	3,898,922	8,035,598	9,582,443	12,489,092
Worsted goods.....	52,427,109	54,016,104	29,673,246	22,163,388
Felt goods.....	116,338	116,115	124,350	80,396
Carpets and rugs, other than rag.....	30,961,720	37,595,694	44,823,531	42,452,553
Cotton manufactures.....	694,715	1,613,118	1,428,077	1,531,103
Cotton goods.....	624,740	1,251,282	1,398,904	1,209,444
Cotton small wares.....	69,975	361,836	29,173	321,659
Hosiery and knit goods.....	25,784,095	20,524,878	16,197,803	10,426,592
Silk goods, including throwsters.....	1,987,918	610,588	581,544	239,461
Wool shoddy.....		202,000		
Cordage and twine.....				682

Woolen and worsted goods.—Woolen goods are made from carded wool and worsted goods from combed wool. Some woolen mills also make worsted goods, and some worsted mills also make woolen goods, while many establishments which formerly manufactured woolen goods have made a change in their machinery and now manufacture worsted goods. This overlapping makes separate statistics for the two industries somewhat misleading. The statistics for 1859 to 1914, inclusive, are shown for the two industries combined in Table 223, which also gives statistics, by states, for 1914.

Some of the establishments assigned to these industries also make cotton goods, clothing, and other articles which properly belong under other classifications, the value of which is included in the table.

Worsteds goods.—While it is not possible to compile exact statistics for the manufacture of worsted goods, the progress of the industry since 1859 is indicated by the following table, which gives data for those establishments whose products of chief value were worsted goods:

CENSUS YEAR.	WORSTED GOODS.							
	Number of establishments.	Wage earners (average number).	Primary horse-power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	298	109,527	246,623	\$281,781	\$51,749	\$182,801	\$275,668	\$92,867
1909.....	324	111,012	215,453	295,058	47,152	207,787	312,625	104,838
1904.....	226	69,251	119,377	162,465	26,270	109,658	165,745	56,087
1899.....	186	57,008	96,232	132,188	20,093	77,075	120,314	43,239
1890.....	143	42,978	57,111	68,085	14,945	50,707	79,195	28,488
1879.....	76	18,803	16,497	20,374	5,663	22,014	33,550	11,536
1859.....	102	12,920	8,016	10,086	4,369	14,308	22,090	7,782
1850.....	3	2,378	(¹)	3,230	544	2,443	3,701	1,258

¹ Figures not available.

Woolen goods.—The favor in which worsted goods are held has resulted in a great increase in the manufacture of that class of goods and has apparently checked the growth of the manufacture of woolen goods. Statistics for establishments engaged principally in the manufacture of woolen goods are shown in the following table for each census year, 1849 to 1914, inclusive:

CENSUS YEAR.	WOOLEN GOODS.							
	Number of establishments.	Wage earners (average number).	Primary horse-power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	501	49,165	134,597	\$107,872	\$24,204	\$63,696	\$103,816	\$40,120
1909.....	587	52,180	132,830	120,320	22,575	65,652	107,119	41,467
1904.....	792	72,747	157,989	140,302	28,828	87,831	142,197	54,366
1899.....	1,035	68,893	138,428	124,386	24,757	71,012	118,430	47,413
1879.....	1,311	76,915	122,501	130,990	26,139	82,270	133,578	51,308
1869.....	1,990	86,504	106,507	96,096	25,836	100,846	160,607	59,761
1859.....	2,391	80,053	85,101	98,824	26,878	96,433	155,406	58,973
1850.....	1,260	41,360	(¹)	30,863	9,610	36,586	61,895	25,309
1849.....	1,559	39,252	(¹)	28,119	(²)	25,756	43,208	17,452

¹ Figures not available

² Not reported separately.

Table 49 presents comparative statistics pertaining to materials, products, and equipment for establishments engaged primarily in the manufacture of woolen and worsted goods. The total value of products for these industries involves considerable duplication, due to the use of partly finished products of some establishments as material for others.

The largest class of goods manufactured by the establishments in these industries consists of fabrics designed to be made into clothing. At previous censuses this class of goods has been divided into three subclasses: (a) Goods designed for men's suitings, (b) those designed for women's dress goods, and (c) those used for overcoatings and cloakings. At the present census, however, it was impossible to secure the desired classification from some of the large manufacturers; consequently only the total for this sort of goods can be shown.

The production of worsted (combed wool) goods is confined almost entirely, and the production of woolen (carded wool) goods very largely, to the New England and Middle Atlantic states.

Table 49

WOOLEN AND WORSTED GOODS.

KIND.	1914	1909	1904	1899
	MATERIALS.			
Total cost.....	\$246,496,667	\$273,438,570	\$197,489,306	\$148,087,178
Wool:				
In condition purchased—				
Pounds.....	434,728,075	474,755,366	418,703,811	330,178,552
Cost.....	\$108,087,619	\$136,666,917	\$105,433,451	\$78,803,830
Domestic—				
Pounds.....	266,634,390	310,602,279	319,800,490	250,393,205
Cost.....	\$64,571,871	\$85,018,238	\$78,673,136	\$59,046,158
Foreign—				
Pounds.....	168,093,685	164,153,087	98,903,321	79,785,347
Cost.....	\$43,515,748	\$51,648,679	\$26,760,315	\$19,757,672
Equivalent in scoured condition, pounds.	257,448,746	290,706,970	241,280,065	192,705,519
Camel, alpaca, and vicuna hair:				
Pounds.....	5,445,957	4,637,213		
Cost.....	\$1,514,360	\$1,416,053		
Mohair:			6,507,631	5,003,966
Pounds.....	8,913,500	3,168,209	\$1,957,581	\$1,857,707
Cost.....	\$2,940,994	\$983,070		
All other animal hair:				
Pounds.....	14,761,502	17,356,100	22,987,332	20,535,079
Cost.....	\$1,062,810	\$932,911	\$1,369,776	\$1,170,756
Cotton:				
Pounds.....	28,387,022	20,024,061	32,613,408	40,244,710
Cost.....	\$3,241,352	\$2,515,409	\$4,072,907	\$3,280,000
Rags, clippings, etc.:				
Pounds.....	59,425,149	40,402,460	79,367,290	
Cost.....	\$4,754,308	\$2,856,966	\$5,668,634	\$2,817,063
Recovered wool fiber:				
Pounds.....	26,276,924	21,454,187	31,919,456	33,036,767
Cost.....	\$3,551,217	\$3,058,214	\$4,472,666	\$4,070,836
Waste and noils of wool, mohair, camel's hair, etc.:				
Pounds.....	42,411,874	26,473,311	26,032,838	15,714,171
Cost.....	\$5,906,485	\$7,523,283	\$6,056,227	\$3,891,369
Tops:				
Pounds.....	29,106,307	20,828,245	9,160,929	5,566,108
Cost.....	\$16,679,819	\$14,614,527	\$5,073,078	\$2,865,546
Yarns:				
Woolen—				
Pounds.....	2,168,371	931,222	5,750,088	5,906,862
Cost.....	\$1,174,815	\$558,270	\$2,622,882	\$2,675,143
Worsted—				
Pounds.....	53,626,797	59,148,771	31,047,516	25,110,939
Cost.....	\$44,660,712	\$56,033,701	\$24,904,511	\$19,495,251
Merino—				
Pounds.....	530,863	1,971,709	2,458,085	3,634,679
Cost.....	\$168,519	\$318,456	\$581,107	\$664,527
Cotton—				
Pounds.....	32,105,412	39,169,388	32,598,072	35,342,726
Cost.....	\$9,076,933	\$10,492,185	\$8,032,773	\$6,814,279
Silk and spun silk—				
Pounds.....	515,950	282,536	412,307	131,915
Cost.....	\$2,010,885	\$1,142,663	\$1,679,883	\$529,789
All other—				
Pounds.....	1,978,193	1,046,735	411,779	1,127,926
Cost.....	\$103,334	\$40,739	\$21,118	\$65,434
Chemicals and dyestuffs, cost.	\$8,536,232	\$8,820,928	\$7,456,550	\$6,595,160
All other materials, cost.	\$30,026,272	\$25,464,278	\$18,066,162	\$12,489,888
PRODUCTS.				
Total value.....	\$379,484,379	\$419,743,521	\$307,941,710	\$238,744,502
All-wool woven goods:				
Square yards.....	323,037,563	322,944,365	260,567,488	216,359,702
Value.....	\$203,390,017	\$219,853,767	\$158,390,336	\$117,757,169

See footnotes on p. 75.

Table 49—Continued.

KIND.	WOOLEN AND WORSTED GOODS.			
	1914	1909	1904	1899
PRODUCTS—continued.				
All-wool woven goods—Continued.				
Wool cloths, doeskins, cassimeres, chev- lots, etc.—				
Square yards.....		40,843,979	42,487,566	34,298,426
Value.....		\$29,291,059	\$29,556,252	\$22,645,869
Woolen overcoatings, cloakings, kerseys, etc.—				
Square yards.....	90,950,381			
Value.....	\$55,660,503	14,697,770	22,411,530	18,729,194
Value.....		\$11,230,856	\$16,934,112	\$16,131,709
Wool dress goods, sackings, tricots, etc., and opera and similar flannels—				
Square yards.....		29,099,956	48,874,396	33,594,212
Value.....		\$16,385,498	\$19,826,017	\$12,970,489
Worsted coatings, serges, and suitings—				
Square yards.....		119,655,069	59,592,811	54,033,679
Value.....		\$101,908,153	\$56,731,196	\$43,003,550
Worsted overcoatings and cloakings—				
Square yards.....	222,420,785	654,404	1,057,668	877,133
Value.....	\$141,778,035	\$821,688	\$546,170	\$597,390
Worsted dress goods, cashmeres, serges, bunting, etc.—				
Square yards.....		105,801,349	66,428,825	57,712,086
Value.....		\$54,030,376	\$27,802,181	\$16,316,392
Carriage cloths—				
Square yards.....		1,782,855	1,741,765	1,220,408
Value.....	\$514,226	\$947,862	\$964,557	\$696,999
Flannels for underwear—				
Square yards.....	2,176,264	3,856,353	8,710,131	9,324,720
Value.....	\$880,494	\$1,257,271	\$2,045,838	\$2,344,559
Blankets—				
Square yards.....	6,489,689	5,137,903	7,316,179	5,454,173
Value.....	\$4,186,754	\$3,228,797	\$2,751,029	\$2,316,968
Horse blankets—				
Square yards.....	102,205	247,395	740,237	514,952
Value.....	\$82,398	\$185,430	\$418,219	\$250,211
Woven shawls—				
Square yards.....		704,153	895,777	600,104
Value.....	\$124,486	\$404,583	\$557,370	\$500,523
All other—				
Square yards.....	259,527	463,179	310,603	615
Value.....	\$292,245	\$167,194	\$257,375	\$510
Union, or cotton mixed, woven goods:				
Square yards.....	46,244,730	37,453,351	63,197,407	57,334,570
Value.....	\$16,473,448	\$14,327,973	\$26,288,407	\$23,111,696
Unions, tweeds, chevots, cassimeres, etc.—				
Square yards.....		18,917,478	35,103,110	30,767,915
Value.....		\$7,780,854	\$15,050,726	\$13,693,830
Overcoatings and cloakings—				
Square yards.....	31,400,082			
Value.....	\$11,710,610	4,281,739	5,373,053	6,087,366
Value.....		\$2,363,381	\$3,353,758	\$3,518,613
Sackings, tricots, dress goods, and opera and similar flannels—				
Square yards.....		4,319,539	11,690,740	11,176,752
Value.....		\$1,776,721	\$4,926,596	\$3,669,584
Flannels for underwear—				
Square yards.....	4,985,575	7,063,572	7,273,761	6,217,094
Value.....	\$1,089,661	\$1,308,369	\$1,528,928	\$1,284,578
Blankets—				
Square yards.....	3,937,463	1,717,758	3,114,110	1,530,696
Value.....	\$2,067,934	\$650,714	\$1,198,706	\$561,049
All other—				
Square yards.....	5,911,610	1,153,265	642,633	1,554,747
Value.....	\$1,605,243	\$447,934	\$229,693	\$381,442
Cotton-warp woven goods:				
Square yards.....	196,179,866	210,346,081	182,057,061	152,878,584
Value.....	\$48,816,015	\$62,265,854	\$50,058,293	\$42,437,799
Wool fillings, cassimeres, doeskins, jeans, tweeds, coatings, etc.—				
Square yards.....		45,244,866	34,602,165	37,160,449
Value.....		\$12,107,320	\$10,877,081	\$11,024,538
Wool-filling overcoatings and cloakings—				
Square yards.....	53,509,462	2,075,502	8,198,406	3,917,498
Value.....	\$13,598,007	\$771,879	\$2,478,378	\$1,430,430
Wool-filling dress goods and repellents—				
Square yards.....		12,916,060	12,139,080	7,496,898
Value.....		\$2,741,816	\$3,230,561	\$1,890,488
Nettens and linseys—				
Square yards.....		5,102,460	22,339,112	13,051,729
Value.....	\$8,415,079	\$912,182	\$4,074,800	\$2,873,181

See footnotes on p. 75.

Table 49—Continued. KIND.	WOOLEN AND WORSTED GOODS.			
	1914	1909	1904	1899
PRODUCTS—continued.				
Cotton-warp woven goods—Continued.				
Worsted-filling cassimeres, doeskins, jeans, tweeds, coatings, etc.—				
Square yards.....		29,220,252	16,688,620	12,663,719
Value.....		\$15,009,081	\$6,969,402	\$7,267,508
Worsted-filling dress goods, cashmeres, serges, mohairs, etc.—				
Square yards.....	56,763,091	65,112,981	49,300,369	45,784,011
Value.....	\$15,563,099	\$14,798,965	\$12,711,554	\$10,423,206
Domest flannels and shirtings—				
Square yards.....	4 16,092,266	4,571,765	4,285,838	4,555,013
Value.....	\$2,814,054	\$911,967	\$769,476	\$976,465
Linings, Italian cloths, and lastings—				
Square yards.....	36,196,243	28,928,148	17,619,325	10,157,039
Value.....	\$9,804,661	\$9,008,799	\$4,505,927	\$2,228,434
Blankets—				
Square yards.....	4 17,973,821	9,746,841	9,267,144	11,107,104
Value.....	\$3,010,070	\$2,684,919	\$2,218,243	\$2,241,342
Horse blankets—				
Square yards.....	5,831,305	4,210,098	6,307,836	5,702,315
Value.....	\$1,539,526	\$1,676,942	\$1,083,154	\$1,252,824
Carriage robes—				
Square yards.....	1,282,417	2,889,444	1,309,166	1,250,233
Value.....	\$936,687	\$1,396,595	\$1,139,217	\$815,233
All other—				
Square yards.....	116,182	327,664	.....	32,576
Value.....	\$14,620	\$245,389	.....	\$14,150
Upholstering goods and sundries, value.....	\$2,042,029	\$1,986,330	\$1,625,233	\$3,259,727
Woolen and worsted—				
Square yards.....	1,351,262	1,176,542	1,060,739	447,568
Value.....	\$1,539,381	\$1,528,648	\$908,937	\$742,121
All other, value.....	\$502,648	\$457,682	\$716,296	\$2,517,606
Partially manufactured products for sale, value.....	\$100,954,696	\$115,032,485	\$66,466,672	\$47,589,422
Yarns:				
Woolen—				
Pounds.....	26,125,575	28,520,493	42,878,320	32,699,851
Value.....	\$8,783,020	\$7,505,412	\$9,993,894	\$6,804,626
Worsted—				
Pounds.....	86,412,097	88,323,953	55,475,235	5 43,003,343
Value.....	\$69,801,271	\$80,395,543	\$40,142,077	6 \$30,081,425
Woolen, union or merino—				
Pounds.....	6,473,849	10,249,625	8,824,064	.....
Value.....	\$1,689,530	\$2,143,416	\$2,538,018	15,974,567
Worsted, union or merino—				
Pounds.....	4,048,514	3,761,737	3,314,549	4,668,125
Value.....	\$3,173,034	\$3,522,812	\$2,460,558	.....
All other—				
Pounds.....	9,499,666	3,195,553	2,799,060	4,536,105
Value.....	\$2,425,360	\$974,870	\$1,162,795	\$1,451,390
Worsted tops and slubbing—				
Pounds.....	3,985,170	11,321,279	4,772,582	(5)
Value.....	\$4,926,929	\$8,027,231	\$2,855,171	(5)
Noils—				
Pounds.....	24,731,874	27,479,293	15,379,600	12,176,843
Value.....	\$6,835,105	\$8,938,589	\$4,865,976	\$3,354,187
Waste—				
Pounds.....	26,433,970	24,420,444	17,946,076	8,163,294
Value.....	\$3,320,447	\$3,534,761	\$2,448,183	\$1,229,669
All other products, value.....	\$4,371,538	\$3,241,008	\$3,924,232	\$3,019,906
Work on materials for others.....	\$3,436,636	\$3,026,255	\$1,188,537	\$1,568,783
EQUIPMENT.				
Sets of woolen cards.....	4,222	4,500	5,178	5,695
Spindles.....	4,722,032	4,287,640	3,747,934	3,277,607
Producing.....	3,880,583	3,553,194	3,228,423	2,873,528
Doubling and twisting.....	841,449	734,446	519,511	404,079
Looms, all classes.....	75,828	72,532	63,867	61,395
Wool-combing machines.....	2,294	1,988	1,440	1,317

¹ Not reported separately.

² In addition woolen and worsted goods to the value of \$2,635,889 in 1914 and of \$3,183,485 in 1909 were made by establishments engaged primarily in the manufacture of other products; of these amounts products valued at \$1,500,567 in 1914 and \$1,902,187 in 1909 were made by carpet and rug and by felt goods mills.

³ Figures for 1914 apply to goods made in woolen mills only; the output of these goods by worsted mills is included in "all other all-wool woven goods."

⁴ Figures for 1914 apply to goods made in woolen mills only; the output of these goods by worsted mills is included in "all other cotton-warp woven goods."

⁵ Worsted tops and slubbing included with worsted yarn.

Felt goods.—Most of the products included under this classification are made without weaving. The hair, wool, etc., is matted together by rolling, beating, and pressure, with the aid of moisture and heat, utilizing the natural tendency of the fibers to interlace. In the case of woven felt goods, such as paper-makers' felts, a heavy fabric is first woven and then felted to the desired thickness. A large variety of products is included, the output embracing felt cloth, trimming and lining felts, paper-makers' felt cloth, boot and shoe linings, saddle felts, piano hammers, table and piano covers, polishing felts, etc. This industry was first shown separately at the census of 1879, having been included with woolen goods prior to that date. (See Table 223.)

Table 50 presents the statistics of materials, products, and equipment for all establishments engaged primarily in the manufacture of felt goods except those making hats. The aggregate value of products of the three felting industries—the manufacture of felt goods, fur-felt hats, and wool-felt hats—was \$52,986,993 in 1914, \$64,099,667 in 1909, \$48,035,213 in 1904, and \$37,864,818 in 1899, the decrease in value from 1909 to 1914 being 17.3 per cent.

Table 50	FELT GOODS.			
	1914	1909	1904	1899
MATERIALS.				
Total cost.....	\$8,308,270	\$6,967,206	\$5,754,026	\$3,801,028
Wool, in condition purchased:				
Pounds.....	14,969,852	12,409,826	11,868,238	9,606,263
Cost.....	\$4,030,114	\$3,927,393	\$3,388,588	\$2,196,440
Equivalent of above in scoured condition, pounds.....	10,476,716	9,308,172	8,131,082	6,468,097
Animal hair, etc.:				
Pounds.....	11,540,635	8,144,011	6,974,634	2,819,521
Cost.....	\$739,955	\$239,244	\$373,797	\$125,803
Cotton:				
Pounds.....	3,117,272	1,375,670	1,982,624	1,225,850
Cost.....	\$297,632	\$155,815	\$217,200	\$77,683
Recovered wool fiber:				
Pounds.....	3,502,795	2,536,243	1,532,127	712,373
Cost.....	\$409,518	\$261,878	\$157,031	\$80,737
Waste and noils:				
Pounds.....	4,064,699	4,874,712	1,948,969	2,653,590
Cost.....	\$1,019,687	\$1,220,110	\$452,509	\$552,992
Chemicals and dyestuffs, cost.....	\$269,921	\$219,891	\$169,750	\$128,296
All other materials, cost.....	\$1,541,443	\$942,875	\$975,151	\$639,077
PRODUCTS.				
Total value.....	\$13,692,765	\$11,852,626	\$8,948,594	\$6,461,691
Felt cloths:				
Square yards.....	(¹)	3,764,468	3,689,610	2,056,002
Value.....	\$797,048	\$1,381,854	\$1,830,627	\$548,543
Trimming and lining felts, felt skirts, table and piano covers:				
Square yards.....	8,369,330	5,953,410		
Value.....	\$1,321,337	\$1,329,686	5,145,340	2,469,830
Saddle felts:				
Pounds.....	2,291,662	1,650,991	\$1,188,908	\$796,718
Value.....	\$973,353	\$575,849		
Endless belts:				
Pounds.....	3,941,795	3,243,034	1,770,124	1,114,357
Value.....	\$4,164,186	\$3,417,822	\$1,707,216	\$1,084,835
Boot and shoe linings:				
Square yards.....	3,028,286	1,661,090	2,823,137	1,052,538
Value.....	\$1,512,783	\$514,456	\$781,450	\$540,110
Hair felting:				
Square yards.....	1,350,436	1,159,999	605,214	125,000
Value.....	\$635,041	\$331,045	\$191,998	\$56,950
All other felts, value.....	\$3,691,081	\$3,549,876	\$2,592,894	\$2,261,918
All other products, value.....	\$597,936	\$552,038	\$655,501	\$1,172,617
EQUIPMENT.				
Woolen cards, sets.....	573	472	451	² 302
Spindles.....	37,492	30,353	17,817	24,286
Producing.....	36,462	29,463	17,457	23,235
Doubling and twisting.....	1,030	890	360	1,051
Looms, all classes.....	472	408	265	284

¹ Not reported.² Not fully reported.

HATS AND CAPS.

The statistics for the manufacture of hats are included under six classifications: "Hat and cap materials"; "hats and caps, other than felt, straw, and wool"; "hats, straw"; "hats, wool-felt"; "hats, fur-felt"; and as "trimmed hats, and hat frames," under "millinery and lace goods." The following statement summarizes the statistics for these six classifications and gives a total for all varieties of head coverings as far as it can be shown from census reports. The inclusion of hat and cap materials and of hat bodies and hats in the rough results in duplication, as these materials are included in the value of products of the establishments that produce the complete article.

Table 51

HATS AND CAPS, 1914.

	Total.	Hats, fur-felt.	Hats, wool-felt.	Hats, straw.	Hats and caps, other than felt, straw, and wool.	Trimmed hats and hat frames.	Hat and cap materials.
Number of establishments..	1,715	224	30	149	580	634	98
Persons engaged.....	65,891	22,932	1,372	10,619	8,942	19,954	2,072
Proprietors and firm members.....	1,939	163	38	137	797	703	101
Salaried employees.....	6,203	1,451	85	999	823	2,649	196
Wage earners (average number).....	57,749	21,318	1,249	9,483	7,322	16,602	1,775
Primary horsepower.....	37,614	20,851	3,091	5,248	1,339	4,131	2,954
Capital.....	\$85,539,806	\$39,401,429	\$2,608,839	\$12,588,754	\$6,846,996	\$17,676,716	\$6,417,072
Salaries and wages.....	40,214,448	14,000,263	747,131	7,019,971	5,431,775	11,948,381	1,066,927
Salaries.....	8,020,757	1,929,451	147,553	1,766,943	924,254	2,989,875	262,681
Wages.....	32,193,691	12,070,812	599,578	5,253,028	4,507,521	8,958,506	804,246
Paid for contract work.....	258,473	19,825	100	32,513	109,008	69,807	27,220
Rent and taxes.....	2,606,845	324,626	44,531	443,934	454,837	1,255,956	82,961
Cost of materials.....	72,969,411	16,947,058	978,339	14,085,786	9,267,577	26,638,794	5,051,857
Value of products.....	138,622,200	37,349,744	1,944,484	25,443,501	18,593,221	48,361,908	6,929,342
Value added by manufacture (value of products less cost of materials).....	65,652,789	20,402,686	966,145	11,357,715	9,325,644	21,723,114	1,877,485

Hats, fur-felt.—The manufacture of stiff and soft hats of fur felt is presented under this heading. The fur of the rabbit, the hare, and the coypu (a South American aquatic rodent) is the chief material. In some instances it is removed from the skin in the larger hat shops, but to what extent can not be determined from the returns. Much of the fur is bought from establishments doing nothing but cutting hatters' fur; they are classed under "hat and cap materials." A considerable quantity of cut fur is imported. While many concerns classed under "hats, fur-felt" make the hat from start to finish, others make nothing but the hat bodies, some of them doing work under contract on materials furnished by other manufacturers, and still others do finishing only. There is thus some duplication in the value of products.

Separate statistics were first shown at the census of 1899. In 1879 and in 1889 fur-felt hats were included with "hats and caps, not including wool hats," and in 1869 with "hats and caps." The statistics of the fur-felt hat industry for the last four censuses are given in Table 223 (p. 636).

Table 52 gives the quantity and value of the materials and products of the fur-felt hat industry in 1914, 1909, 1904, and 1899.

	HATS, FUR-FELT.			
	1914	1909	1904	1899
MATERIALS.				
Total cost.....	\$16,947,058	\$22,109,231	\$15,975,206	\$13,513,668
Hatters' fur:				
Pounds.....	5,766,904	8,645,576	6,718,359	6,166,269
Cost.....	\$7,108,248	\$9,278,922	\$6,743,936	\$6,376,991
Fur-felt hat bodies and hats in the rough:				
Dozens.....	395,848	406,447	211,760	148,212
Cost.....	\$2,453,503	\$2,575,248	\$1,351,372	\$882,986
Chemicals and dyestuffs, cost.....	\$432,161	\$343,587	\$1,140,281	\$656,794
All other materials, cost.....	\$6,953,146	\$9,411,474	\$6,739,617	\$5,596,897
PRODUCTS.				
Total value.....	¹ \$37,349,744	¹ \$47,864,630	¹ \$36,629,353	\$27,811,187
Fur-felt hats:				
Dozens.....	2,118,634	2,989,252	2,611,875	1,882,372
Value.....	\$33,603,591	\$43,442,466	\$34,314,234	\$25,385,506
Fur-felt hat bodies and hats in the rough:				
Dozens.....	329,363	366,370	88,986	165,010
Value.....	\$2,372,987	\$2,708,738	\$660,959	\$992,730
All other products, value.....	\$977,236	\$1,164,872	\$1,093,361	\$941,032
Work on materials for others.....	\$396,040	\$553,554	\$560,799	\$491,919

¹In addition, in 1914, fur-felt hats, to the value of \$476,449, in 1909, to the value of \$806,601, and in 1904, to the value of \$333,441, were made by establishments engaged primarily in the manufacture of products other than those covered by the industry designation.

Hats, wool-felt.—The materials used in this industry are principally wool and wool noils. The statistics from 1879, when the industry was first reported separately, to 1914, inclusive, are given in Table 223. Data for materials and products, 1899 to 1914, inclusive, are given in Table 53. The decrease in the total value of all products for the decade, 1904 to 1914, was 20.9 per cent. The output of finished wool hats in 1914 was smaller than in any previous year reported.

	HATS, WOOL-FELT.			
	1914	1909	1904	1899
MATERIALS.				
Total cost.....	\$978,339	\$2,472,263	\$1,369,810	\$2,042,202
Wool, in condition purchased:				
Pounds.....	606,957	1,203,498	1,633,525	2,713,374
Cost.....	\$298,345	\$404,127	\$495,594	\$788,973
Equivalent of above in scoured condition, pounds.....	561,639	989,110	1,231,576	1,898,605
Wool waste and noils:				
Pounds.....	454,099	1,281,784	287,363	362,982
Cost.....	\$213,851	\$661,172	\$119,407	\$370,792
Wool-felt hat bodies and hats in the rough:				
Dozens.....	13,449	21,864	12,089	4,939
Cost.....	\$26,646	\$83,020	\$25,997	\$13,920
Chemicals and dyestuffs, cost.....	\$34,501	\$104,508	\$63,905	\$108,502
All other materials, cost.....	\$404,996	\$1,219,441	\$664,907	\$760,015
PRODUCTS.				
Total value.....	¹ \$1,944,484	¹ \$4,382,411	\$2,457,266	\$3,591,940
Wool-felt hats:				
Dozens.....	381,044	590,957	446,121	811,425
Value.....	\$1,777,225	\$3,646,787	\$2,290,070	\$3,161,361
Wool-felt hat bodies and hats in the rough:				
Dozens.....	5,715	53,896	18,587	56,006
Value.....	\$13,029	\$309,492	\$100,491	\$120,262
All other products, value.....	\$154,230	\$426,132	\$66,705	\$310,317

¹In addition, in 1914, wool-felt hats to the value of \$305,181; and in 1909, to the value of \$904,643, were made by establishments engaged primarily in the manufacture of products other than those covered by the industry designation.

CARPETS, RUGS, MATS, AND OTHER FLOOR COVERINGS.

The following table gives for 1914 general totals for all kinds of floor covering and includes the manufacture of woven carpets and rugs, rag carpets, matting from cocoa fiber, grass and similar materials, floor oilcloth and linoleum and wood carpet:

	FLOOR COVERINGS: 1914.					
	Total	Carpets and rugs, other than rag.	Rag carpets.	Mats and matting.	Oilcloth and linoleum, floor.	Wood carpet.
Number of establishments.....	596	97	463	12	18	6
Persons engaged.....	41,968	33,101	2,900	977	4,798	192
Proprietors and firm members.....	601	72	512	10	3	4
Salaried employees.....	2,465	1,720	258	98	307	22
Wage earners (average number).....	38,902	31,309	2,130	869	4,428	166
Primary horsepower.....	67,241	43,963	2,722	1,643	18,782	131
Capital.....	\$112,302,613	\$85,153,828	\$1,654,447	\$5,055,114	\$20,292,210	\$147,014
Salaries and wages.....	22,777,922	17,589,293	1,238,357	552,070	3,204,608	193,594
Salaries.....	3,842,230	2,873,678	243,749	96,823	600,240	27,740
Wages.....	18,935,692	14,715,615	994,608	455,247	2,604,368	165,854
Paid for contract work.....	377,645	341,286	11,983	21,230	3,146	
Rent and taxes.....	738,279	508,149	94,988	43,465	79,801	11,876
Cost of materials.....	55,732,369	42,280,223	721,728	1,170,214	11,251,876	308,328
Value of products.....	92,310,074	69,128,185	2,786,439	2,235,867	17,602,336	557,247
Value added by manufacture (value of products less cost of materials).....	36,577,705	26,847,962	2,064,711	1,065,653	6,350,460	248,919

¹In addition, jute carpets and rugs to the value of \$1,172,257 in 1914 were reported by manufacturers of jute goods. (See Table 60.)

Carpets and rugs, other than rag.—The manufacture of all kinds of woven carpets and rugs, except those made of jute, rags, and grass fiber, is included in this classification. The manufacture of jute carpets and rugs is conducted by establishments assigned to the jute industry, while that of grass carpets is included under the industry designation, "mats and matting, from cocoa fiber and grass." The progress of the carpet industry from 1849 to 1914, inclusive, is shown in Table 223.

Table 55 presents the statistics for materials, products, and equipment for the industry for the census years 1914, 1909, 1904, and 1899.

	CARPETS AND RUGS, OTHER THAN RAG.			
	1914	1909	1904	1899
MATERIALS.				
Total cost.....	\$42,280,223	\$39,563,004	\$37,947,954	\$27,228,719
Wool, in condition purchased:				
Pounds.....	52,552,449	64,135,020	51,320,521	51,871,334
Cost.....	\$10,493,743	\$11,752,396	\$10,431,146	\$8,104,107
Equivalent of above in scoured condition, pounds.....	39,218,831	51,474,353	31,551,895	37,560,231
Animal hair:				
Pounds.....	3,469,283	5,400,944	6,805,802	6,189,757
Cost.....	\$402,225	\$474,057	\$593,588	\$549,610
Cotton:				
Pounds.....	3,802,789	5,147,130	1,997,369	1,943,942
Cost.....	\$343,916	\$533,302	\$251,112	\$129,449
Partly manufactured materials not made in mill reporting:				
Waste and noils—				
Pounds.....	3,419,715	2,732,034	2,172,481	2,325,054
Cost.....	\$476,610	\$513,392	\$341,309	\$305,733
Yarns—				
Woolen—				
Pounds.....	21,626,360	25,718,747	32,431,400	32,996,316
Cost.....	\$5,821,848	\$5,036,118	\$6,648,001	\$5,030,654
Worsted—				
Pounds.....	9,267,278	11,292,749	11,355,993	9,218,267
Cost.....	\$4,592,906	\$5,588,915	\$5,405,072	\$3,544,860
Cotton—				
Pounds.....	24,619,137	26,166,241	27,421,831	19,823,561
Cost.....	\$4,637,673	\$4,772,594	\$4,757,850	\$2,744,928

Table 55—Continued.

	CARPETS AND RUGS, OTHER THAN RAG.			
	1914	1909	1904	1899
MATERIALS—continued.				
Partly manufactured materials not made in mill reporting—Continued.				
Yarns—Continued.				
Linen—				
Pounds.....	7,602,200	8,792,876	8,228,200	8,388,211
Cost.....	\$1,414,924	\$1,606,009	\$1,355,892	\$1,164,826
Jute, ramie, and other vegetable fiber—				
Pounds.....	59,148,266	55,592,343	49,119,558	38,846,413
Cost.....	\$6,040,186	\$3,926,694	\$3,464,516	\$2,476,029
Chemicals and dyestuffs, cost.....	\$1,378,509	\$1,729,492	\$1,467,476	\$1,151,726
All other materials, cost.....	\$6,677,683	\$3,630,035	\$3,291,992	\$2,026,797
PRODUCTS.				
Total value.....	\$69,128,185	¹ \$71,188,152	¹ \$61,586,433	\$48,192,351
Carpets and rugs:				
Square yards.....	66,340,274	\$1,218,881	\$2,670,843	76,410,050
Value.....	\$64,683,322	\$66,966,338	\$56,861,775	\$43,551,158
Axminster and moquette—				
Square yards.....	15,742,835	15,691,358	8,181,606	5,354,376
Value.....	\$18,578,693	\$17,372,706	\$3,476,140	\$5,164,531
Wilton—				
Square yards.....	5,616,263	5,343,616	2,395,058	² 3,926,910
Value.....	\$11,929,605	\$10,119,330	\$4,710,444	² \$4,576,809
Brussels—				
Square yards.....	2,698,840	4,436,457	3,024,162	2,686,493
Value.....	\$3,995,626	\$5,550,139	\$3,898,675	\$2,979,867
Tapestry velvet—				
Square yards.....	² 13,227,819	² 10,660,170	² 8,033,288	4,280,666
Value.....	² \$12,867,635	² \$9,027,193	² \$7,754,681	\$3,743,353
Tapestry Brussels—				
Square yards.....	13,614,354	17,078,476	16,108,908	8,756,199
Value.....	\$9,852,647	\$12,999,333	\$11,464,716	\$5,529,665
Ingrain carpet—				
Square yards.....	5,795,807	17,799,762	33,557,951	39,920,849
Value.....	\$2,241,294	\$6,749,672	\$13,287,302	\$14,368,930
Ingrain art squares—				
Square yards.....	3,177,563	6,131,862	7,135,546	2,722,323
Value.....	\$1,165,087	\$2,408,900	\$2,785,457	\$1,175,951
Smyrna rugs—				
Square yards.....	822,150	1,400,233	3,828,282	3,651,661
Value.....	\$870,891	\$1,660,322	\$4,134,500	\$3,680,618
Other rugs—				
Square yards.....	5,644,643	2,676,947	406,042	5,111,173
Value.....	\$3,181,844	\$1,078,633	\$349,860	\$2,391,434
All other products, value.....	\$4,444,863	\$4,221,814	\$4,724,658	\$4,041,193
EQUIPMENT.				
Woolen cards.....				
Spindles.....	465	456	389	468
Spinning mule.....	102,238	94,798	211,331	167,123
Spinning frame.....	110,090	116,674		
Doubling and twisting.....	34,434	40,624	44,016	42,083
Carpet and rug looms:				
Power.....	9,821	11,796	13,853	12,511
Hand.....	31	207		

¹ In addition, in 1909 carpets and rugs to the value of \$479,161, and in 1904 to the value of \$70,000, were made in establishments engaged primarily in the manufacture of products other than those covered by the industry designation.

² Includes Wilton velvets.

Eight establishments manufacturing jute carpet were classed in this industry in 1909, but are included in the "jute goods" industry in the 1914 census. The value of the products of these concerns was \$736,769 in the earlier and \$823,798 in the later year.

The following table shows the quantities and values of the carpets, seamed or sewed rugs, and rugs woven whole, so far as they were reported at the census of 1914.

Table 56

CARPETS AND RUGS, OTHER THAN RAG: 1914.

	CARPETS AND RUGS, OTHER THAN RAG: 1914.		
	Carpets.	Rugs, seamed.	Rugs, woven whole.
Total, square yards.....	17,311,347	20,854,526	23,174,401
Value.....	\$15,175,168	\$25,927,329	\$23,580,825
Axminster and moquette:			
Square yards.....	1,451,752	9,637,852	4,653,231
Value.....	\$1,848,523	\$10,659,397	\$6,070,773
Wilton:			
Square yards.....	1,900,948	3,574,464	140,851
Value.....	\$3,546,480	\$8,015,747	\$367,378
Body Brussels:			
Square yards.....	693,827	2,000,819	4,194
Value.....	\$1,030,398	\$2,956,198	\$9,030
Tapestry velvet:			
Square yards.....	4,856,066	2,913,657	5,458,096
Value.....	\$4,802,370	\$2,418,917	\$5,646,348
Tapestry Brussels:			
Square yards.....	2,612,947	2,727,734	8,273,673
Value.....	\$1,706,103	\$1,877,070	\$6,269,474
Ingrain:			
Square yards.....	5,795,807		3,177,563
Value.....	\$2,241,294		\$1,165,087
Smyrna:			
Square yards.....			822,150
Value.....			\$870,891
Wool and paper fiber:			
Square yards.....			4,168,954
Value.....			\$1,543,079
Chenille-Axminster:			
Square yards.....			178,058
Value.....			\$714,798
All other:			
Square yards.....			1,297,631
Value.....			\$923,967

Mats and matting, from cocoa fiber and grass.—This classification includes establishments engaged in making doormats and floor mattings, art squares, rugs, and carpets, the principal materials being grass, and coir yarn (coir being the fiber prepared from the outer husk of the coconut). The products are woven with cotton warp, or plaited, and differ from the rugs and carpets made in carpet factories and in establishments engaged primarily in the manufacture of cordage and twine and jute and linen goods, in that their chief material is not wool, or cotton, or jute. The separate statistics for the industry beginning with 1879 are given in Table 223.

At the census of 1869, 15 establishments, with products valued at \$257,981, were reported under "mats and rugs," and, at the census of 1859, 9, with products valued at \$107,036, under a like classification. It is probable that the rugs included were not of grass fiber and that the statistics are properly comparable with those under the present classification of "carpets and rugs, other than rag," but their value can not be segregated. In 1849, 3 establishments classified under "mats" reported products valued at \$5,500.

In addition to the products covered by the table, mats and matting to the value of \$250,000 were reported by establishments assigned to other classifications in 1914.

Carpets, rag.—This industry consists in separating and treating old carpets, rugs, and rags, for the manufacture of rag and "fluff" carpets and rugs. It is largely carried on by small establishments, but some establishments of considerable size were reported. In some cases the value of product represents the amount received for work done, while in others it includes the full value of the carpets and rugs made. Comparative statistics for the industry are given in Table 223.

In addition to the product shown in the table, rag carpets and rugs to the value of \$546,619 were reported in 1914 by establishments engaged in the manufacture of other products, principally carpets and rugs other than rag.

Oilcloth and linoleum.—Under this heading are included two industries, "oilcloth and linoleum, floor," and "oilcloth, enameled." It covers the manufacture of all kinds of floor oilcloth and linoleum, cork carpet, enameled oilcloth, table coverings, and carriage cloth, but not that of artificial leather, which is included under "upholstering materials." Cotton cloth, burlap, paints, linseed oil, ground cork, and wood pulp are the principal materials used. Table 57 shows the statistics of the production of oilcloth and linoleum for 1914, 1909, and 1904 for the two industries. At the

census of 1899 detail statistics for oilcloth and linoleum were not secured, but the total value of these products was \$11,402,620.

	OILCLOTH AND LINOLEUM.		
	1914	1909	1904
Total value.....	\$25,598,361	\$23,339,022	\$14,792,246
Oilcloth (made on cotton back):			
Enameled—			
Square yards.....	18,357,097	17,338,440	11,574,986
Value.....	\$2,495,255	\$2,265,140	\$1,542,467
Table, wall, shelf, and stair—			
Square yards.....	59,358,872	61,168,777	38,026,083
Value.....	\$6,025,348	\$5,639,206	\$3,540,181
Oilcloth and linoleum (made on jute back):			
Floor oilcloth—			
Square yards.....	7,536,379	18,354,851	21,456,615
Value.....	\$1,483,731	\$3,776,660	\$3,565,689
Linoleum, including cork carpet—			
Square yards.....	33,306,669	26,215,979	14,765,284
Value.....	\$10,043,436	\$7,850,437	\$4,223,992
Inlaid linoleum—			
Square yards.....	8,479,202	4,460,275	2,128,178
Value.....	\$4,725,837	\$2,994,491	\$1,104,808
All other products, value.....	\$824,754	\$813,082	\$815,109

The following statement gives the combined statistics for the two industries in this group from 1849 to 1914, inclusive.

CENSUS YEAR.	OILCLOTH AND LINOLEUM.							
	Number of establishments.	Wage earners (average number).	Primary horse-power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	31	5,651	22,272	\$28,041	\$3,213	\$17,776	\$25,598	\$7,822
1909.....	31	5,201	16,125	19,634	2,826	15,550	23,339	7,789
1904.....	27	3,883	10,112	13,803	1,944	10,050	14,792	4,742
1899.....	27	3,230	7,561	8,879	1,628	7,550	11,403	3,853
1889.....	28	1,862	2,669	4,477	929	3,364	5,481	2,117
1879.....	29	1,993	(¹)	3,745	850	3,983	5,815	1,832
1869.....	34	1,411	424	2,237	687	2,549	4,212	1,663
1859.....	49	1,538	(¹)	1,607	517	2,376	3,602	1,226
1849.....	56	650	(¹)	641	179	830	1,257	427

¹ Figures not available.

Oilcloth and linoleum, floor.—This classification includes the manufacture of oilcloth and linoleum for floor covering, made principally with a jute back, and is much the more important of the two industries. "Linotile," congolem, feltoleum, and a cotton-backed shade cloth were also reported by the establishments included in the classification. Table 223 gives the general statistics for the industry from 1869 to 1914, inclusive.

Oilcloth, enameled.—This classification covers the manufacture of oilcloth with a cotton back, and includes enameled oilcloth, which is made with a grained surface on a duck backing and is used as an upholstering material in the manufacture of carriages and automobiles, harness, etc. It comes in black or plain colors of all kinds, and is of various qualities and grains. This classification also includes table oilcloth for household use, a cloth of light weight, in many colors and designs, usually printed, and oilcloth for shelf and wall covering. A small amount of stair oilcloth was also reported. Enameled oilcloth was reported as a separate industry in 1879. In 1859 the classification was "oil and enameled cloth," but in 1869 apparently none was reported. Table 223 gives the general statistics for the industry from 1879 to 1914, inclusive.

The manufacture of cotton-backed oilcloth is confined almost exclusively to the establishments under this classification, only two establishments engaged primarily in the production of floor oilcloth and linoleum reporting enameled and table oilcloth in 1914. Shoe strings and an enameled rubber were the only subsidiary products reported by the manufacturers of enameled oilcloth.

WOOL SHODDY.

"Shoddy" is a generic term that is applied to recovered wool or cotton fiber, that is, the fiber obtained by passing rags, clippings, yarns, or waste through machines which reduce them to the condition of clean fiber ready for mixing with new material for spinning into yarn.

The industry in 1914 was restricted to establishments manufacturing wool shoddy as their chief or only product. Prior to this census, a few establishments engaged primarily in the manufacture of cotton or mattress shoddy were included in the industry, which was designated by the general title of "shoddy." The data for 8 establishments reporting cotton shoddy as the principal product, which were included in this industry in 1909, have now been deducted from the figures for that year; consequently the statistics given in Table 59 for 1909 as well as for 1914 relate to the production of wool shoddy only. Comparative figures for the manufacture of wool shoddy prior to 1909 are not available. The general statistics, shown in Table 223 (p. 714), are for 1914 only, as it was impracticable to make these figures for prior censuses comparable.

At previous censuses a few small mills engaged in the cutting of flocks were included in the shoddy industry; such establishments were not assigned to this industry in 1914. Mills engaged in the cleaning and garnetting of waste are included only in case the product is designed for further use in textile industries; if their product is intended merely for journal packing, for the manufacture of mattresses, etc., they are excluded from the "wool shoddy" industry.

Table 59	WOOL SHODDY.	
	1914	1909
MATERIALS.		
Total cost.....	\$5,299,903	\$4,539,979
Rags, clippings, etc.:		
Pounds.....	57,367,962	43,296,261
Cost.....	\$3,103,864	\$2,644,570
Wool and other noils and wool waste:		
Pounds.....	6,879,366	7,567,579
Cost.....	\$863,633	\$917,976
Wool in condition purchased:		
Pounds.....	203,868	237,097
Cost.....	\$81,514	\$98,032
Equivalent of above in scoured condition, pounds.....	203,868	196,097
Chemicals and dyestuffs, cost.....	\$103,849	\$138,241
All other materials, cost.....	\$1,147,043	\$741,160
PRODUCTS.		
Total value.....	1 \$7,706,843	1 \$6,854,993
Recovered wool fiber:		
Pounds.....	43,156,037	38,291,465
Value.....	\$5,977,284	\$5,679,283
Carbonized rags:		
Pounds.....	4,627,568	3,648,662
Value.....	\$636,332	\$593,331
Mattress shoddy:		
Pounds.....	509,500	(²)
Value.....	\$27,065	(²)
All other products, value.....	\$659,462	\$355,137
Work on materials for others.....	\$406,700	\$227,242
EQUIPMENT.		
Pickers, number.....	315	332
Garnett machines, number.....	178	141

¹ In addition, wool shoddy to the value of \$151,982 in 1914 and \$367,278 in 1909 was made for sale by establishments engaged primarily in the manufacture of products other than those covered by the industry designation.

² Not reported.

The statistics in Table 59 cover the operations of establishments manufacturing shoddy as a final product. They do not include its manufacture in woolen mills which use it as material in further manufacturing processes, almost half of the total shoddy being manufactured and consumed in such establishments. In 1914, establishments engaged in wool manufactures produced for their own consumption 40,787,349 pounds of wool shoddy, and produced for sale 893,373 pounds, which, added to the production of the wool shoddy mills, amounted to a total of 84,836,759 pounds. The corresponding total for 1909 was 74,416,406 pounds.

The materials used by the establishments included in the classification consist almost entirely of woolen, worsted, and cotton-mixed rags, clippings, old carpets, noils, and wool waste. A small amount of raw wool and cotton were also reported.

The principal products are recovered wool fiber, carbonized rags, and mattress shoddies, while a small amount of noils and other wastes were reported. The carbonized rags, formerly reported as "wool extract" are obtained by carbonizing fabrics with chemicals which destroys the vegetable fiber and leaves the wool practically uninjured. When these "carbonized rags" are put through a picker, garnett, or other machine, which separates the fiber and brings it into the condition of clean wool ready for carding or combing, the product is known as recovered wool fiber, also called "shoddy." All recovered wool fiber, however, is not the result of carbonizing, as wool fabrics, wastes, yarns, etc., are sent direct to the picker. Mixed goods are also sent to the picker, without carbonizing, and this product is "shoddy," though of a low grade, and is used largely in making mattresses.

WOOL PULLING.

Strictly speaking, this industry does not properly belong under "textiles," although it has to do with one of the fibers. In prior censuses, however, it has been placed under this group and the statistics are here given in order to preserve the comparability of the figures. The classification covers establishments pulling wool on contract from pelts owned by others, as well as those which buy pelts, pull the wool, and sell it and the skins in the open market. The principal statistics for the census years from 1899 to 1914, inclusive, are given in Table 223 (p. 713).

The figures for materials and products are not comparable, as at censuses prior to 1909 the schedules uniformly showed under value of products only the amount received for contract work done, while some of the establishments included in the censuses of 1914 and 1909 reported also the value of purchased skins and wool under value of products. Large quantities of wool are pulled in tanning and in slaughtering and meat-packing establishments; the amount reported in 1914 by such establishments was valued at \$10,434,953 and in 1909 at \$8,327,095.

WOOL SCOURING.

Wool scouring was formerly carried on to a large extent in establishments which treated the wool furnished by others on a contract basis. With the advent of larger establishments, particularly in the worsted industry, there has been a change in this respect, the larger part of the wool scouring being done in establishments which also manufacture yarn or cloth. There are still, however, a number of establishments engaged chiefly in the scouring, sorting, and carbonizing of wool and a few in the preparation of tops. The statistics for such establishments were not segregated prior to 1899, but data for that year and for subsequent census periods are given in Table 223.

The value of products in some instances represents the amount received for work on materials furnished. In others, however, the wool scoured is owned by the establishment where treated and its cost is included in the value of products. This was especially true of several establishments in 1914 and 1909, the returns differing greatly from those for previous censuses in cost of materials and value of products.

CORDAGE AND TWINE AND JUTE AND LINEN GOODS.

While separate statistics are given for the three industries—cordage and twine, jute goods, and linen goods—the products are of a more or less allied character, and the following table presents the combined statistics for the materials and products of the three industries so far as they can be given in detail for 1914, 1909, and 1899, but does not include the figures for these classes of goods produced in penal institutions or in establishments engaged primarily in the manufacture of products other than those covered by these industry designations.

The principal materials used in these industries were classed as hard and as soft fibers. The former comprised manila hemp, New Zealand hemp, henequen (sisal from Mexico and Cuba), sisal (from Africa, the Bahamas, Hawaii, and Java), and all other hard fibers, taken as a group. At the 1914 census of manufactures the scope of the inquiry was considerably enlarged, and as a result in many instances there are no

items in the 1909 report which are comparable with those representing the classifications of 1914. Furthermore, it would be impossible to show separately the figures for some of the classifications used in the later year without to some extent disclosing the operations of individual establishments.

The principal products manufactured in this country from flax, hemp, and jute fibers are twine, rope, and thread, and yarns for sale to establishments using chiefly cotton, wool, and silk fibers.

Table 60	CORDAGE AND TWINE AND JUTE AND LINEN GOODS.		
	1914	1909	1899
MATERIALS.			
Total cost.....	\$60,474,417	\$39,536,892	\$32,197,885
Hard fibers:			
Pounds.....	437,330,684	352,683,572	275,939,044
Cost.....	\$28,576,735	\$20,022,108	\$18,096,152
Soft fibers:			
Pounds.....	338,345,841	307,035,404	248,819,187
Cost.....	\$18,273,553	\$10,838,175	\$7,712,597
Jute—			
Pounds.....	128,312,082	121,992,427	87,443,201
Cost.....	\$8,737,870	\$4,134,265	\$2,431,429
Jute butts—			
Pounds.....	114,389,155	138,864,122	118,806,625
Cost.....	\$3,535,552	\$2,033,176	\$1,795,653
Flax and flax tow—			
Pounds.....	24,717,598	26,954,785	16,980,646
Cost.....	\$3,205,975	\$3,174,609	\$2,080,862
Hemp and hemp tow—			
Pounds.....	22,752,353	19,724,070	25,588,715
Cost.....	\$1,861,817	\$1,496,125	\$1,404,653
Other soft fibers—			
Pounds.....	48,174,653	(1)	(1)
Cost.....	\$982,339	(1)	(1)
Cotton:			
Pounds.....	32,336,685	27,624,490	13,022,755
Cost.....	\$3,453,348	\$2,922,933	\$849,426
Yarns purchased:			
Cotton—			
Pounds.....	8,868,054	7,077,959	4,973,080
Cost.....	\$1,468,159	\$1,291,599	\$709,889
Flax, hemp, jute, and ramie—			
Pounds.....	6,269,660	2,676,367	1,890,792
Cost.....	\$765,444	\$445,378	\$304,161
All other materials, cost.....	\$7,947,178	\$4,016,699	\$4,525,660
PRODUCTS.			
Total value.....	\$83,235,068	\$59,121,989	\$47,601,607
Rope and binder twine, exclusive of cotton rope:			
Pounds.....	487,443,356	411,443,281	305,834,657
Value.....	\$43,085,517	\$30,918,693	\$26,061,777
Cotton rope:			
Pounds.....	13,244,198	16,760,763	1,615,824
Value.....	\$2,539,906	\$3,011,613	\$247,250
Twine, other than binder:			
Pounds.....	105,249,677	75,816,653	36,205,903
Value.....	\$13,996,522	\$8,934,352	\$4,341,441
Cotton—			
Pounds.....	17,927,286	20,412,631	8,691,707
Value.....	\$3,472,056	\$3,518,036	\$1,133,640
Jute—			
Pounds.....	55,282,159	35,516,217	1,679,127
Value.....	\$5,268,357	\$2,557,744	\$117,539
Hemp—			
Pounds.....	9,318,771	8,013,349	9,065,024
Value.....	\$1,583,354	\$1,091,291	\$1,019,590
Flax—			
Pounds.....	3,953,622	2,967,053	3,845,978
Value.....	\$1,051,684	\$830,969	\$969,469
Other, including mixed—			
Pounds.....	18,767,839	8,907,403	12,924,067
Value.....	\$2,621,071	\$936,312	\$1,101,203
Yarns for sale:			
Pounds.....	75,875,322	68,731,258	63,478,080
Value.....	\$8,320,186	\$5,434,037	\$4,455,734
Jute—			
Pounds.....	69,827,005	62,512,247	54,271,860
Value.....	\$7,357,888	\$4,361,550	\$3,230,835

See footnotes on p. 86.

Table 60—Continued.	CORDAGE AND TWINE AND JUTE AND LINEN GOODS.		
	1914	1909	1899
PRODUCTS—continued.			
Yarns for sale—Continued.			
Other—			
Pounds.....	6,048,317	6,219,011	9,206,220
Value.....	\$962,298	\$1,072,487 ¹	\$1,224,899
Linen thread:			
Pounds.....	5,707,668	6,530,503	4,021,044
Value.....	\$3,409,136	\$3,407,008	\$2,332,287
Linen fabrics:			
Square yards.....	10,799,623	10,460,993	6,867,862
Value.....	\$1,765,798	\$1,574,653	\$796,001
Bags and bagging:			
Square yards.....	131,827,658	69,311,288	74,090,760
Value.....	\$6,440,594	\$3,507,482	\$3,462,479
Jute carpets and rugs:			
Square yards.....	4,862,302	2,206,114	2,953,658
Value.....	\$1,172,257	\$549,221	\$357,568
All other products, value.....	\$2,505,152	\$1,784,930	\$4,947,070

¹ Not reported separately.

² In addition, cordage and twine and jute and linen goods to the value of \$5,430,558 in 1914 and of \$4,472,546 in 1909 were reported by establishments engaged primarily in other industries. Of these amounts \$3,983,848 in 1914 and \$3,581,917 in 1909 represent the value of the twine and cordage and rope made by cotton mills engaged chiefly in the manufacture of yarn. (See Table 36.)

Cordage and twine.—In this industry are included those establishments whose principal business is the manufacture of twine, binder twine, cordage, rope, and cables, from vegetable or other fibers. Cotton is used to some extent, but the harder vegetable fibers are more generally used. The comparative statistics for this industry from 1859 to 1914, inclusive, are given in Table 223 (p. 606).

At the census of 1849 under "twine" five establishments were reported with 38 wage earners, to whom \$9,228 were paid in wages. The cost of materials was \$14,331, and the value of products was \$27,275.

Cotton mills engaged principally in the manufacture of yarn produced 13,284,875 pounds of twine in 1914 valued at \$2,792,125, and 5,515,653 pounds of cordage and rope, valued at \$391,223, as shown in Table 36.

Twine is also manufactured in mills classified as "jute goods," and this is included in Table 60.

Jute goods.—The principal products manufactured in establishments included under this designation are gunny bagging, burlap, jute carpets and rugs, twine, and yarns, the value of yarns alone in 1914 amounting to \$7,553,253. Jute yarns, which are used extensively in the carpet and rug industry, are manufactured almost exclusively in jute mills. Several penal institutions also operate jute mills, but the statistics for these are not included. General statistics for the industry from 1879 to 1914, inclusive, are given in Table 223.

The increase in the jute-goods industry in 1899 as compared with 1889 was apparently due to a certain extent to changes in classification. In 1889 jute bagging appears to have been reported by establishments classified as "jute goods" and also as "bagging, flax, hemp, and jute" (included in Table 223 as "bags, other than paper"), while in 1899 a number of the establishments included in the latter classification in 1889 were classified as "jute goods."

Linen goods.—The principal products embraced under this industry are thread, towels and toweling, twines, and yarns—thread alone representing 49 per cent of the total value of products in 1914. The statistics from 1859 to 1914 are given in Table 223.

FLAX AND HEMP, DRESSED.

The establishments included in this classification are such as buy the rough hemp and flax, ret it, and dress the fiber by mechanical processes into line and tow. It does not include these operations when carried on, as is often the case, in establishments which use the fibers in further manufacture. In 1859 the industry was shown under two headings as "flax dressing" and "hemp dressing." From 1869 to 1899 it was called "flax, dressed," but presumably covered hemp also; while in 1904, 1909 and 1914 it was designated as "flax and hemp, dressed." The statistics from 1859 to 1914 are presented in Table 223.

At the census of 1849, under "flax breakers," four establishments were reported, with 63 wage earners receiving \$15,084 in wages. The cost of materials was \$25,500,

and the value of products \$50,000. At the same census four establishments were reported under "flax dressers and spinners," with 262 wage earners, \$61,728 paid in wages, and \$186,000 expended for materials. The value of products was \$301,808.

While formerly large quantities of flax grown in the United States were used in the manufacture of twine and cloth, the production of flax for textile purposes in this country has greatly decreased, almost all of the flax crop being now raised for the seed, from which linseed oil is made. The production of hemp in this country has also decreased.

HAIRCLOTH.

Haircloth was formerly used most extensively in upholstering, and its manufacture was included under "upholstering materials." Large quantities of it are now used in the manufacture of clothing, and for this reason it was given a separate classification in 1909. This textile is made by using a warp of cotton yarn and a weft of horsehair. Hair bristles, brush material, and curled hair were also reported, but the value of these has been included in the amounts reported as subsidiary products to the upholstering materials industry.

DYEING AND FINISHING TEXTILES, EXCLUSIVE OF THAT DONE IN TEXTILE MILLS.

The statistics for this classification cover establishments engaged in the bleaching, dyeing, and mercerizing of fibers and yarns, principally of cotton, silk, and wool; the bleaching, dyeing, mercerizing, and printing of cotton goods; the dyeing, printing, embossing, watering and finishing of silk goods; and the dyeing and finishing of woolen and worsted goods. The classification also covers the work of establishments engaged in beaming, winding, and tubing yarns, and spooling and tubing thread. They do not cover operations of this character when carried on in establishments manufacturing the fabric, and, as a considerable proportion of the dyeing and finishing is done in such establishments, the statistics do not fully represent the amount of this kind of work done. Some establishments purchase the fabric and include its value in the value of products. The value of products reported for the majority of the establishments is the amount received for work done on materials furnished by others, and does not represent the value of the goods turned out. The materials for which the cost is shown consist chiefly of dyestuffs, chemicals, and similar substances used in the processes. The statistics for the industry as reported at each census from 1849 to 1914, inclusive, are summarized in Table 223.

CLOTH, SPONGING AND REFINISHING.

The sponging and refinishing of woolen cloth is frequently done on commission by the establishments not owning the cloth on which they work, and such establishments are the ones covered by the present classification. Many establishments engaged in the manufacture of clothing do their own sponging and refinishing, but the operations of such establishments are of course not included in the statistics for this classification. The value of products shown in Table 223 represents the amount received for work done.

CLOTHING.

Table 29 gives a total for 14,953 establishments engaged in the manufacture of articles from textile fabrics for personal wear. The value of the products of these establishments was \$1,297,273,396. In addition to the products of the establishments in this group of industries, other articles of wearing apparel are reported in connection with other industries. The following statement gives the total value of products of this class so far as they can be identified from the reports for the census of 1914.

Table 61	Value of products.		Value of products.
Total	\$897,770,592	Hosiery and knit goods:	
Boots and shoes:		Hosiery	\$98,098,590
Leather	501,760,458	Shirts and drawers	57,523,051
Rubber	53,822,123	Combination suits	35,596,034
Fur goods	43,632,693	Bathing suits	2,033,889
Gloves and mittens, leather	21,614,109	Leggings	313,952
Hats and caps:		Gloves and mittens	10,519,613
Fur-felt	34,079,980	Hoods and scarfs	3,456,326
Wool-felt	2,082,406	Cardigan jackets and sweaters	26,195,002
		Shawls	713,545
		All other fancy knit ¹	3,196,979

¹ Includes neckwear, skirts, wristers, etc.

In accepting statistics for the branches of men's and women's clothing given in Table 29 it must be understood that the segregation of the classes is made on the basis of the product of chief value and that there is a great deal of overlapping in the totals.

An important feature of this industry is that many establishments manufacture clothing on a contract basis from materials furnished by others. Many of these establishments are small and often much of the work is done by the contractor and his family. Other establishments working under contract, however, are of considerable size, employing large numbers of wage earners. In order to bring out the extent to which this practice obtains, a segregation has been made in Table 62, for 1914 and 1909, of those establishments which manufactured clothing from their own materials and those which worked exclusively on materials furnished by others—in many cases by establishments of the class first mentioned.

Table 62	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Clothing, men's:							
1914.....	4,830	173,747	\$224,050	\$86,328	\$230,032	\$458,211	\$228,179
1909.....	5,584	191,183	230,703	89,645	252,523	485,677	233,154
Regular factories—							
1914.....	2,331	123,939	218,024	63,495	228,117	425,087	196,970
1909.....	2,367	126,196	223,343	56,361	249,691	439,860	190,169
Contract shops—							
1914.....	2,499	49,808	6,025	23,333	1,915	33,124	31,209
1909.....	3,217	64,987	7,360	33,284	2,832	46,817	42,985
Clothing, women's:							
1914.....	5,564	168,907	153,549	92,574	252,345	473,888	221,543
1909.....	4,558	153,743	129,301	78,568	208,788	384,752	175,964
Regular factories—							
1914.....	4,470	151,950	150,929	85,869	251,330	462,005	210,675
1909.....	3,709	139,721	127,636	71,578	207,891	374,333	166,442
Contract shops—							
1914.....	1,094	16,957	2,620	6,705	1,015	11,883	10,868
1909.....	849	14,022	1,665	6,990	897	10,419	9,522

The decrease in manufacture of men's clothing and the increase in that of women's clothing are due, in part, to the fact that some establishments in 1909 engaged in the manufacture of women's and of children's clothing did not give a proper description of their products, and their reports were classified as "clothing, men's." It is due, also, to the large increase in the manufacture of children's clothing, which in 1914 was included with "clothing, women's," and to the large increase in the manufacture of women's ready-made clothing.

Clothing, men's.—Under this designation are included establishments engaged chiefly in the manufacture of men's and youths' and of boys' clothing, such as overcoats, suits, coats, trousers, raincoats, and smoking and other jackets and "all other" outer garments, such as overalls, market frocks, butchers' aprons, uniforms, bathing suits, knee pants, gymnasium and sporting clothes, etc. Establishments making parts of clothing, such as shoulder pads, pockets, coat fronts, and padding, are also included. There is therefore some duplication in the value of products for the industry as a whole. The census returns for this industry, like those for other clothing industries, relate only to establishments manufacturing for the wholesale trade. Custom-tailor shops, whether large or small, were not included. General statistics for the industry from 1849 to 1914 are given in Table 223.

In 1914, in addition to the data for regular factories and contract shops, the establishments were classified within each group as "men's and youths'" "boys'" and "all other" according to the product of chief value, and statistics for these subdivisions are given in Table 29.

Men's and youths' clothing to the value of \$2,473,019 was reported by makers of boys' clothing, and boys' clothing to the value of \$4,940,689 and other clothing to the value of \$38,084 were reported by manufacturers of men's and youths' clothing. Men's and youths' clothing to the value of \$4,709,176, boys' clothing to the value of \$205,304, and other clothing to the value of \$66,361 were reported by establishments assigned to other industries.

Clothing, men's, buttonholes.—Closely allied to the industry classified as "clothing, men's," is "clothing, men's, buttonholes," covering establishments which make

buttonholes in men's clothing owned by others. The value of products represents the amount received for work done. Inasmuch as buttonholes are usually made in establishments which manufacture the clothing, only a comparatively small portion of the total value of such work is shown under this heading. The statistics were first shown separately at the census of 1889, and comparative figures for the census years from 1889 to 1914, inclusive, are given in Table 223.

Shirts.—This classification includes the manufacture of all kinds of shirts for men and boys, except those made in knitting mills, and also the manufacture of linen underwear. The making of shirt bosoms and other parts is included, together with stitching done under contract on materials owned by others. The classification does not fully cover the manufacture of this class of goods, as shirts to the value of \$4,976,189 in 1914 and of \$6,801,460 in 1909 were reported by establishments whose chief product was men's clothing; and shirts to the value of \$3,977,340 in 1914 and of \$4,940,464 in 1909 were reported by establishments assigned to other industries, principally "collars and cuffs, men's" and "furnishing goods, men's." Table 223 shows the statistics for the manufacture of shirts from 1879 to 1914, inclusive.

Furnishing goods, men's.—Under this heading are included the manufacture of men's neckwear, belts, handkerchiefs, cloth gloves and mittens, cloth underwear, bath robes, pajamas, athletic underwear, etc. Prior to 1904 statistics for collars and cuffs were included in furnishing goods. The manufacture of suspenders, garters, and similar articles were also to a considerable extent included prior to 1909, when they were shown as a subclassification for this industry, and in 1914 as a separate industry. Therefore, Table 223 gives comparative data for 1909 and 1914 only, but the following table gives the data for the combined industries—"collars and cuffs, men's," "furnishing goods, men's," and "suspenders, garters, and elastic woven goods"—for the census years from 1879 to 1914, inclusive.

Table 63

FURNISHING GOODS, MEN'S.¹

CENSUS YEAR.	Number of establishments.	Wage earners (average number).	Primary horse-power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	802	42,205	17,300	\$59,257	\$17,186	\$53,350	\$95,417	\$42,067
1909.....	900	38,482	12,116	49,009	15,093	49,125	87,710	38,585
1904 ²	547	27,185	5,421	28,044	8,760	28,565	49,032	22,467
1899.....	457	30,322	3,552	20,576	9,730	23,070	44,346	20,676
1889.....	586	20,778	1,082	12,299	6,078	15,281	29,871	14,590
1879.....	161	11,174	(³)	3,725	2,644	6,503	11,507	5,004

¹ Including industries classified in Table 29 as "collars and cuffs, men's," and "suspenders, garters, and elastic woven goods."

² Adding the statistics of establishments manufacturing elastic goods, webbing, garters, and suspenders, classified under "rubber and elastic goods," the following totals for 1904 are obtained: Number of establishments, 599; wage earners (average number), 32,299; wages, \$10,692,781; cost of materials, \$31,435,430; value of products, \$57,613,735; value added by manufacture, \$26,183,305.

³ Figures not available.

In addition to the product given in 1914 in Table 223, men's furnishing goods to the value of \$6,204,405 were made by establishments engaged primarily in the manufacture of other products, principally by those classed "shirts," "millinery and lace goods," "clothing, men's," and "suspenders, garters, and elastic woven goods."

Collars and cuffs, men's.—This classification was first shown as a separate industry in 1904. In 1899, while there was no separate classification, the returns being included with "shirts" and "furnishing goods, men's" the schedules were withdrawn from these classifications, in order to show these data in a special report. Table 223, therefore, contains comparative statistics for 1899, 1904, 1909, and 1914. These statistics should not be accepted as representing the entire production, however, as collars and cuffs to the value of \$1,892,284 were reported in 1914 by 18 establishments manufacturing principally shirts, although one establishment manufacturing men's clothing and another manufacturing men's furnishing goods are included in this number.

Suspenders, garters, and elastic woven goods.—This industry includes those establishments engaged in the manufacture of suspenders, garters, and the elastic webbing from which these articles are made. For censuses prior to 1909 establishments making elastic woven goods were included in part under men's furnishings, in part

under millinery and lace goods, and in part under rubber and elastic goods (now "rubber goods, not elsewhere specified"). Table 223 presents statistics for the censuses of 1909 and 1914.

In addition to the products covered by the table, suspenders, garters, and elastic woven goods to the value of \$694,035 were reported in 1914 by establishments assigned to other classifications, principally men's furnishing goods, stamped ware, and men's and women's clothing.

Hats and caps, other than felt, straw, and wool.—This classification first appeared in 1904 and represents part of a classification which in 1899 included straw hats and in previous years fur-felt hats also. The industry includes the manufacture of all kinds of hats and caps from cloth, of leather hats and caps, and of men's silk and opera hats. Some fur hats are reported, but such hats are made chiefly by establishments in the fur-goods industry. The statistics for 1914, 1909, 1904, and 1899 are given in Table 223.

In addition to the products covered by the table, establishments assigned to other industries, principally fur goods, straw hats, fur-felt hats, hosiery and knit goods, and men's clothing, reported "hats and caps, other than felt, straw, and wool," to the value of \$1,173,240 in 1914 and to the value of \$804,008 in 1909.

Clothing, women's.—The manufacture for the wholesale trade of a great variety of clothing for women, girls, and children is covered by this classification, which includes the manufacture not only of complete suits, but also of dresses, skirts, petticoats, kimonos, dressing sacques, wrappers, jackets, cloaks, capes, underwear, infants' and children's clothing, shirt waists, linings, corset stays, bathing suits, belts, dress shields, and similar articles.

In order to show the extent to which clothing is manufactured in establishments engaged exclusively in contract work, Table 62 shows for 1914 and 1909 those establishments which manufacture clothing from their own materials and those which work exclusively on materials furnished by others. In 1914 a further segregation of these two groups has been made, showing those factories that make, as their product of chief value, "suits, skirts, and cloaks;" "shirt waists and dresses, except house dresses;" "undergarments and petticoats;" "wrappers and house dresses, kimonos, negligees, dressing sacques;" and "all other," which includes infant's and children's wearing apparel, aprons, bathing caps and suits, gymnasium suits, dress shields, etc. Many establishments reported products covered by two or more of these classes, but the reports were classified according to the product of chief value. The fact that there is considerable overlapping in value should be considered in accepting the figures for the separate classes.

The general statistics for the industry as a whole for the censuses of 1859 to 1914, inclusive, are given in Table 223. The increases shown have been phenomenally large at each succeeding census, largely due to a gradual transfer of such work from the homes and the custom dressmaking establishments to the factories.

Suits, skirts, and cloaks to the value of \$1,686,382 were reported by the other subgroups, and to the value of \$1,645,447 by establishments assigned to other industries, principally men's clothing.

Waists and dresses, except house dresses, to the value of \$1,871,668 were reported by other subgroups of this industry, and to the value of \$925,373 by establishments assigned to other classifications, principally men's clothing.

Undergarments and petticoats to the value of \$1,659,733 were reported by other subgroups of the industry, and to the value of \$1,737,725 by establishments assigned to other classifications, principally men's clothing, hosiery and knit goods, men's furnishing goods, and soap. Knit underwear is covered by the hosiery and knit goods industry. (See Table 41.)

Wrappers and house dresses to the value of \$604,045 were reported by the subgroups, and to the value of \$173,099 by establishments assigned to other classifications, principally men's clothing and cotton goods.

All other clothing to the value of \$1,381,109 was reported by other groups of this industry, and to the value of \$2,785,764 by establishments manufacturing as their product of chief value, men's clothing, shirts, leather goods, etc.

Corsets.—The establishments included under this classification manufacture corsets, corset waists, brassieres, stays, and similar articles. Table 223 gives the statistics for the industry from 1879 to 1914, inclusive.

In 1914, in addition to the product covered by the table, five establishments engaged principally in making women's clothing reported corsets to the value of \$114,959, as compared with two establishments in 1909, for which the value can not be given without disclosing the operations of individual establishments.

Millinery and lace goods.—Establishments covered by this classification make a wide variety of articles for wholesale trade, including (1) embroideries; (2) hat and bonnet frames and made hats, trimmed and untrimmed, for women and girls; (3)

dress, cloak, and millinery trimmings, braids, and fringes; (4) ladies' collars and neckwear; and (5) lace work, plaitings, ruchings, and veilings; crocheted goods; hand-made curtains of muslin and lace; ladies' and children's belts, other than leather; and handkerchiefs. Custom millinery shops were not included. The machine production of cotton laces and lace curtains is shown as a separate classification in 1914, and prior to that was included with the cotton goods industry rather than with the millinery and lace goods industry. The production of untrimmings hats for women is in part covered by other classifications—"hats, wool-felt," "hats, fur-felt," and "hats, straw."

Table 29 presents statistics for the five groups, the establishments being assigned according to the product of chief value. Table 223 gives comparative statistics for the census years from 1869 to 1914, inclusive.

Millinery and lace goods to the value of \$6,942,639 were reported in 1914 and to the value of \$4,991,448 in 1909 by establishments assigned to other industries.

AWNINGS, TENTS, AND SAILS.

The statistics for factories making all kinds of awnings, canopies, tents, sails, truck covers, and waterproof and furniture coverings are included under this classification.

Establishments engaged primarily in the manufacture of other products, principally sporting and athletic goods; bags, other than paper; flags and banners; window shades and fixtures; horse clothing; saddlery and harness, etc., reported as a subsidiary product awnings, tents, and sails to the value of \$1,015,640 in 1914 and to the value of \$641,959 in 1909. Table 223 contains statistics for the industry for each census from 1859 to 1914, inclusive.

BAGS, OTHER THAN PAPER.

All kinds of bags made from textile fabrics are included under this classification, except those manufactured in establishments which produce the cloth as well as make the bags, or in establishments which use the bags as containers for products—such as flour, cement, or tobacco—which they manufacture as their principal business. Leather and paper bags are not included, unless manufactured as a subsidiary product by establishments making cloth bags.

In 1914 bags and bagging to the value of \$9,705,616 were reported by cotton mills, and to the value of \$6,440,594 by manufacturers of jute goods, while other industries, principally those classed as "awnings, tents, and sails," reported bags as a subsidiary product to the value of \$80,523. In 1909 bags to the value of \$1,230,359 were reported by other establishments.

At the census of 1859, under "bags," 19 establishments were reported, having wage earners numbering 112, with wages amounting to \$43,968, materials costing \$607,785, and a value of products amounting to \$749,578. While there were also establishments reported under "paper bags," thus showing that the above-named classification was for "bags, other than paper," the figures do not appear to be comparable, and are omitted from Table 223, which presents statistics for the census years from 1869 to 1914, inclusive.

BELTING AND HOSE.

The total production of belting and hose for 1914 is shown in the following statement, which gives separate statistics for the three industries of the group:

Table 64	BELTING AND HOSE: 1914.			
	Total.	Belting and hose, woven.	Belting and hose, rubber.	Belting, leather.
Number of establishments.....	200	31	18	151
Persons engaged.....	11,657	1,189	6,205	4,263
Proprietors and firm members.....	103	17	-----	86
Salaried employees.....	2,536	220	1,090	1,226
Wage earners (average number).....	9,018	952	5,115	2,951
Primary horsepower.....	33,162	2,756	22,995	7,411
Capital.....	\$47,423,614	\$4,848,170	\$22,436,922	\$20,138,522
Salaries and wages.....	9,223,207	798,404	4,595,615	3,829,188
Salaries.....	3,791,906	338,841	1,693,422	1,759,643
Wages.....	5,431,301	459,563	2,902,193	2,069,545
Paid for contract work.....	61,508	2,586	1,200	57,722
Rent and taxes.....	567,993	63,802	164,958	339,233
Cost of materials.....	31,315,915	2,868,801	12,967,004	15,480,110
Value of products.....	51,037,615	4,440,775	23,560,889	23,035,951
Value added by manufacture (value of products less cost of materials).....	19,721,700	1,571,974	10,593,885	7,555,841

Belting and hose, woven.—Establishments in this industry manufacture principally cotton and stitched canvas belting, woven camel's-hair belting, solid woven waterproofed belting, endless belts of seine twine, pulley covering of glue and canvas, and cotton and linen fire hose. The classification was "belting and hose, linen," until the census of 1909. Comparative statistics for the industry are given in Table 223.

The woven hose has almost entirely replaced the leather hose, and this accounts for the large increase from 1899 to 1904. Some establishments assigned to the textile industries weave the fabric and stitch the belting or hose. This product was also reported by some establishments engaged primarily in the manufacture of rubber and leather belting and hose and by one in connection with the manufacture of awnings, tents, and sails. The total value of the belting and hose product manufactured by establishments assigned to other industries in 1914 amounted to \$1,289,305.

As a rule, the establishments that make a specialty of belting do not manufacture hose. Table 29 gives separate statistics for the two branches of the industry for 1914. As far as can be identified, the only overlapping in this separation was due to the manufacture of woven hose to the value of approximately \$17,000 in the establishments assigned to the manufacture of belting.

CLOTHING, HORSE.

Factories manufacturing fly nets, horse blankets, pads, boots, and halters, automobile and carriage robes, etc., are included in this classification. These establishments, however, do not weave the textiles—cotton, jute, linen, and woolen—nor make the felt used for blankets and robes. The statistics for this industry from 1879 to 1914, inclusive, are shown in Table 223.

In 1914, the woolen and worsted mills wove 11,473,349 square yards of horse blankets, valued at \$3,075,393, and 1,680,399 square yards of carriage robes, valued at \$1,249,534, and horse clothing to the value of \$660,207 was made by establishments engaged primarily in the manufacture of bags, other than paper; awnings, tents, and sails; saddlery and harness; and other products. In 1909 wool manufacturers reported 4,457,493 square yards of horse blankets valued at \$1,862,372, and 2,889,444 square yards of carriage robes, valued at \$1,396,595; and horse clothing to the value of \$580,794 was made by establishments assigned to other industries.

FLAGS AND BANNERS.

The statistics for this classification cover the establishments engaged in the manufacture of flags, banners, pennants, bunting, etc., whether of silk, cotton, felt, leather, or other material. In 1909 this classification and that of "regalia and society badges and emblems" were shown as one industry, as the products are closely allied. The statistics shown in Table 223 cover the manufacture of flags and banners from 1879 to 1914, inclusive. There were no statistics shown for 1869, but at the census of 1859 there were nine establishments, with 77 wage earners, to whom \$26,088 were paid in wages. The materials cost \$34,330, and the value of products was \$90,600.

In 1914, flags and banners to the value of \$134,984 were reported by establishments engaged in the manufacture of awnings, tents, and sails. Stationery goods, silk goods, printing and publishing, and other industries also reported the production of these commodities to the value of \$273,253.

REGALIA AND SOCIETY BADGES AND EMBLEMS.

This classification includes the establishments whose products of chief value were regalia and society badges and emblems, such as silk and metal badges, celluloid and metal buttons, ribbon badges, emblems, army and navy goods, campaign buttons and badges, medals, pins, etc.

There is some overlapping between this industry and various others. In 1914, establishments engaged primarily in the manufacture of advertising signs and novelties, in printing and publishing, in the manufacture of clothing, of cutlery and edge tools, of jewelry, and of other goods, reported regalia and society badges and emblems to the value of \$417,909.

HAMMOCKS.

This classification embraces the manufacture of hammocks of all descriptions, and of porch and lawn swings, couch hammocks, etc., whether made from textile fabrics produced in other industries or woven or knitted directly from the yarn. The census of 1879 was the first for which statistics were presented separately.

Hammocks to the value of \$417,796 were also made in 1914 by establishments engaged primarily in the manufacture of horse clothing; mattresses and spring beds; awnings, tents, and sails; and other industries; and in 1909 to the value of \$672,817.

NETS AND SEINES.

The statistics which appear in Table 223 cover the manufacture of fish netting, seines, and crab scrape bags. The establishments usually buy the twine, thread, or rope which they use as materials, and for this reason were included in 1909 with "cordage and twine" as a subclassification of that industry. Table 223 gives separate statistics for the industry from 1859 to 1914, inclusive.

Hammocks to the value of \$21,476 in 1914 were reported as a subsidiary product of nets and seines.

UPHOLSTERING MATERIALS.

This classification includes the manufacture of artificial leather, curled hair, excelsior, drapery burlaps, upholstery buttons, and similar articles. Some of the products do not belong, strictly speaking, in the group of textiles; the only reason for including them is that they are used in connection with other products that are properly included.

The establishments which primarily manufacture upholstery materials may be separated into four classes: Those engaged in the manufacture of artificial leather and leatheroid; of excelsior; of curled hair; and of other materials, such as ginned moss, furniture pads, flax tow, trimmings, tufts, stuffing and felting hair, husks, etc. The statistics for each class are shown separately in the following table for 1914 and 1909:

ESTABLISHMENTS MANUFACTURING PRIMARILY—	UPHOLSTERING MATERIALS.						
	Number of estab- lish- ments.	Wage earners (average num- ber).	Capital.	Wages.	Cost of mate- rials.	Value of products.	Value added by man- ufacture.
Total, 1914.....	179	4,426	\$15,879	\$2,144	\$10,796	\$16,492	\$5,696
1909.....	230	4,067	10,297	1,689	8,068	13,054	4,986
Imitation leather and leatheroid:							
1914.....	10	795	6,020	485	4,108	6,097	1,989
1909.....	12	443	2,284	217	2,033	3,129	1,096
Excelsior:							
1914.....	99	1,177	2,980	558	1,403	2,516	1,113
1909.....	109	1,003	2,069	397	816	1,665	849
Curled hair:							
1914.....	19	1,212	2,930	524	2,471	3,658	1,187
1909.....	29	1,372	3,929	570	3,498	5,130	1,632
All other products:							
1914.....	51	1,242	3,949	577	2,814	4,221	1,407
1909.....	80	1,249	2,015	506	1,721	3,130	1,409

The following statement gives the combined statistics for upholstery materials and haircloth for the census years from 1869 to 1914, inclusive:

CENSUS YEAR.	UPHOLSTERING MATERIALS, INCLUDING HAIRCLOTH.							
	Number of estab- lish- ments.	Wage earners (average num- ber).	Primary horse- power.	Capital.	Wages.	Cost of mate- rials.	Value of products.	Value added by man- ufacture.
1914.....	198	5,021	20,476	\$18,823	\$2,434	\$12,450	\$18,887	\$6,437
1909.....	244	4,605	18,451	12,578	1,941	9,682	15,284	5,602
1904.....	236	4,712	15,604	9,293	1,867	7,977	12,678	4,701
1899.....	270	5,098	11,351	7,594	1,715	5,882	10,048	4,166
1889.....	152	3,231	3,786	4,428	1,221	3,013	5,733	2,720
1879.....	79	1,477	(¹)	1,690	523	1,023	1,838	815
1869.....	52	819	1,716	2,564	315	1,384	2,012	628

¹ Figures not available.

The manufacture of artificial leather is closely allied to the oilcloth industry, and although it is used to some extent in bookbinding, the upholstering trade consumes the bulk of the output. Reports for the manufacture of this product are therefore included with those for the industry designated "upholstering materials" in all general statistics. In 1914 artificial leather and leatheroid was reported as produced in connection with the manufacture of rubber goods and of children's carriages and sleds to the value of \$94,524.

No complete separate figures were given for upholstering materials at the censuses of 1859 and 1849. At the census of 1859 seven establishments were included under "curled hair," which is an upholstering material. There were 45 wage earners receiving \$12,744 in wages. The cost of materials was \$78,738 and the value of products \$106,869. At the census of 1849 six establishments were shown under "curled hair." The wage earners numbered 247, the wages amounted to \$48,216, and the value of products was \$279,800.

Excelsior to the value of \$59,247 was reported in 1914 by the manufacturers of lumber; baskets, and rattan and willow ware; wood, turned and carved; wooden packing boxes; mattresses and spring beds; and other industries. One manufacturer of glue and one of haircloth reported curled hair as a subsidiary product. The industries classified as "mattresses and spring beds," "boot and shoe findings," "buttons," and other industries reported all other upholstering materials to the value of \$403,926.

In 1909 establishments engaged primarily in the manufacture of glue, house-furnishing goods, not elsewhere specified, mattresses and spring beds, and other products, reported upholstering materials as subsidiary product to the value of \$916,586. Several industries reported for 1914 and 1909, among their principal products, various kinds of materials used in upholstering, these being specifically requested by the Census Bureau.

Cotton mills reported "tapestries" to the value of \$5,411,592 in 1914 and of \$4,723,907 in 1909. (See Table 36.)

Tanners, curriers, and finishers of leather reported carriage, automobile, and furniture leather to the value of \$14,328,358. (See Table 89.) It is probable that the greater part of this was used for upholstering purposes.

Silk mills reported "upholstery and tapestries" to the value of \$840,126 in 1914 and of \$382,820 in 1909. (See Table 44.)

Woolen and worsted mills reported "upholstering goods and sundries" to the value of \$2,042,029 in 1914 and of \$1,986,330 in 1909. (See Table 49.) Establishments manufacturing carpets and rugs, other than rag, also reported upholstering goods to the value of \$1,033,784 in 1914 and to the value of \$1,676,399 in 1909. Doubtless, products used for upholstering are included in the value of products of establishments classed under "buttons."

Among the by-products of slaughtering and meat-packing establishments are curled cattle-tail hair and hog hair sold to be used in upholstering.

WASTE.

The establishments included under this classification clean and otherwise prepare factory waste—principally cotton and carpet-wool waste—for use in wiping machinery, packing car-wheel journals and the journals of heavy machines, and for mop yarns. At censuses prior to 1909 the industry was designated as "cotton waste."

In 1914 a subclassification was made, showing "cotton waste" and "all other wastes" separately, each establishment being assigned according to its product of chief value. The statistics for these subclassifications are given in Table 29. The cotton waste reported as sold by cotton mills exceeded that purchased by such mills by approximately 260,000,000 pounds in quantity and \$10,879,298 in value. The waste reported as the product of carpet and rug factories amounted to 2,945,561 pounds, valued at \$149,559. Hosiery and knitting mills reported 12,999,218 pounds of cotton waste valued at \$628,944.

OAKUM.

Oakum is made by untwisting and picking into loose fiber old hemp ropes and gunny bagging, the product being used for calking seams and joints, especially those of vessels. The statistics for 1889 to 1914 are shown in Table 223. In 1849 five establishments were reported as making oakum, with a product of \$25,000. In 1859 fourteen establishments, with a product of \$348,401, reported oakum, but the industry was not again shown separately until 1889.

IRON AND STEEL AND THEIR PRODUCTS.

THE GROUP AS A WHOLE.

This group is intended to cover the manufacture of crude iron and steel and its conversion into finished products. Some of the finished products included, such as rails, plates, pipe, and wire, are of a relatively simple character. Others are highly elaborated products, for which the mere cost of the iron and steel as such is but a small proportion of the total cost. Many of these highly elaborated products may be roughly grouped under the terms "machinery" and "tools." From the standpoint of the method of manufacture, most of them may be considered as the product, in whole or in part, of foundries and machine shops. The "foundry and machine-shop" industry, according to the census classification, however, by no means covers all establishments which are foundries or machine shops. In cases where a considerable number of establishments make exclusively or chiefly some specific class of machinery or tools, or other articles of iron or steel, such establishments have been put in a special industry group.

There are a number of industries not classified by the Census Bureau under the group "iron and steel and their products," which nevertheless use iron and steel very largely as materials, and in which a considerable part of the process of manufacture consists of what would ordinarily be termed foundry and machine-shop work. These industries, however, use other materials extensively, in addition to iron and steel, and part of their processes of manufacture do not fall under the general designation of foundry and machine-shop work. Among such industries not included in the group "iron and steel and their products" may be mentioned the following: "Automobiles," included in the group "vehicles for land transportation;" "cars and general shop construction and repairs by steam-railroad companies," and "cars and general shop construction and repairs by electric-railroad companies," which together constitute the group "railroad repair shops;" "agricultural implements," "electrical machinery, apparatus, and supplies," "enameling," "japanning," "instruments, professional and scientific," "shipbuilding, iron and steel," and "windmills," all of which are included in the group "miscellaneous industries."

Table 67 lists the industries included by the Census Bureau in the group "iron and steel and their products," and shows for each the number of establishments, average number of wage earners, capital, amount of wages paid, cost of materials used, value of products, and value added by manufacture, as reported at the census of 1914. The industries are divided into two subgroups: (1) industries making crude iron and steel and rolled products; and (2) industries making other iron and steel manufactures, chiefly products ready for direct consumption, including machines and tools of various classes. The industries of the second subgroup use largely materials produced by those of the first subgroup, so that in the total value of products for the group as a whole there is extensive duplication. In fact, considerable duplication appears within some of the individual industries.

At the censuses of 1914, 1909, 1904, and 1899 each establishment which rolled iron and steel was classed as an entirety under the heading "iron and steel, steel works and rolling mills," except that blast-furnace departments and tin-plate or terneplate departments of such mills were uniformly segregated and treated as separate establishments. Establishments operating rolling mills in many cases manufacture large quantities of more advanced products in which rolled iron and steel are the principal materials, such as bolts, rivets, pipe, nails, and wire. In the reports for 1914, 1909, 1904, and 1899 the Census Bureau has classified under the several industries designated as those making "other iron and steel products" only establishments which have no rolling mills, but purchase the iron and steel, rolled or unrolled, which they use as material (an exception being made, as already noted, in the case of the tin-plate and terneplate industry). Consequently, the statistics given under certain of these designations by no means indicate the full magnitude of the several branches of business; and, moreover, in certain cases changes from census to census in the relative extent to which the products in question are made by rolling-mill establishments and by nonrolling establishments greatly affect the comparability of the statistics.

Table 67

IRON AND STEEL AND THEIR PRODUCTS: 1914.

INDUSTRY.	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Aggregate.....	17,719	1,061,058	\$4,281,998	\$723,161	\$1,762,313	\$3,223,144	\$1,460,531
CRUDE IRON AND STEEL AND ROLLED PRODUCTS.							
Total.....	587	278,072	1,720,653	210,923	855,406	1,236,319	380,913
Iron and steel:							
Blast furnaces.....	160	29,356	462,282	22,781	264,580	317,654	53,074
Steel works and rolling mills.....	427	248,716	1,258,371	188,142	590,826	918,665	327,839
OTHER IRON AND STEEL PRODUCTS.							
Total.....	17,132	782,986	2,561,345	512,238	906,907	1,986,825	1,079,918
Iron and steel, not made in steel works or rolling mills (products also largely made by rolling-mill establishments):							
Bolts, nuts, washers, and rivets.....	102	10,658	35,602	5,961	12,913	23,403	10,490
Cast-iron pipe.....	59	12,557	26,981	7,076	16,930	26,659	9,729
Doors and shutters.....	43	1,985	5,161	1,538	1,996	5,184	3,188
Forgings.....	191	10,689	36,320	7,487	14,611	28,961	14,350
Horseshoes.....	22	588	2,437	362	690	1,786	1,096
Nails and spikes, cut and wrought, including wire nails.	64	2,644	7,883	1,508	3,594	7,199	3,605
Cut nails.....	7	482	2,146	289	621	1,736	1,115
Wire nails.....	13	245	1,095	122	972	1,335	363
All other, including tacks.....	44	1,917	4,642	1,097	2,001	4,128	2,127
Springs, steel, car and carriage.....	84	3,703	11,083	2,602	6,143	11,595	5,452
Carriage and wagon.....	21	514	1,196	356	608	1,261	653
Railway.....	6	563	4,570	333	1,314	2,139	825
Automobile.....	38	1,866	4,085	1,450	3,529	6,528	2,999
Machinery and other.....	19	760	1,232	463	692	1,667	975
Structural ironwork.....	1,235	47,167	144,092	33,429	87,622	159,378	71,756
Wrought pipe.....	36	8,845	39,408	5,750	26,296	37,655	11,359
Cash registers and calculating machines.	52	8,956	41,075	6,110	3,992	30,520	26,528
Adding machines.....	18	3,192	17,153	2,394	1,061	13,061	12,000
Cash registers and parts.....	18	5,239	19,744	3,325	2,736	15,926	13,190
All other.....	16	525	4,178	391	195	1,533	1,338
Engines, steam, gas, and water.....	446	29,657	131,080	21,421	31,460	72,121	40,661
Firearms.....	29	7,064	15,611	5,067	2,670	10,544	7,874
Foundry and machine-shop products.	10,640	362,471	1,246,043	244,146	358,122	866,545	508,423
Boiler shops.....	249	9,960	45,526	6,260	14,332	27,140	12,803
Foundries.....	1,051	66,857	135,097	43,659	53,795	126,229	72,634
Machine shops.....	9,340	285,654	1,065,420	194,227	289,995	712,976	422,981
Gas machines and gas and water meters.							
Gas meters and water meters.....	123	4,972	17,822	3,310	6,118	15,184	9,066
Gas machines.....	33	3,745	12,270	2,434	4,519	10,758	6,239
All other.....	67	731	2,489	501	791	2,091	1,300
Hardware.....	23	496	3,063	375	808	2,335	1,527
Locks.....	539	41,213	92,302	22,583	29,071	73,320	44,249
Hinges and other builders' hardware.....	51	6,517	13,961	3,229	3,028	9,271	6,243
All other.....	132	14,522	35,217	7,865	8,643	24,280	15,637
Hardware, saddlery.....	356	20,174	43,124	11,489	17,400	39,769	22,369
Locomotives, not made by railroad companies.....	58	2,511	5,353	1,248	1,790	4,040	2,250
Pens, steel.....	19	17,391	86,413	11,085	23,546	43,374	19,828
Plumbers' supplies, not elsewhere specified.....	5	573	871	243	117	514	397
Pumps, steam and other power.....	260	18,479	48,029	11,703	18,670	43,386	24,716
Steam pumps.....	87	6,188	30,656	4,164	6,693	17,864	11,171
Other power.....	50	4,943	25,507	3,381	5,417	14,824	9,407
Pumps, not including power pumps.	37	1,245	5,149	783	1,276	3,040	1,764
Safes and vaults.....	96	2,134	6,194	1,391	2,765	6,350	3,585
Safes.....	39	2,972	9,360	1,860	2,646	7,257	4,611
Vaults.....	31	2,107	6,898	1,366	1,795	5,366	3,571
Scales and balances.....	8	865	2,462	494	851	1,891	1,040
Screws, machine.....	66	4,467	13,895	2,934	3,174	9,734	6,560
Screws, wood.....	66	3,643	9,762	2,810	3,058	7,248	4,190
Sewing machines and attachments.....	12	4,446	10,539	1,951	2,350	6,217	3,867
Sewing machines.....	46	14,308	34,467	8,861	7,359	21,392	14,033
Attachments.....	35	13,774	33,827	8,602	7,196	20,716	13,520
Steam fittings and steam and hot-water heating apparatus.....	11	534	640	259	163	676	513
Radiators and cast-iron heating boilers.....	295	26,388	85,853	16,738	26,921	63,922	37,001
All other.....	89	10,341	34,657	7,033	9,601	23,477	13,876
	206	16,047	51,196	9,705	17,320	40,445	23,125

See footnotes on p. 97.

Table 67—Continued.

IRON AND STEEL AND THEIR PRODUCTS: 1914.							
INDUSTRY.	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Expressed in thousands.							
OTHER IRON AND STEEL PRODUCTS—continued.							
Stoves and hot-air furnaces.....	438	29,535	\$78,524	\$20,777	\$23,802	\$67,941	\$44,139
Stoves and ranges.....	286	25,304	67,243	17,685	18,642	55,108	36,466
Hot-air furnaces.....	141	4,042	10,844	3,002	4,791	12,081	7,290
Fireless cookers.....	11	189	437	90	369	752	383
Stoves, gas and oil.....	113	7,790	16,646	5,088	10,153	21,449	11,296
Tin plate and terneplate.....	31	5,238	26,847	3,924	57,907	68,343	10,436
Tools and cutlery:							
Cutlery and edge tools.....	252	16,561	35,666	9,076	8,186	25,541	17,355
Table cutlery.....	27	3,832	9,134	2,083	1,889	5,606	3,717
Razors, plain and safety.....	28	1,620	4,992	811	1,074	4,912	3,838
Axes and hatchets.....	25	2,822	8,340	1,574	2,367	4,806	2,439
Scissors, shears, and clippers.....	29	1,925	2,663	1,050	823	2,393	1,770
Pocket knives.....	32	3,894	5,881	2,045	1,035	4,085	3,050
Augers, bits, chisels, and planes.....	28	982	2,075	592	336	1,294	958
All other.....	83	1,486	2,581	921	862	2,445	1,583
Files.....	48	4,349	11,327	2,135	1,595	5,608	4,013
Saws.....	100	4,560	15,860	3,020	4,714	12,517	7,803
Tools, not elsewhere specified.....	661	16,866	47,618	10,217	12,235	33,893	21,658
Shovels, spades, scoops, and hoes.....	40	2,041	8,439	1,114	2,573	4,714	2,141
Carpenters' tools.....	31	2,233	4,632	1,204	1,452	3,817	2,365
Machinists' tools.....	85	4,953	16,808	3,033	2,440	9,516	7,076
Not specified.....	505	7,639	17,739	4,866	5,770	15,846	10,076
Typewriters and supplies.....	107	11,091	30,488	6,966	5,501	24,500	18,999
Typewriters.....	50	10,303	27,635	6,510	3,607	19,851	16,244
Supplies ²	57	788	3,353	456	1,894	4,649	2,755
Vault lights and ventilators.....	45	601	1,054	457	959	2,051	1,092
Wire (not including wire departments of rolling mills).....	54	17,600	64,014.	11,021	56,424	81,841	25,417
Wirework, including wire rope and cable (not including wire drawing mills).....	552	12,126	38,509	6,719	24,114	41,789	17,675
Wire rope and cable.....	15	866	6,625	498	2,596	5,463	2,867
Woven-wire fencing.....	76	2,598	12,027	1,610	10,685	15,132	4,447
All other, including barbed wire.....	461	8,662	19,857	4,611	10,833	21,194	10,361

¹ Exclusive of the statistics for establishments engaged in the manufacture of "ordnance and accessories," which, in order to avoid disclosing the operations of individual establishments, is included in the total for "all other industries."

² See stationary goods, not elsewhere specified (Miscellaneous industries).

At the census of 1889 a different policy was pursued. An establishment operating a rolling mill, but using the rolled product in the manufacture of some more advanced commodity—wire or pipe, for example—was classified as a whole under the industry designated by the name of that commodity, provided, of course, it constituted the chief final product of the establishment. Consequently, the figures for 1889 for several of the individual industries, as shown in Table 223 (p. 568), are relatively much larger than they would have been under the method pursued at later censuses. For the same reason the statistics for the rolling-mill industry, as shown in the general tables published at that census, are by no means comparable with those for later censuses. At the census of 1889, however, special tables were also presented which showed the total business of all establishments having rolling mills, including those classified under more specific designations in the general tables. These combined totals for all rolling mills for 1889 are approximately comparable with those for later years, and have therefore been presented in Table 223. However, it would be an error to add the 1889 figures for rolling mills, as shown in that table, to the figures for the industries using rolled products as materials.

At the census of 1879 the practice with reference to the classification of rolling mills making more advanced commodities from the rolled material appears to have been in the main similar to that pursued in 1899, 1904, 1909, and 1914, thus rendering the figures for the industries in question for that census incomparable with those for 1889, but roughly comparable with those for the later censuses. On the other hand, in 1869 the practice seems to have been in general similar to that in 1889. It is impossible, however, to state definitely how far the data for 1869 are comparable with those for later censuses.

IRON AND STEEL—BLAST FURNACES.

The establishments included under this classification manufacture, from the ore, all kinds of pig iron and ferroalloys, such as spiegeleisen, ferromanganese, ferrosilicon, and castings made direct from the furnace. In many cases a single plant combines and castings made direct from the furnace. In many cases the data were segregated so as to show the blast-furnace business separately. General statistics for the industry for the census years from 1849 to 1914, inclusive, are given in Table 223.

The quantities and cost of the principal materials used by the blast furnaces and the quantities and values of the pig-iron and ferroalloy products manufactured, and statistics relating to equipment, are shown in Table 68.

The table gives the production for consumption in the works of the company producing as well as that made for sale, and classifies the product according to fuel used, according to grade of iron, and according to method of delivery or casting. It also shows the number and daily capacity of the active pig-iron blast furnaces classified by kind of fuel used, other data in regard to furnace equipment, and the number and rated capacity of gas engines using blast-furnace gas. The ton of 2,240 pounds is used in showing quantities except when otherwise stated.

Table 68	BLAST FURNACES.			
	1914	1909	1904 ¹	1899 ¹
MATERIALS.				
Total cost.....	\$264,580,060	\$320,637,889	\$178,941,918	\$131,503,655
Iron ore, total:				
Tons.....	43,326,817	48,353,677	30,032,862	25,366,894
Cost.....	\$150,855,740	\$187,264,601	\$100,945,369	\$65,902,922
Domestic—				
Tons.....	41,556,642	46,605,930	29,202,944	24,612,511
Cost.....	\$141,276,713	\$177,589,789	\$96,206,246	\$61,795,473
Foreign—				
Tons.....	1,770,175	1,747,747	829,918	754,383
Cost.....	\$9,579,027	\$9,674,812	\$4,739,123	\$4,107,449
Mill cinder, scale, scrap, slag, etc.:				
Tons.....	2,168,092	1,982,530	1,865,385	1,600,313
Cost.....	\$6,651,055	\$5,544,859	\$3,830,961	\$3,772,385
Fluxes:				
Tons.....	11,499,685	13,570,845	8,325,209	7,324,743
Cost.....	\$11,184,378	\$12,239,493	\$6,888,647	\$5,054,725
Fuel for smelting, total cost:				
Coke—	\$85,436,530	\$105,994,112	\$62,802,660	\$44,199,382
Tons (net ton, 2,000 pounds).....	26,883,082	31,436,536	19,739,671	16,461,533
Cost.....	\$83,499,448	\$102,134,423	\$57,126,997	\$38,976,770
Anthracite coal ² —				
Tons.....	38,874	265,401	560,637	886,564
Cost.....	\$158,377	\$904,102	\$1,812,779	\$2,297,419
Bituminous coal ² —				
Tons (net ton, 2,000 pounds).....	60,337	115,173	801,640	832,235
Cost.....	\$95,630	\$168,561	\$1,340,997	\$1,101,312
Charcoal—				
Bushels.....	29,083,978	38,032,618	37,273,569	30,677,585
Cost.....	\$1,683,075	\$2,787,026	\$2,521,887	\$1,823,881
All other materials.....	\$10,452,357	\$9,594,824	\$4,474,281	\$12,574,241
PRODUCTS.				
Total value.....	\$317,653,983	\$391,429,283	\$231,822,707	\$206,756,557
Pig iron, including spiegeleisen, ferromanganese, ferrosilicon, other ferroalloys, and direct castings:				
Tons.....	23,269,731	25,651,798	16,623,625	14,447,791
Value.....	\$312,761,617	\$387,830,443	\$228,911,116	\$206,512,755
For consumption in works of company producing—				
Tons.....	15,495,004	15,858,203	9,926,545	(³)
Value.....	\$209,263,405	\$239,387,017	\$138,887,586	(³)
For sale—				
Tons.....	7,774,727	9,793,595	6,697,080	(³)
Value.....	\$103,498,212	\$148,443,426	\$90,043,530	(³)
Slag, value.....				
Gas, blast-furnace gas to other departments, value.....	\$462,439	\$306,946		
All other products, value.....	\$2,341,123	\$593,309	\$2,911,591	\$243,802
Pig iron classified according to fuel used:				
Coke—				
Tons.....	22,787,890	24,522,152		
For consumption.....	15,436,921	15,826,734		
For sale.....	7,350,969	8,695,418	14,909,029	12,253,818
Value.....	\$304,356,130	\$368,131,822	\$203,814,049	\$173,763,091
Bituminous coal and coke mixed—				
Tons.....	5118,632	86,420		
Value.....	\$2,704,134	\$1,552,814		

See footnotes on p. 100.

Table 68—Continued.

	BLAST FURNACES.			
	1914	1909	1904 ¹	1899 ¹
PRODUCTS—continued.				
Pig iron classified according to fuel used—Con.				
Anthracite coal and coke mixed and anthracite coal alone—				
Tons.....	87,919	670,991	1,305,094	1,841,857
Value.....	\$1,256,663	\$10,962,150	\$18,103,982	\$26,678,705
Charcoal—				
Tons.....	6275,290	372,235	409,502	7352,116
Value.....	\$4,444,690	\$7,183,657	\$6,993,085	\$6,070,959
Pig iron classified by grades, tons:				
Bessemer (0.04 to 0.10 per cent in phosphorus).....				
For consumption.....	7,577,792	10,147,052	8,894,584	8,475,530
For sale.....	7,092,656	8,978,732		
Low phosphorus (below 0.04 per cent).....	485,136	1,168,320		
For consumption.....	305,738	248,720	192,795	(⁶)
For sale.....	38,191	4,279		
Basic.....	267,547	244,441		
For consumption.....	9,465,853	7,741,759	2,553,940	937,439
For sale.....	7,756,032	5,999,384		
Forge or mill.....	1,709,821	1,742,375		
For consumption.....	488,172	586,685	601,677	1,057,616
For sale.....	332,997	74,777		
Foundry.....	155,175	511,908		
For consumption.....	4,325,100	5,539,410	3,675,310	3,510,300
For sale.....	127,270	424,918		
Malleable.....	4,197,830	5,114,492		
For consumption.....	730,910	934,211	316,964	
For sale.....	5,192	187,418		
White and mottled and miscellaneous grades.....	725,718	746,793		
For consumption.....	32,202	110,810	98,627	208,323
For sale.....	10,589	35,667		
Castings made direct from blast furnace.....	21,613	75,143		
Ferrous.....	14,384	16,181	9,469	7,123
For consumption.....	329,580	326,970	280,259	251,460
For sale.....	120,397	140,557		
Spiegeleisen.....	209,183	186,413		
Ferromanganese.....	81,583	142,223	169,630	163,672
Ferrosilicon, including Bessemer ferrosilicon (7 per cent and over in silicon).....	104,437	82,208	57,072	51,878
All other.....	122,367	102,539	53,557	35,910
	21,193			
Pig iron classified by method of delivery or casting, tons:				
Delivered in molten condition to steel works, etc.....	11,936,791	12,197,636	5,898,744	(⁶)
Sand cast.....	4,681,867	7,655,568	6,078,844	(⁶)
Machine cast.....	6,007,417	5,096,797	4,307,103	(⁶)
Chill cast.....	629,272	635,566	329,480	(⁶)
Direct castings.....	14,384	16,181	9,469	7,123
EQUIPMENT.				
Furnaces in active establishments:				
Completed furnaces at end of year (not including furnaces rebuilding)—				
Number.....	353	388	343	343
Furnaces of daily capacity—				
Less than 100 tons.....	37	57	69	(⁶)
100 to 199 tons.....	56	82	95	(⁶)
200 to 299 tons.....	57	77	66	(⁶)
300 to 399 tons.....	59	81	59	(⁶)
400 to 499 tons.....	79	62	31	(⁶)
500 tons and over.....	65	29	23	(⁶)
Daily capacity, total tons.....	109,426	101,447	77,816	54,433
Furnaces—				
Less than 100 tons.....	1,712	3,006	3,627	(⁶)
100 to 199 tons.....	7,967	11,709	13,586	(⁶)
200 to 299 tons.....	13,206	17,838	15,357	(⁶)
300 to 399 tons.....	19,208	26,508	19,556	(⁶)
400 to 499 tons.....	34,808	26,841	13,590	(⁶)
500 tons and over.....	32,525	15,425	12,100	(⁶)
Active during the year—				
Number.....	286	370	317	325
Coke furnaces.....	252	312	(⁶)	(⁶)
Bituminous coal and coke mixed.....	4	5	(⁶)	(⁶)
Anthracite coal and coke mixed.....	4	25	(⁶)	(⁶)
Charcoal.....	24	28	(⁶)	(⁶)
Charcoal and coke mixed.....	1		(⁶)	(⁶)
Charcoal and electricity.....	1		(⁶)	(⁶)

See footnotes on p. 100.

Table 68—Continued.	BLAST FURNACES.			
	1914	1909	1904 ¹	1899 ¹
EQUIPMENT—continued.				
Furnaces in active establishments—Continued.				
Active during the year—Continued.				
Aggregate daily capacity, tons.....	90,172	98,973	73,520	(3)
Coke furnaces.....	87,844	94,499	(3)	(3)
Bituminous coal and coke mixed.....	725	395	(3)	(3)
Anthracite coal and coke mixed.....	272	2,745	(3)	(3)
Charcoal.....	1,300	1,334	(3)	(3)
Charcoal and coke mixed.....	14	.....	(3)	(3)
Charcoal and electric.....	15	.....	(3)	(3)
Completed since the prior census (1909)—				
Number.....	30	9 11	9 17	(3)
Coke furnaces.....	29	9	(3)	(3)
Charcoal.....	1	2	(3)	(3)
Aggregate daily capacity, tons.....	11,902	3,807	6,085	(3)
Coke furnaces.....	11,897	3,800	(3)	(3)
Charcoal.....	5	7	(3)	(3)
Rebuilding at end of year ¹⁰ —				
Number.....	8	8	(3)	(3)
Daily capacity, tons.....	2,650	1,873	(3)	(3)
In course of construction at end of year—				
Number.....	2	10	4	16
Daily capacity, tons.....	850	4,100	1,375	7,275
Idle during the entire year (idle furnaces in active establishments)—				
Number.....	70	24	26	18
Coke furnaces.....	62	19	(3)	(3)
Anthracite and coke mixed.....	3	1	(3)	(3)
Anthracite coal.....	1	1	(3)	(3)
Charcoal.....	4	3	(3)	(3)
Aggregate daily capacity, tons.....	20,004	4,027	4,296	(3)
Coke furnaces.....	19,547	3,750	(3)	(3)
Anthracite and coke mixed.....	270	85	(3)	(3)
Anthracite coal.....	75	50	(3)	(3)
Charcoal.....	112	142	(3)	(3)
Abandoned or dismantled since the prior census (1909)—				
Number.....	12	9 3	9 4	(3)
Coke furnaces.....	8	(3)	(3)	(3)
Anthracite coal and coke mixed.....	1	(3)	(3)	(3)
Bituminous coal and coke mixed.....	2	(3)	(3)	(3)
Charcoal.....	1	(3)	(3)	(3)
Aggregate daily capacity, tons.....	1,865	710	1,035	(3)
Coke furnaces.....	1,565	(3)	(3)	(3)
Anthracite coal and coke mixed.....	70	(3)	(3)	(3)
Bituminous coal and coke mixed.....	170	(3)	(3)	(3)
Charcoal.....	60	(3)	(3)	(3)
Pig casting machines, number.....				
Heyl & Patterson.....	112	104	(3)	(3)
Uehling.....	58	(3)	(3)	(3)
Davis, Hartman, and special.....	49	(3)	(3)	(3)
Granulated slag pits.....	5	(3)	(3)	(3)
Gas engines operated with blast-furnace gas:				
Number.....	85	85	(3)	(3)
Blast furnaces served, number.....	101	(3)	(3)	(3)
Gas engines operated with blast-furnace gas:				
Number.....	144	85	(3)	(3)
In blast-furnace departments.....	73	42	(3)	(3)
In power and electric stations for all departments.....	71	43	(3)	(3)
Horsepower.....	380,820	198,040	(3)	(3)

¹ Not including the statistics for a blast furnace operated by a penal institution.

² The figures for 1904 and 1899 include fuel for steam raising.

³ Figures not available.

⁴ Blast-furnace gas for fuel for steam and for gas engines:

Total (thousand cubic feet).....	1914. 1,392,500,000	1909. 654,500,000
Used in blast-furnace department.....	1,053,800,000	480,200,000
Consumed in rolling-mill or other department.....	338,700,000	174,300,000

⁵ Includes considerable quantities of spiegeleisen and ferromanganese.

⁶ Includes small quantities of pig iron made with charcoal and electricity.

⁷ Includes 52,992 tons of mixed charcoal and coke pig iron.

⁸ Included with Bessemer.

⁹ During the year.

¹⁰ Eight coke furnaces, 1914; 7 coke and 1 anthracite and coke, 1909.

The following table, from the report of the American Iron and Steel Institute, gives the statistics for all blast furnaces, including those in idle establishments, on December 31, 1914, by states:

STATE.	NUMBER.				ANNUAL CAPACITY (GROSS TONS).			
	Total.	Coke. ¹	Anthra- cite coal. ²	Char- coal.	Total.	Coke. ¹	Anthra- cite coal. ²	Charcoal.
COMPLETED FURNACES.								
United States.....	451	389	20	42	44,405,000	43,046,500	710,200	648,300
Alabama.....	48	44	.....	4	3,660,000	3,580,000	.....	80,000
Colorado.....	6	6	.....	.....	730,000	730,000	.....	.....
Connecticut.....	3	.....	.....	3	15,000	.....	.....	15,000
Georgia.....	4	2	.....	2	129,500	96,000	.....	33,500
Kentucky.....	6	5	.....	1	314,250	311,250	.....	3,000
Illinois.....	26	26	.....	.....	3,674,800	3,674,800	.....	.....
Indiana.....	10	10	.....	.....	1,631,200	1,631,200	.....	.....
Massachusetts.....	2	.....	.....	2	10,000	.....	.....	10,000
Maryland.....	5	4	.....	1	662,000	637,000	.....	5,000
Minnesota.....	1	1	.....	.....	82,000	82,000	.....	.....
Michigan.....	14	3	.....	11	593,800	250,000	.....	343,800
Mississippi.....	1	.....	.....	1	3,500	.....	.....	3,500
Missouri.....	2	1	.....	1	65,000	45,000	.....	20,000
New Jersey.....	6	5	.....	1	430,300	430,000	.....	300
New York.....	27	23	3	1	2,938,000	2,810,000	123,000	5,000
Ohio.....	74	73	.....	1	8,828,000	8,825,000	.....	3,000
Oregon.....	1	.....	.....	1	15,000	.....	.....	15,000
Pennsylvania.....	159	136	17	6	17,858,000	17,256,200	587,200	14,600
Tennessee.....	18	17	.....	1	781,650	777,650	.....	4,000
Texas.....	3	2	.....	1	76,000	61,000	.....	15,000
Virginia.....	22	20	.....	2	1,018,000	989,000	.....	29,000
Washington.....	1	1	.....	.....	24,000	24,000	.....	.....
West Virginia.....	4	4	.....	.....	408,000	408,000	.....	.....
Wisconsin.....	8	6	.....	2	457,000	408,400	.....	48,600
BUILDING FURNACES.								
United States.....	5	5	.....	.....	860,000	860,000	.....	.....
Minnesota.....	2	2	.....	.....	325,000	325,000	.....	.....
Ohio.....	2	2	.....	.....	360,000	360,000	.....	.....
Pennsylvania.....	1	1	.....	.....	175,000	175,000	.....	.....

¹ Includes 7 furnaces (Illinois, 2; Ohio, 3; and Pennsylvania, 2) which use bituminous coal and coke mixed.

² Includes furnaces which use anthracite coal alone, and anthracite coal and coke mixed.

The record for the maximum production per furnace for a day, a week, and a month, as reported at the census of 1909, stands unbroken, viz, the production of 918 tons of pig iron by the Edgar Thompson furnace "K," March 30, 1905; 5,315 tons by the Duquesne furnace No. 1 for a week in March, 1906; and 21,272 tons by the Edgar Thompson furnace "K" in March, 1905. The maximum production since 1909 was made for a day by furnace No. 1 of the Illinois Steel Co., April 13, 1910, 785 tons; for a week by furnace No. 1 of the Pittsburg Steel Co. in December, 1914, 5,005 tons; and for a month by the last-named furnace in December, 1914, 20,746 tons.

The record for the longest run on a single lining is held by the Shoenberger furnace No. 2, from March, 1897, to August, 1906, 3,431 days. The furnace was banked 11 times and 69 days were lost in banking. The average daily output was 197 tons of pig iron, and the total production during the period 633,208 tons. The longest run terminating since the census of 1909 was made by one of the Eliza furnaces of the Jones & Laughlin Steel Co., from April 2, 1904, to January 4, 1913—3,172 days. The furnace was banked but once (for 26 days) during the period. The average daily output was 427 tons, and the total production during the period was 1,353,625 tons. The foregoing production of 1,353,625 tons is the largest made by a furnace on a single lining. Prior thereto the record was held by the Duquesne furnace No. 1, which produced 1,287,381 tons in a run of 2,689 days from 1896 to 1903.

The following table presents the statistics in regard to durations of runs, classified according to time groups, and according to size of furnaces as indicated by height. The figures cover all furnaces reporting length of runs and the last three runs when the same were reported.

DURATION OF RUNS.	Total.	FURNACES GROUPED ACCORDING TO HEIGHT.				
		Less than 60 feet.	60 to 69 feet.	70 to 79 feet.	80 to 89 feet.	90 feet and over.
Number of furnaces reporting length of runs.....	287	7	27	61	103	89
Number of runs (last 3 runs when reported) ¹	664	16	59	152	234	203
Average length, days.....	837	415	728	738	782	1,041
Furnaces classified according to time groups:						
Less than 500 days—						
Number of runs.....	201	11	23	54	77	36
Average length, days.....	300	216	255	310	306	325
500 to 1,000 days—						
Number of runs.....	260	4	22	67	95	72
Average length, days.....	728	627	704	709	738*	748
1,000 to 1,500 days—						
Number of runs.....	123	.....	9	17	41	56
Average length, days.....	1,215	.....	1,227	1,230	1,197	1,222
1,500 to 2,000 days—						
Number of runs.....	52	1	3	9	15	24
Average length, days.....	1,712	1,764	1,756	1,690	1,691	1,726
2,000 to 2,500 days—						
Number of runs.....	19	.....	1	3	4	11
Average length, days.....	2,206	.....	2,025	2,124	2,214	2,242
2,500 days and over—						
Number of runs.....	9	.....	1	2	2	4
Average length, days.....	2,882	.....	3,284	2,760	2,981	2,793

¹ In some cases only one or two completed runs.

In 1914 the number of active pig-iron establishments was 48, or 23.1 per cent, less than the number reporting in 1909. The pig-iron production decreased in amount by 2,382,067 tons, or 9.3 per cent, and in value by \$75,068,826, or 19.4 per cent.

The year 1914 covered a period of marked depression. It was followed by a recovery in 1915, the production for that year being, as reported by the American Iron and Steel Institute, 29,916,213 tons, which production exceeds that of 1909 by 4,264,415 tons, or 16.6 per cent.

The decrease in the amount of iron ore used in 1914 was, as compared with 1909, 5,026,860 tons, or 10.4 per cent, and in cost \$36,408,861, or 19.4 per cent.

Features in the development of the industry are the increase in the proportion of pig iron produced for consumption in other departments of the works of the producing company, viz, from 59.7 per cent of the total output in 1904, to 61.8 per cent in 1909, and to 66.6 per cent in 1914; and the increase in the proportion of the product passed on in a molten condition to undergo further processes without being cast into pigs, viz, from 35.5 per cent in 1904 to 47.6 per cent in 1909, and to 51.3 per cent in 1914.

IRON AND STEEL—STEEL WORKS AND ROLLING MILLS.

This industry includes the conversion of iron into steel and the hot rolling of iron and steel. In general, the process of conversion and that of rolling are performed in the same plant, and in such cases the value of products includes only that of the final products as they leave the plant. There is, however, some duplication within the industry, due to the use of the products of one establishment—either crude steel or partly rolled steel—as materials by another. The principal finished rolled products of establishments included in this classification are bars and rods, wire rods, bars for reinforced concrete, plates and sheets, black plates for tinning, nail and tack plates, rails, hoops, bands, and cotton ties, structural shapes, and skelp. Direct steel castings are another product. This industry also overlaps several others, steel works and rolling mills often producing manufactures from rolled products, such as wire, wrought-welded pipe and tubes, bolts, nuts, rivets, forged spikes, washers, galvanized plates or sheets, horse and mule shoes, and cut nails and spikes. Establishments whose business is confined to the manufacture of these more highly elaborated products and which do not do hot rolling are classed under other headings. The tin-plate dipping departments operated in connection with some rolling mills are treated as separate establishments and classed with the tin-plate industry, but it has not been possible to segregate the wire departments of rolling mills, or departments making other elaborated products.

The table which follows, giving the comparative statistics of materials and products of steel works and rolling mills for 1914, 1909, 1904, and 1899, does not in all cases show the tonnage or value of the finished products as they leave the mill. Under the heading "finished rolled products and forgings," several of the items, such as wire rods, flue and pipe skelp, and plates and sheets, represent the total tonnage of these products rolled and their actual or estimated value in the original rolled form, notwithstanding the fact that part of them were subsequently elaborated into more highly finished products in the rolling mills themselves. The added value given to the rolled iron and steel by subsequent processes performed in the same establishment is included in the amount (\$85,238,964) given for item III of the table. The figures given, under products, for unrolled steel and for partly finished rolled products, represent only the product made for sale or transfer to other plants, the larger quantities made but subsequently rolled or rerolled in the same mills not being included on account of the duplication which would be involved. The table gives the total steel production, including that sold and that consumed.

Although the total and also the group totals include no duplication of quantity or value of products within any given establishment itself, there is considerable duplication due to the use of the product of one establishment as material for another establishment, whether the latter be owned by a separate concern or by the same company. The *ton of 2,240 pounds* is used in showing quantities except when otherwise stated.

Table 71

	STEEL WORKS AND ROLLING MILLS.			
	1914	1909	1904	1899
Number of establishments.....	427	446	415	445
Steel works and rolling mills.....	112	89	(1)	(1)
Steel works only (no hot rolling).....	96	99	(1)	(1)
Rolling mills only (no steel furnaces).....	219	258	(1)	(1)
Total number producing steel.....	208	189	(1)	(1)
Total number doing hot rolling.....	331	347	(1)	(1)
MATERIALS USED.				
Total cost.....	\$590,825,692	\$657,500,856	\$441,204,432	\$390,895,277
Iron and steel:				
For furnaces and hot rolls—				
Pig iron, including ferroalloys—				
Tons.....	17,429,657	19,076,889	12,191,228	10,411,281
Cost.....	\$248,630,958	\$297,471,122	\$172,101,436	\$151,064,348
Pig iron—				
Tons.....	17,128,092	18,712,304	(1)	(1)
Cost.....	\$232,131,772	\$282,663,740	(1)	(1)
Produced by consumer—				
Tons.....	15,111,453	15,108,244	(1)	(1)
Assigned cost.....	\$201,965,395	\$224,474,026	(1)	(1)
Purchased—				
Tons.....	2,016,634	3,604,060	(1)	(1)
Cost.....	\$30,166,377	\$58,189,714	(1)	(1)
Ferroalloys—spiegeleisen, ferromangane-				
Tons.....	301,565	364,585	(1)	(1)
Cost.....	\$16,499,186	\$14,807,382	(1)	(1)
Produced by consumer—				
Tons.....	108,238	144,492	(1)	(1)
Assigned cost.....	\$3,849,738	\$3,776,798	(1)	(1)
Purchased—				
Tons.....	193,327	220,093	(1)	(1)
Cost.....	\$12,649,448	\$11,030,584	(1)	(1)
Scrap, including old rails not intended for				
rerolling—				
Total consumption, tons.....	10,656,187	9,929,710		
From outside sources—				
Tons.....	5,070,880	4,803,617	5,124,277	4,126,980
Cost.....	\$59,381,527	\$72,722,831	\$67,601,248	\$66,852,621
Produced by consumer in other works				
Tons.....	899,113	773,843	(1)	(1)
Assigned cost.....	\$11,384,960	\$10,629,317	(1)	(1)
Purchased—				
Tons.....	4,171,767	4,029,774	(1)	(1)
Cost.....	\$47,996,567	\$62,063,514	(1)	(1)
Made and consumed in same works,				
tons.....	5,585,307	5,126,093	(1)	(1)

See footnotes on p. 110.

Table 71—Continued.	STEEL WORKS AND ROLLING MILLS.			
	1914	1909	1904	1899
MATERIALS USED—continued.				
Iron and steel—Continued.				
For furnaces and hot rolls—Continued.				
Ingots, blooms, billets, slabs, muck and scrap bar, rails for rerolling, and sheet and tin plate bars, not produced in works where consumed—				
Tons.....	6,458,399	6,508,249	4,920,177	3,876,456
Cost.....	\$132,178,063	\$145,575,635	\$110,268,828	\$97,809,926
Produced by consumer in other works—				
Tons.....	2,882,069	3,080,672	(1)	(1)
Assigned cost.....	\$57,587,159	\$62,594,558	(1)	(1)
Purchased—				
Tons.....	3,576,330	3,427,577	(1)	(1)
Cost.....	\$74,590,904	\$82,981,077	(1)	(1)
Iron ore—				
Tons.....	999,472	835,338	549,995	346,310
Cost.....	\$4,282,201	\$4,292,963	\$2,396,792	\$1,348,809
Domestic—				
Tons.....	969,617	823,306	546,262	(1)
Cost.....	\$4,053,213	\$4,224,593	\$2,372,739	(1)
Foreign—				
Tons.....	29,855	12,032	3,733	(1)
Cost.....	\$198,988	\$68,370	\$24,053	(1)
Rolled forms for further manufacture—				
Skelp—				
Total consumption, tons.....				
From outside sources—	1,376,313	1,578,290		
Tons.....	192,557	176,717	259,643	(1)
Cost.....	\$5,496,850	\$5,704,856	\$7,331,935	(1)
Produced by consumer in other works—				
Tons.....	47,998	35,221	(1)	(1)
Assigned cost.....	\$1,662,917	\$1,151,430	(1)	(1)
Purchased—				
Tons.....	144,559	141,496	(1)	(1)
Cost.....	\$3,833,933	\$4,553,426	(1)	(1)
Made and consumed in same works, tons.....				
Wire rods—	1,183,756	1,401,573	(1)	(1)
Total consumption, tons.....				
From outside sources—	1,494,761	1,465,221		
Tons.....	95,665	146,425	161,914	136,725
Cost.....	\$2,352,027	\$4,252,695	\$4,774,383	\$5,419,617
Produced by consumer in other works—				
Tons.....	76,717	128,291	(1)	(1)
Assigned cost.....	\$1,864,312	\$3,547,511	(1)	(1)
Purchased—				
Tons.....	18,978	18,134	(1)	(1)
Cost.....	\$487,715	\$705,118	(1)	(1)
Made and consumed in same works, tons.....				
Copper ingots, billet, blooms, bars, scrap, etc.:	1,399,068	1,318,796	(1)	(1)
Tons.....	13,335	19,545	(1)	(1)
Cost.....	\$4,069,309	\$5,750,013	(1)	(1)
Fuel and rent of power.....				
All other materials.....	\$55,447,804	\$46,136,725	\$35,386,666	\$22,463,209
	\$79,016,953	\$75,588,011	\$41,343,144	\$45,936,747
PRODUCTS.				
Total value.....				
	\$918,664,565	\$985,722,534	\$673,965,026	\$597,211,716
L.—ROLLED, FORGED, AND OTHER CLASSIFIED IRON AND STEEL PRODUCTS:				
Tons.....				
For sale.....	25,522,784	26,723,274	18,218,233	15,055,626
For consumption.....	16,904,966	18,265,891	(1)	(1)
Value.....	\$8,617,818	\$8,457,383	(1)	(1)
A.—Finished rolled products and forgings—				
Tons.....				
For sale.....	18,482,182	19,276,237	12,759,993	10,398,796
For consumption.....	12,647,638	(1)	(1)	(1)
Value.....	\$5,834,544	(1)	(1)	(1)
Rails—				
Number of establishments.....	15	13	14	15
Tons.....	\$1,842,041	2,858,599	\$2,194,605	\$4,251,337
Value.....	\$4,009,918	\$81,128,295	\$58,256,750	\$46,533,159
Open-hearth—				
Tons.....				
Value.....	\$1,522,684	1,215,072	128,681	(1)
Bessemer—				
Tons.....	\$45,336,381	\$36,400,780	\$3,608,562	(1)
Tons.....	319,357	1,643,527	2,065,024	(1)
Value.....	\$8,673,537	\$44,727,515	\$54,627,488	(1)

See footnotes on p. 110.

Table 71—Continued.

	STEEL WORKS AND ROLLING MILLS.			
	1914	1909	1904	1899
PRODUCTS—continued.				
I.—ROLLED, FORGED, AND OTHER CLASSIFIED IRON AND STEEL PRODUCTS—continued.				
A.—Finished rolled products and forgings—Con.				
Rerolled or renewed rails—				
Number of establishments	8	9	8	(1)
Tons	63,671	106,352	99,530	(1)
Value	\$1,438,237	\$2,683,017	\$2,480,328	(1)
Rail fastenings (including splice bars, tie-plates, fishplates, etc.)—				
Number of establishments	26	25	(1)	(1)
Tons	349,307	396,911	174,055	(1)
Value	\$11,526,956	\$14,488,412	\$5,663,052	(1)
Structural shapes (not including plates used for making girders)—				
Number of establishments	35	27	(1)	(1)
Tons	2,053,440	2,123,630	954,537	856,983
Value	\$57,475,366	\$65,504,593	\$32,730,901	\$29,361,522
Heavy (3-inch and over leg or web)—				
Tons	1,889,674	(1)	(1)	(1)
Value	\$51,702,478	(1)	(1)	(1)
Light (less than 3-inch leg or web)—				
Tons	193,766	(1)	(1)	(1)
Value	\$5,772,888	(1)	(1)	(1)
Bars for reinforced concrete—				
Number of establishments	30	25		
Tons	269,966	191,358		
Value	\$7,751,549	\$5,588,963		
Merchant bars, including bars or rods not elsewhere specified—				
Number of establishments	99		(1)	(1)
Tons	2,474,737		2,442,810	2,493,159
Value	\$84,409,500		\$34,069,122	\$100,597,221
Steel—				
Tons	2,062,791			
Value	\$71,352,396			
Iron—				
Tons	411,946			
Value	\$13,057,104			
Spike and chain rods, bolt and nut rods, horseshoe bars, and strips—				
Number of establishments	41	132		
Tons	535,875	3,784,248		
Value	\$18,319,865	\$121,488,423		
For sale—				
Tons	45,916			
Value	\$1,570,929			
For consumption—				
Tons	489,959			
Assigned value	\$16,748,936			
Wire rods—				
Number of establishments	33	29	(1)	(1)
Tons	2,377,691	2,295,279	1,792,704	916,587
Value	\$61,578,145	\$61,947,958	\$52,995,031	\$35,529,529
For sale—				
Tons	535,098	511,322	(1)	(1)
Value	\$14,000,752	\$14,681,108	(1)	(1)
For consumption—				
Tons	1,842,593	1,783,957	(1)	(1)
In works where produced	1,399,066	1,318,796	(1)	(1)
In other works of same company	443,527	465,161	(1)	(1)
Assigned value	\$47,577,393	\$47,266,850	(1)	(1)
Plates or sheets (not elsewhere specified)—				
Number of establishments	99	105	(1)	(1)
Tons	3,699,249	3,332,733	1,856,469	1,488,056
Value	\$129,785,963	\$133,272,393	\$77,802,001	\$63,109,223
For sale—				
Tons	2,907,272	2,807,114	(1)	(1)
Value	\$96,442,998	\$108,298,861	(1)	(1)
For consumption—				
Tons	791,977	525,619	(1)	(1)
Assigned value	\$33,342,965	\$24,973,532	(1)	(1)
According to gauge—				
Plates No. 12 and thicker—				
Tons	2,183,775	7,392,144	(1)	(1)
Value	\$62,768,579	(1)	(1)	(1)
Sheets No. 13 and thinner—				
Tons	1,515,474	8,940,589	(1)	(1)
Value	\$67,017,384	(1)	(1)	(1)

See footnotes on p. 110.

Table 71—Continued.

	STEEL WORKS AND ROLLING MILLS.			
	1914	1909	1904	1899
PRODUCTS—continued.				
I.—ROLLED, FORGED, AND OTHER CLASSIFIED IRON AND STEEL PRODUCTS—continued.				
A.—Finished rolled products and forgings—Con.				
Black plates (or sheets) for tinning—				
Number of establishments	30	29	35	44
Tons	1,011,938	631,435	504,025	394,014
Steel	1,004,486	(1)	504,025	(1)
Iron	7,452	(1)	(1)	(1)
Value	\$43,147,041	\$30,955,967	\$25,297,079	\$20,967,806
Steel	42,792,556	(1)	25,297,079	(1)
Iron	354,485	(1)	(1)	(1)
For sale—				
Tons	81,583	56,275	(1)	(1)
Value	\$3,500,576	\$2,736,396	(1)	(1)
For consumption—				
Tons	930,355	575,160	(1)	(1)
Assigned value	\$39,646,465	\$28,219,571	(1)	(1)
Skelp, flue, and pipe—				
Number of establishments	38	42	(1)	(1)
Tons	1,960,844	2,084,286	1,557,690	^a 1,195,189
Value	\$52,443,303	\$64,514,728	\$46,780,202	^a \$49,159,747
For sale—				
Tons	506,350	580,686	(1)	(1)
Value	\$14,621,830	\$18,415,604	(1)	(1)
For consumption—				
Tons	1,454,464	1,503,600	(1)	(1)
In works where produced	1,183,756	1,401,573	(1)	(1)
In other works of same company	270,708	102,027	(1)	(1)
Assigned value	\$37,821,473	\$46,099,124	(1)	(1)
Hoops, bands, and cotton ties—				
Number of establishments	17	15	(1)	(1)
Tons	603,940	341,043	337,223	(10)
Value	\$19,945,078	\$10,429,681	\$12,760,010	(10)
Nail and tack plate—				
Number of establishments	11	12	(1)	(1)
Tons	50,302	68,557	86,601	97,664
Value	\$2,008,308	\$2,540,022	\$2,462,076	\$3,116,558
For sale—				
Tons	19,751	25,867	(1)	(1)
Value	\$803,352	\$990,492	(1)	(1)
For consumption—				
Tons	30,551	42,690	(1)	(1)
Assigned value	\$1,204,956	\$1,579,530	(1)	(1)
Axles, rolled or forged—				
Number of establishments	10	8	(1)	(1)
Tons	11 89,436	102,348	83,585	102,606
Value	\$3,407,271	\$3,831,344	\$2,875,829	\$4,482,937
Armor plates, gun forgings, and ordnance—				
Number of establishments	6	5	4	(1)
Tons	38,669	26,845	24,433	15,302
Value	\$19,947,893	\$10,649,079	\$10,549,620	\$7,526,479
All other rolled products—				
Tons	619,674	566,627	377,665	506,880
Value	\$37,125,670	\$39,570,061	\$16,743,727	\$19,202,606
All forged or other iron and steel products not otherwise enumerated—				
Tons	411,402	365,986	274,061	81,009
Value	\$19,165,900	\$18,740,241	\$15,684,967	\$6,665,741
B.—Partly finished rolled products for sale or for transfer to other works of same company—				
Tons	6,408,030	6,799,436	4,974,511	4,375,967
Value	\$130,674,909	\$153,493,360	\$113,552,102	\$102,262,474
Blooms, billets, and slabs—steel—				
Tons	3,991,873	4,887,796	4,823,585	4,172,286
Value	\$80,638,672	\$108,514,747	\$109,611,104	\$96,321,887
For sale—				
Tons	1,414,619	1,841,819	(1)	(1)
Value	\$29,706,572	\$43,021,988	(1)	(1)
For consumption in other works of producer—				
Tons	2,577,254	3,045,977	(1)	(1)
Assigned value	\$50,932,100	\$65,492,759	(1)	(1)
Rolled blooms and billets for forging purposes—				
For sale—				
Tons	65,939	84,383	(12)	(12)
Value	\$1,695,637	\$2,247,133	(12)	(12)

See footnotes on p. 110.

Table 71—Continued.

	STEEL WORKS AND ROLLING MILLS.			
	1911	1909	1904	1899
PRODUCTS—continued.				
I.—ROLLED, FORGED, AND OTHER CLASSIFIED IRON AND STEEL PRODUCTS—continued.				
B.—Partly finished rolled products for sale or for transfer to other works of same company—Continued.				
Sheet and tin-plate bars—				
Tons.....	2,241,735	1,652,761	(12)	(12)
Value.....	\$45,372,785	\$37,745,269	(12)	(19)
For sale—				
Tons.....	2,088,769	1,625,408	(1)	(1)
Value.....	\$42,308,755	\$37,105,869	(1)	(1)
For consumption in other works of producer—				
Tons.....	152,966	27,353	(1)	(1)
Assigned value.....	\$3,064,030	\$639,400	(1)	(1)
Muck and scrap bar—				
Tons.....	108,483	174,496	150,926	203,681
Value.....	\$2,967,815	\$4,986,211	\$3,940,998	\$5,940,587
For sale—				
Tons.....	89,379	154,431	(1)	(1)
Value.....	\$2,379,056	\$4,289,969	(1)	(1)
For consumption in other works of producer—				
Tons.....	19,104	20,065	(1)	(1)
Assigned value.....	\$588,759	\$696,242	(1)	(1)
Made and consumed in same works, tons—				
Blooms, billets, and slabs, steel.....	13,102,896	11,375,622	(1)	(1)
Hammered charcoal blooms, billets, and slabs.....	35,794			
Rolled blooms and billets for forging purposes.....	68,856	76,614	(1)	(1)
Sheet and tin-plate bars.....	723,350	441,637	(1)	(1)
Muck and scrap bar.....	958,640	1,191,828	(1)	(1)
C.—Unrolled steel (for sale or for transfer to other works of same company)—				
Tons.....	632,572	647,601	483,729	280,863
Value.....	\$46,117,166	\$42,456,174	\$24,585,446	\$17,391,038
Ingots—				
Tons.....	63,371	142,745	196,404	103,707
Value.....	\$1,383,468	\$3,593,726	\$3,985,310	\$2,781,145
For sale—				
Tons.....	29,421	30,444	(1)	(1)
Value.....	\$737,382	\$1,513,445	(1)	(1)
For consumption in other works of producer—				
Tons.....	33,950	112,301	(1)	(1)
Assigned value.....	\$646,086	\$2,080,281	(1)	(1)
Direct steel castings—				
Tons.....	569,201	504,856	287,325	177,156
Value.....	\$44,733,698	\$38,862,448	\$20,600,136	\$14,609,893
II.—SCRAP STEEL OR IRON:				
Total production, tons.....	7,041,286	6,364,647	(1)	(1)
For sale—				
Tons.....	983,216	840,118	877,177	}
Value.....	\$11,660,297	\$12,632,772			$11,079,831
For consumption in other works of producer—				
Tons.....	462,948	398,436	(1)	}
Assigned value.....	\$4,674,546	\$5,530,852			$86,305,676
Made and consumed in same works, tons.....				
	5,595,122	5,126,093	(1)	
III.—ALL OTHER STEEL OR IRON PRODUCTS, NOT ROLLED, INCLUDING VALUE ADDED TO IRON AND STEEL ROLLING-MILL PRODUCTS BY FURTHER MANUFACTURE.....				
	\$85,238,964	\$86,534,369	\$61,977,284	
IV.—ALL PRODUCTS OTHER THAN STEEL OR IRON.....				
	\$15,103,136	\$16,356,978	\$15,619,668	
V.—CUSTOM WORK AND REPAIRING.....				
	\$1,709,584	\$1,324,852		
<i>Steel production (tons).¹³</i>				
Total.....	23,403,957	23,523,199	13,670,592	10,685,000
Ingots.....				
	22,815,266	22,973,964	13,379,083	10,507,844
For consumption in works where produced.....	22,751,830	22,830,419	13,182,679	10,404,137
For transfer to other works of producer.....	33,950	112,301	196,404	103,707
For sale.....	29,486	31,244		

See footnotes on p. 110.

Table 71—Continued.

	STEEL WORKS AND ROLLING MILLS.			
	1914	1909	1904	1899
PRODUCTS—continued.				
<i>Steel production (tons) 12—Continued.</i>				
Direct castings.....	588,691	549,235	291,509	177,156
Classified according to process:—				
Open hearth, tons.....	17,081,375	14,228,377	5,820,397	3,044,356
Ingots.....	16,551,427	13,725,783	5,548,396	2,873,827
Castings.....	529,948	502,594	272,001	165,529
Basic, tons.....	16,234,626	13,221,093	5,064,592	2,153,835
Ingots.....	15,933,420	12,952,840	4,974,921	2,117,311
Castings.....	301,206	268,253	89,671	36,524
Acid, tons.....	846,749	1,007,284	755,805	890,521
Ingots.....	618,007	772,943	573,475	761,516
Castings.....	228,742	234,341	182,330	129,005
Bessemer, tons.....	6,219,304	9,180,133	7,768,915	7,532,028
Ingots.....	6,175,867	9,145,668	7,754,488	7,528,267
Castings.....	43,437	34,465	14,427	3,761
Crucible, tons.....	81,685	100,263	80,059	104,393
Ingots.....	72,765	90,242	76,199	100,750
Castings.....	8,920	10,021	3,860	3,643
Electric and all other, tons.....	21,593	14,426	1,221	4,223
Ingots.....	15,207	12,271	.....	.....
Castings.....	6,386	2,155	1,221	4,223
Duplex steel, basic open-hearth, made from metal partly purified in Bessemer converters (included above).....	401,621	522,682	(1)	(1)
Alloy steel (included above), tons.....	305,956	158,216	(1)	(1)
Number of establishments.....	57	36	(1)	(1)
Open hearth.....	264,100	100,335	(1)	(1)
Basic.....	230,408	86,242	(1)	(1)
Acid.....	33,692	14,093	(1)	(1)
Bessemer.....	9,146	45,324	(1)	(1)
Crucible and electric.....	32,710	12,557	(1)	(1)
Ingots.....	294,128	151,300	(1)	(1)
Castings.....	11,828	6,916	(1)	(1)
By kind of alloy—				
Nickel-chrome.....	102,562	26,929	(1)	(1)
Nickel.....	69,955	37,607	(1)	(1)
Chrome.....	23,258	11,269	(1)	(1)
Nickel-chrome-vanadium.....	14,123	9,280	(1)	(1)
Chrome-vanadium.....	9,280	4,406	(1)	(1)
Titanium.....	8,477	40,477	(1)	(1)
Tungsten.....	4,204	1,697	(1)	(1)
Copper.....	2,759	.....	(1)	(1)
Vanadium.....	2,565	8,039	(1)	(1)
Chrome-tungsten-vanadium.....	2,334	(1)	(1)	(1)
Silicon-manganese.....	2,240	(1)	(1)	(1)
Chrome-tungsten.....	1,546	600	(1)	(1)
Chrome-nickel-titanium.....	1,106	(1)	(1)	(1)
Miscellaneous.....	233	.....	(1)	(1)
Unclassified.....	61,314	17,912	(1)	(1)
<i>Manufactures from iron and steel rolling-mill products largely made in mill producing; value of that made in rolling mills previously included.</i>				
Wire departments of rolling mills, products, total value.....	\$74,972,923	\$78,894,036	.....	.....
Steel and iron wire and manufactures thereof.....	67,353,214	71,624,024	\$67,551,443	\$47,728,784
All other products.....	7,619,709	7,270,012	(1)	(1)
Pipes and tubes, not including cast pipe:—				
Made in rolling mills—				
Wrought welded—				
Number of establishments.....	13	15	14	(1)
Tons.....	1,130,652	1,314,771	849,047	(1)
Value.....	\$55,461,650	\$68,471,573	\$43,985,728	(1)
Seamless, not finished or cold drawn—				
Number of establishments.....	5	4	(1)	(1)
Tons.....	64,765	54,273	.....	.....
Value.....	\$5,821,467	\$5,650,739	.....	.....
All other, clinched, riveted, etc.—				
Tons.....	17,345	17,561	\$2,290,234	(1)
Value.....	\$834,209	\$986,699	.....	.....
Not made in rolling mills—				
Number of establishments.....	36	28	27	19
Value of all products.....	\$37,655,229	\$30,886,270	\$17,400,912	\$21,292,043
Bolts, nuts, rivets, washers, etc.:—				
Made in rolling mills—				
Number of establishments.....	28	35	30	(1)
Kegs (200 pounds).....	2,091,533	144,471,985	143,105,827	(1)
Value.....	\$9,682,385	\$20,538,858	\$13,854,635	(1)
Not made in rolling mills—				
Number of establishments.....	102	108	88	72
Value of all products.....	\$23,403,405	\$24,484,907	\$14,687,108	\$13,978,382

See footnotes on p. 110.

Table 71—Continued.

	STEEL WORKS AND ROLLING MILLS.			
	1914	1909	1904	1899
PRODUCTS—continued.				
<i>Manufactures from iron and steel rolling-mill products largely made in mill producing; value of that made in rolling mills previously included—</i>				
Continued.				
Railroad spikes—				
Made in rolling mills—				
Number of establishments.....	15	(1)	(1)	(1)
Kegs (200 pounds).....	1,386,177	(15)	(15)	(1)
Value.....	\$4,201,388	(15)	(15)	(1)
Nails and spikes:				
Made in rolling mills—				
Cut—				
Number of establishments.....	10	12	17	(1)
Kegs (200 pounds).....	740,436	1,009,319	1,311,549	1,658,443
Value.....	\$1,469,780	\$2,218,207	\$2,394,108	\$3,292,063
Forged nails and spikes (other than railroad spikes)—				
Number of establishments.....	5	(1)	(1)	(1)
Kegs (100 pounds).....	45,936	(15)	(15)	(1)
Value.....	\$92,783	(15)	(15)	(1)
All other, including tacks (other than wire tacks)—				
Kegs (100 pounds).....	29,916	(1)	(1)	(1)
Value.....	\$62,161	(1)	(1)	(1)
Wire nails and spikes, made in rolling mills and wire drawing mills—				
Kegs (100 pounds).....	12,886,634	13,926,861	9,061,512	16 4,603,010
Value.....	\$23,368,633	\$27,575,774	\$17,495,362	\$12,445,096
Wire brads, tacks, and staples, made in rolling mills and wire drawing mills—				
Tons.....	33,335	28,125	(1)	(1)
Value.....	\$1,324,948	\$1,324,170	(1)	(1)
Not made in rolling mills (nails and spikes)—				
Number of establishments.....	64	57	76	102
Value of all products.....	\$7,198,600	\$8,191,820	\$8,922,896	\$14,777,299
Establishments whose chief product is—				
Cut nails.....	\$1,735,979	(1)	(1)	(1)
Wire nails.....	\$1,334,432			
All others, including tacks.....	\$4,128,189			
Horse and mule shoes:				
Made in rolling mills—				
Number of establishments.....	11	11	11	(1)
Kegs (200 pounds).....	1,015,230	996,333	768,253	(1)
Value.....	\$7,122,462	\$7,202,897	\$5,483,137	(1)
Not made in rolling mills—				
Number of establishments.....	22	19	8	7
Value of all products.....	\$1,785,993	\$1,014,576	\$798,981	\$497,619
Springs, not including wire springs:				
Made in rolling mills—				
Number of establishments.....	7	6	9	(1)
Tons.....	11,889	6,191	22,022	(1)
Value.....	\$872,863	\$374,924	\$1,708,632	(1)
Not made in rolling mills—				
Number of establishments.....	84	54	52	48
Value of all products.....	\$11,594,992	\$9,005,362	\$5,740,836	\$5,690,499
Cast-iron pipe, car and locomotive wheels, gray iron, malleable iron, and semisteel castings, and all castings other than steel:				
Tons.....	116,536	128,670	(1)	(1)
Value.....	\$5,314,946	\$5,520,399	(1)	(1)
Galvanized plates or sheets:				
Number of establishments.....	26	22	(1)	(1)
Tons.....	971,189	431,658	(1)	(1)
Value.....	\$42,862,394	\$25,912,056	(1)	(1)
Stamped ware, made in rolling mills:				
Tons.....	36,844	24,612	(1)	(1)
Value.....	\$3,205,627	\$2,296,707	\$292,923	(1)
Steel cars, machinery, switches, frogs, etc.	\$7,342,690	\$7,720,178	(1)	(1)
Shovels, spades, scoops, etc.	\$524,872	\$540,321	\$410,500	(1)
STEEL-MAKING EQUIPMENT. ¹⁷				
Steel plants, number of active establishments...	217	189	198	152
Steel furnaces and converters:				
Number.....	1,242	1,118	741	557
Daily capacity, tons of steel, double turn.....	148,023	112,410	78,238	57,240
Open-hearth furnaces:				
Number of establishments.....	140	129	110	82
Number of open-hearth furnaces.....	864	706	489	307

See footnotes on p. 110.

Table 71—Continued.	STEEL WORKS AND ROLLING MILLS.			
	1914	1909	1904	1899
STEEL-MAKING EQUIPMENT ¹⁷ —continued.				
Open-hearth furnaces—Continued.				
Capacity per heat—				
Less than 50 tons.....	346	367	(1)	(1)
50 tons but less than 60 tons.....	189	137	(1)	(1)
60 tons but less than 70 tons.....	127	105	(1)	(1)
70 tons but less than 80 tons.....	92	51	(1)	(1)
80 tons but less than 90 tons.....	43	44	(1)	(1)
90 tons but less than 100 tons.....	14	.....	(1)	(1)
100 tons and over.....	53	2	(1)	(1)
Daily capacity, tons of steel, double turn.....	93,630	62,161	34,398	18,245
Basic—				
Number of establishments.....	99	82	64	(1)
Number.....	706	553	341	168
Daily capacity, tons of steel, double turn.....	85,471	55,392	26,932	12,151
Acid—				
Number of establishments.....	66	70	65	(1)
Number.....	158	153	148	139
Daily capacity, tons of steel, double turn.....	8,179	6,769	7,466	6,094
Converters:				
Number of establishments.....	55	54	44	42
Number of converters.....	115	112	92	91
Daily capacity, tons of steel, double turn.....	53,106	49,005	43,123	38,420
Bessemer—				
Number.....	64	69	61	(1)
Daily capacity, tons of steel, double turn.....	52,480	48,377	42,675	(1)
Tropenas—				
Number.....	30	24	13	(1)
Daily capacity, tons of steel, double turn.....	354	348	95	(1)
Other kinds of converters—				
Number.....	21	19	18	(1)
Daily capacity, tons of steel, double turn.....	272	280	353	(1)
Converters used for partly purifying metal for open-hearth furnaces—				
Number.....	12	5	.....	.....
Daily capacity, tons of steel, double turn.....	12,600	1,750	.....	.....
Crucible steel furnaces:				
Number of establishments.....	62	67	44	37
Number of furnaces.....	241	278	160	159
Number of pots that can be used at a heat.....	3,916	4,074	2,723	2,528
Daily capacity, tons of steel, double turn.....	886	886	717	575
Electric-steel furnaces:				
Number of establishments.....	15	4	(1)	(1)
Number.....	15	4	(1)	(1)
Daily capacity, tons of steel.....	438	285	(1)	(1)
Other:				
Number.....	7	18	(1)	(1)
Daily capacity, tons of steel.....	4	73	(1)	(1)
Metal mixers:				
Number.....	69	59	(1)	(1)
Capacity.....	20,885	14,343	(1)	(1)

¹ Figures not available.

² In addition, steel castings and rolled steel valued at \$2,831,964 were produced by 13 establishments in 1914; to the value of \$6,627,039 by 29 establishments in 1909; and to the value of \$347,264 in 1904 by establishments not classified as steelworks and rolling mills.

³ Includes 27,286 tons of alloy steel rails; titanium steel, 7,395 tons; nickel-chrome steel, 4,174 tons; manganese steel, 3,864 tons; and kinds not specified, 11,853 tons.

⁴ Includes 900 tons of iron rails, valued at \$20,700 in 1904; and 880 tons, valued at \$31,180 in 1899.

⁵ Includes 1,522,862 tons basic open-hearth, 144 tons acid open-hearth, and 178 tons of electric-steel rails.

⁶ Includes iron shapes as follows (balance steel): 1914, 6,344 tons; 1909, 21,330 tons; 1904, 4,475 tons; 1899, 27,061 tons.

⁷ Plates 16 gage and thicker.

⁸ Sheets 17 gage and thinner.

⁹ Includes hoops, bands, and cotton ties.

¹⁰ Included with skelp.

¹¹ Includes 1,160 tons of axles other than car and locomotive (automobile, carriage, etc.), valued at \$26,069.

¹² Included above with blooms, billets, and slabs.

¹³ Includes steel made by establishments not classified as steelworks and rolling mills: 1914, 20,483 tons;

1909, 49,841 tons; 1904, 4,184 tons.

¹⁴ Includes forged spikes.

¹⁵ Included with "bolts, nuts, rivets, washers, etc."

¹⁶ Made in rolling mills.

¹⁷ Includes establishments classified under other industries and producing steel as a subsidiary product

The general statistics for the industry for the censuses from 1869 to 1914, inclusive, are given in Table 223 (p. 641). As already stated, the figures for 1899 in this table represent the combined business of all establishments having rolling mills, notwith-

standing the fact that some of these establishments were also classified in the general tabulations under more specific headings according to the principal finished product manufactured—for example, under "wire" or "iron and steel wrought pipe." Consequently the figures for 1889 should be roughly comparable with those for subsequent censuses, although the comparability of all of the statistics is affected more or less by changes in the relative extent to which certain finished products are made in rolling mills and in separate establishments, respectively.

IRON AND STEEL—BOLTS, NUTS, WASHERS, AND RIVETS, NOT MADE IN STEEL WORKS OR ROLLING MILLS.

Establishments included under this classification manufacture the articles indicated by the title, including carriage and truck bolts; couplings; foundation and machine bolts; plow, stove, and tire bolts; expansion and toggle bolts; lock and axle nuts, cold or hot pressed; bifurcated rivets and tubular nuts for boiler shop and structural purposes; lock washers and riveting and other burs; spring and other cot-ers; staples; gaskets; floor caps and similar articles. The large production of similar articles by steel works and rolling mills is not included in the statistics for the later years—1914, 1909, 1904, and 1899—but it is possible that in 1889 some establishments were classed under this heading which at later censuses would have been classed as steel works and rolling mills. Statistics for the industry for the census years from 1859 to 1914, inclusive, are given in Table 223.

In addition to the value of products shown in Table 223, bolts, nuts, washers, and rivets valued at \$9,682,385 were made in steel works and rolling mills in 1914, and similar products to the value of \$1,062,080 were made by establishments engaged primarily in the manufacture of other products, principally screws, nails and spikes, and machine-shop products.

In 1909 steel works and rolling mills reported bolts, nuts, washers, and rivets to the value of \$20,538,858, and establishments assigned to other classifications reported similar products to the value of \$1,257,179.

IRON AND STEEL—CAST-IRON PIPE.

Establishments included in this industry manufacture principally cast-iron gas, water, soil, and plumbers' pipe and fittings. There is little relation between this industry and the manufacture of wrought-iron and steel pipe.

Prior to the census of 1909 the statistics were included in those for foundry and machine-shop products, so that the general statistics presented in Table 223 are for 1909 and 1914 only. Table 72 gives the quantity and value of the several classes designated as cast-iron pipe and fittings in 1914.

Table 72	CAST-IRON PIPE AND FITTINGS. ¹	
	Quantity (tons, 2,000 pounds).	Value.
Total		\$28,102,607
Cast-iron pipe and fittings.....	1,120,721	25,979,192
Gas and water pipe.....	909,069	19,805,484
Bell and spigot.....	828,905	16,669,533
Flanged.....	27,289	706,531
Culvert.....	11,011	246,527
Fittings.....	41,864	2,182,893
Soil and plumbers' pipe and fittings.....	211,652	6,173,708
All other castings.....	13,581	681,737
All other products.....		1,441,678

¹ Includes 54,718 tons of cast-iron pipe and fittings valued at \$1,443,242 made by nine establishments engaged primarily in other lines of manufacture.

IRON AND STEEL—DOORS AND SHUTTERS.

Fireproof doors and shutters of iron and steel are the principal products manufactured by the establishments placed under this classification. They include, among other products, elevator and vault doors, automatic doors for mines, and rolling steel shutters. Metal and metal-covered window frames, gratings, theater curtains, sash, and trim are also manufactured. The general statistics for the industry are presented in Table 223 for the census years from 1879 to 1914, inclusive.

Establishments engaged primarily in the manufacture of copper, tin, and sheet-iron work, structural ironwork, and foundry and machine-shop products, reported for 1914 iron and steel doors and shutters to the value of \$189,809, and to the value of \$93,855 in 1909.

IRON AND STEEL—FORGINGS, NOT MADE IN STEEL WORKS OR ROLLING MILLS.

The principal products of the establishments included under this classification consist of light and heavy drop and steam-hammer forgings, rough and finished. The products embrace parts for automobiles, bicycles, agricultural implements, carriages, engines, and other machinery, and for marine work; railway forgings, such as axles, car wheels, frogs, switches, steel ties, and trolley poles; and various complete articles and tools, such as anchors, anvils, drop-forged chisels, picks, vises, wrenches, and posthole augers. Among the specific products reported are steel chains, hand and machine welded; trace chains for harness, and chains for ships, dredges, cranes, and steam shovels. General statistics from 1879 to 1914 are given in Table 223 (p. 642).

In addition to the products whose value is shown in the table, iron and steel forgings to the value of \$559,038 in 1914 and of \$1,094,244 in 1909 were reported by establishments engaged primarily in the manufacture of other products, principally foundry and machine-shop products, and forgings to the value of \$19,165,900 in 1914 and of \$18,740,241 in 1909 were reported by steel works and rolling mills, the latter item not including gun forgings, ordnance, or forged axles.

HORSESHOES, NOT MADE IN STEEL WORKS OR ROLLING MILLS.

The establishments included under this classification manufacture horseshoes of various types. These horseshoes include fiber and other cushioned kinds. Horseshoe calks and toe weights are also manufactured, frequently as the sole product of an establishment. The production of horseshoes by steel works and rolling mills is not included in the totals given in Table 223. The industry was first shown separately at the census of 1859, but was included under other classifications in 1869 and 1879. (See Table 223.)

Horse and mule shoes to the value of \$7,122,462 in 1914, and of \$7,202,897 in 1909 were made by steel works and rolling mills, and a small additional quantity, to the value of \$9,114 in 1914, by establishments assigned to other industries.

After 1889 horseshoes were produced in increasingly large quantities in rolling mills. This accounts for the decrease from 1889 to 1899 in the products of independent establishments as shown in Table 223.

IRON AND STEEL—NAILS AND SPIKES, CUT AND WROUGHT, INCLUDING WIRE NAILS, NOT MADE IN STEEL WORKS OR ROLLING MILLS.

Establishments included in this classification manufacture principally cut, wrought, and wire nails of various kinds, including shoe nails and tacks; horseshoe nails; carpet, gimp, upholstery, and double-pointed tacks; ship and other spikes; corrugated steel fasteners; poultry-netting staples, self-clenching nails, staples, and hooks. The figures for the industry at most censuses do not cover the large production of nails and spikes by steel works and rolling mills, nor the large output of wire nails made by plants producing wire, except at the censuses of 1869 and 1889. The statistics for this industry for 1869 and 1889, as already stated, are on an entirely different basis from those for other censuses. In recent years there has been an increasing tendency toward this class of business being absorbed by rolling and wire-drawing mills. The 1914 statistics, which present separate data for "cut nails," "wire nails," and "all other, including tacks," are shown in Table 67 (p. 96). The general statistics from 1849 to 1914, inclusive, are given in Table 223 (p. 643).

In 1914 cut nails to the value of \$1,469,780 were reported by steel works and rolling mills and to the value of \$16,415 by the other group of nail manufacturers, while brass and bronze manufacturers reported cut nails to the value of \$40,262. Wire nails to the value of \$304,841 were reported by establishments assigned to other classifications, principally makers of bolts, nuts, washers, and rivets, while wire mills and the wire departments of rolling mills reported their manufacture to the value of \$23,368,633. Railroad spikes to the value of \$6,011 were reported by manufacturers of bolts, nuts, washers, and rivets, and to the value of \$4,201,388 by steel works and rolling mills.

SPRINGS, STEEL, CAR AND CARRIAGE, NOT MADE IN STEEL WORKS OR ROLLING MILLS.

The principal products of establishments included in this classification are steel springs, flat, coil, and elliptical, for railway equipment, carriages, wagons, and automobiles. Some steel, brass, and phosphor-bronze springs intended for other uses were also among the products reported. Statistics for each census beginning with 1859, when they were first presented, are given in Table 223 (p. 692).

Some establishments make a specialty of springs to be used for certain purposes, and separate figures are given in Table 67 for establishments engaged primarily in the

manufacture of each of the four classes of springs. Carriage and wagon springs to the value of \$154,727 were reported in 1914 by makers of automobile springs, and to the value of \$497,514 by establishments assigned to other classifications, principally carriage and wagon materials. Railway springs to the value of \$872,863 were made in steel works and rolling mills. Automobile springs to the value of \$107,833 were reported by manufacturers of carriage and other springs, and to the value of \$662,360 by establishments engaged primarily in the manufacture of carriage and wagon materials, etc. Machinery and other springs to the value of \$26,277 were reported by makers of automobile springs and to the value of \$244,480 by machine shops and hardware manufacturers.

STRUCTURAL IRONWORK, NOT MADE IN STEEL WORKS OR ROLLING MILLS.

The establishments assigned to this industry manufacture all kinds of iron and steel structural and ornamental work for bridges, buildings, and subways. Among the products are balconies, bank fixtures, beams, cellar doors, coal chutes, columns, crane girders, elevator inclosures, expanded metal for lathing and concrete work, fences, fire escapes, fireproof moving-picture booths, fireproof porches, gas holders, gratings, girders, elevator cars, iron railings, portable steel buildings, lintels, grilles, vestibule doors, purifiers, roof trusses, sand screens, stairs, steel floor plates, steel reinforcement for concrete, steel trusses, tanks, tree boxes, trellises, and water towers. Statistics for each census from 1879 to 1914, inclusive, are presented in Table 223 (p. 696).

Similar articles were made in 1914 to the value of \$3,762,054 by establishments assigned to other classifications, such as foundry and machine-shop products, hardware, windmills, plumbers' supplies, planing mills, brass, bronze, and copper products, wirework, and others.

IRON AND STEEL—WROUGHT PIPE.

The principal products of the establishments included in this classification are wrought and wrought-welded pipe; steel-riveted pipe; lock-bar pipe; spiral pipe and fittings; riveted well casings; seamless cold-drawn steel tubes; umbrella rods; tubular poles for electric railroads and for electric lighting, telegraph, and signal systems; and galvanized-iron pipes for heating and ventilating. Wrought-iron pipe is largely made from skelp. The establishments involved do not include those which roll skelp iron and steel, and manufacture pipe therefrom in one and the same establishment. These are classified under rolling mills.

The figures for 1889 are not comparable, because pipe factories were then classified according to the product of chief value and included all mills making wrought pipe. The general statistics for the industry are shown in Table 223 (p. 643) for 1869 to 1914, inclusive.

Wrought iron and steel pipe and tubes to the value of \$62,117,326 in 1914, as compared with \$75,109,011 in 1909, were made by steel works and rolling mills, and to the value of \$75,629 in 1914 by establishments assigned to other classifications.

CASH REGISTERS AND CALCULATING MACHINES.

The principal products manufactured by establishments included under this classification are cash registers and similar devices and machines, adding machines and adding attachments to typewriters, fare registers for railway cars, calculating machines, rotary wage tables, and slide rules. Statistics for the census years from 1889 to 1914, inclusive, are presented in Table 223. The statistics for 1914, relating to the manufacture of (a) adding machines, (b) cash registers and parts, and (c) all other—comprising money changers, ticket-counting machines, recording devices for vehicles, fare boxes, multiplying machines, etc.—are shown in Table 67 (p. 96).

Establishments engaged primarily in other industries reported the manufacture of cash registers and calculating machines in 1914 to the value of \$99,765. In 1909 similar machines to the value of \$179,696 were reported by manufacturers in other industries, principally by those making typewriters and supplies.

ENGINES, STEAM, GAS, AND WATER.

This is the first census to show separate statistics for "engines, steam, gas, and water." Previous to 1914 they were included with the statistics for foundry and machine-shop products. The industry includes those establishments that manufacture steam engines and steam turbines, internal-combustion engines, and water powers—(wheels, motors, and turbines). The engines are classified according to type or use—stationary, marine, traction, automobile, aeroplane, motorcycle, etc. The statistics do not include locomotives, as they appear under a separate classification.

In 1914 there were 446 establishments engaged in the manufacture of engines as their chief product, with products in the aggregate valued at \$72,121,112, and 363 establishments that reported engines as a subsidiary product. The engines, as reported by all establishments, including shipbuilders, were valued at \$88,382,067, and of 6,553,956 horsepower capacity. The figures, however, do not represent the entire engine industry, for many establishments manufacturing engines as parts of machines did not segregate the engine component. Table 73 gives the number of establishments manufacturing each type of engine used, the indicated or rated horsepower capacity, as well as the value of the various kinds of engines, and the number of engines arranged according to horsepower capacity.

Table 73 ENGINES—STEAM, GAS, AND WATER (NOT INCLUDING LOCOMOTIVES).

CLASS.	Number, horsepower, and value.	CLASS.	Number, horsepower, and value.
Total horsepower of engines manufactured—indicated or rated capacity.....	6,553,956	ENGINES—continued.	
Total value.....	\$88,382,067	Internal-combustion, total—Contd.	
ENGINES.		Stationary and portable ¹ —	
Steam, total:		Horsepower.....	1,144,991
Number of establishments manufacturing.....	243	Value.....	\$25,606,905
Horsepower.....	2,365,483	Automobile ⁴ —	
Value.....	\$30,498,638	Horsepower.....	1,916,293
Stationary and portable (other than turbines)—		Value.....	\$11,622,961
Horsepower.....	805,682	Marine—	
Value.....	\$11,821,964	Horsepower.....	339,638
Marine, other than turbines—		Value.....	\$7,570,245
Horsepower.....	73,679	Traction ⁵ —	
Value.....	\$1,299,971	Horsepower.....	250,860
Turbines ¹ —		Value.....	\$3,936,687
Horsepower.....	1,312,718	All other (aeroplane, motorcycle, ⁶ etc.)—	
Value.....	\$8,662,174	Horsepower.....	28,300
Traction ² —		Value.....	\$513,623
Horsepower.....	173,404	Water wheels, motors, and turbines, total:	
Value.....	\$8,714,529	Number of establishments manufacturing.....	50
Internal-combustion, total:		Horsepower.....	508,391
Number of establishments manufacturing.....	549	Value.....	\$3,633,008
Horsepower.....	3,680,082		
Value.....	\$54,250,421		

NUMBER OF ENGINES, BY HORSEPOWER GROUPS.

CLASS.	NUMBER OF ENGINES, BY HORSEPOWER GROUPS.						
	Total.	Under 10.	10 but under 50.	50 but under 100.	100 but under 500.	500 but under 1,000.	1,000 and over.
Steam engines.....	19,280	3,061	8,981	4,849	1,890	266	233
Stationary and portable, other than turbines.....	12,404	2,449	5,335	2,961	1,426	191	42
Marine, other than turbines.....	953	447	362	40	63	21	20
Turbines ¹	1,307	125	288	280	389	54	171
Traction ²	4,616	40	2,996	1,568	12		
Internal-combustion.....	380,007	271,764	102,009	5,672	505	42	15
Stationary ³	250,722	228,967	20,424	925	369	24	13
Automobile ⁴	71,745	4,004	64,706	3,035			
Marine.....	44,157	35,952	7,657	417	112	17	2
Traction ⁵	10,534	141	9,204	1,171	17	1	
All other (aeroplane, motorcycle, ⁶ etc.).....	2,849	2,700	18	124	7		
Water wheels, motors, and turbines.....	19,239	18,434	166	356	181	51	51

¹ Includes 11 marine steam turbines of 121,000 horsepower.

² Includes 9 automobile steam engines of 294 horsepower; value, \$4,750.

³ Includes 50 fire engines of 1,200 horsepower.

⁴ Not including those made by automobile manufacturers; about 568,000 gasoline automobiles were manufactured in 1914.

⁵ Includes 15 gas-driven locomotives.

⁶ Not including those made by motorcycle manufacturers; about 63,000 motorcycles were made in 1914.

FIREARMS.

The principal products of establishments under this classification are rifles, revolvers, shotguns, pistols, and gun and pistol stocks. The statistics for this industry for the census years from 1849 to 1914, inclusive, are given in Table 223.

The decrease between 1879 and 1889 is due to changes in classification from "firearms" to "ammunition," as large concerns make great quantities of both kinds of products. In addition to the products covered by the table, firearms to the value of \$14,453 in 1914 were reported by establishments assigned to other industries.

FOUNDRY AND MACHINE-SHOP PRODUCTS.

The establishments assigned to this industry make a greater variety of products than those of any other industry among those distinguished in the census reports; yet, despite the comprehensiveness of the classification, no sharp line can be drawn between it and some of the others. A foundry is ordinarily defined as an establishment casting metal into various shapes, and a machine shop as an establishment using machine tools; that is, tools capable of cutting and shaping metals, particularly iron and steel. Foundry and machine-shop processes are necessarily employed in connection with the manufacture of an enormous variety of products. Many establishments placed under other census classifications use these processes, either mainly or largely, in the manufacture of their finished products. This is true, for example, in the automobile industry and in the agricultural-implement industry, and in the manufacture of electrical machinery, apparatus, and supplies.

In many cases, however, establishments using foundry and machine-shop processes specialize, so that practically all of their output consists of some well-defined class of products. Where this is the case, and where the establishments thus specializing make all or the greater part of the class of products in question, the Census Bureau places them in a specific industry class, designated usually according to the nature or use of the product. On the other hand, there are many foundries and machine shops which make a great variety of products. Again, while there are certain establishments using foundry and machine-shop processes which make exclusively a well-defined class of articles, large quantities of similar articles are made by other establishments which also turn out quite different products. It is necessary, therefore, in order to avoid excessive overlapping in industry classifications, to establish a very broad group designated as "foundry and machine-shop products," which will take in, so far as possible, those branches of industry which use foundry and machine-shop processes, but which can not be clearly segregated. It is evident, however, that notwithstanding the comprehensiveness of the general classification "foundry and machine-shop products," as constituted at the present census, there is a great deal of overlapping between it and other industries.

The principal products reported on the manufacturers' schedule by establishments assigned to the foundry and machine-shop industry, are given in the list following, in which the attempt has been made to group the products according to the character of the industry in which they are utilized. Articles marked with an asterisk are some of those that are made more extensively by establishments assigned to other industries than by establishments assigned to the foundry and machine-shop industry. Notwithstanding the great variety of articles named, the list is only partial and many products of importance do not appear at all, simply because they were not specifically mentioned on the schedule.

Products intended for general use.

Artesian-well tools.
Balers, steel.
Boilers, horizontal and vertical.
*Bolts.
Brackets for street signs.
Bronze and steel, interior trim.
Buckets.
Buoys.
*Cableways.
Carousals or merry-go-rounds.
Cars, industrial.
Cash and package carriers.
Cash-carrying devices.
Centrifugal machines.
Chain blocks.
Chutes.
Clamps.
Clothes driers.
Culverts, city.
Dam and gate machinery.
Dippers and dipper teeth.
Dish-washing machinery.
*Dry batteries.
Dumb-waiters.

Elevators, electric, hydraulic, and steam.
*Elevator cables.
Elevator gates.
Extensible trench braces.
Fasteners, corrugated joint.
Filters.
*Filter presses.
*Fire escapes.
Flushing siphons.
Fuel economizers.
Furnaces, soldering.
Galvanized troughs.
Garbage burners.
Garbage receptacles.
*Gas regulators and burners.
Gates, automatic safety.
Gopher traps.
Grate bars.
Grates, fireplace.
Grates, wall.
Hangers, sliding-door.
Hardware specialties.
Heaters.

Heat regulators.
Heating torches.
Horse-clipping machines.
*Hose, metal.
Hydrants.
Hydraulic jacks.
Ice breakers.
Kindling-wood machinery.
Land levelers.
Land rollers.
Laundry machinery.
Lawn mowers.
Lawn sprinklers.
Letter boxes.
Letter-canceling machines.
Lifting jacks.
Lightning rods.
*Locks.
*Locks, elevator.
Metal weather strips.
*Meters, water.
*Nuts.
*Organs for carousals.
*Pipe.

Products intended for general use—Continued.

*Pipe couplings, rubber-jointed.	Saw clamps.	Tramways, overhead.
Pipe hangers.	*Saws.	Trimmers, tree and lawn.
Plumb bobs.	*Scales.	Troughs, iron.
*Plumbers' supplies.	Scenic railways.	*Trucks.
Post-marking and check-indorsing machinery.	*Scoops.	Tubes, pneumatic.
*Projectiles.	Screens, coal.	Tubes, speaking.
Projecting apparatus for moving pictures.	Screw jacks.	Turnbuckles.
Pulleys.	Shooting galleries.	Vacuum cleaners.
*Pumps, automobile.	Stamp affixers.	Vending machines.
*Pumps, hand.	Steam rollers.	Ventilating fans and stacks.
Purifying apparatus.	Steam shovels.	Ventilators, automatic fresh-air inlets for sewers.
*Pushcarts.	Steel wool.	*Vises.
*Railroad frogs, crossing switches, etc.	Sterilizing and disinfecting apparatus.	*Washers, cast-iron.
Regulators, damper.	*Stove castings.	Water-distilling apparatus.
*Rivets.	Swings, steel.	Water towers.
Road graders.	Tackle blocks, wood and steel.	Waterworks appliances.
Rollers, awning, spring.	Tanks, galvanized.	*Wheelbarrows, steel.
Sash weights.	Tanks, iron.	*Window guards.
Savings banks, deed and bond boxes.	Tanks, steel.	Wireless apparatus.
	Tape moisteners.	*Wire staples.
	Telephone arms and tablets.	*Wrenches.

Machines and articles for use in the manufacture of food and kindred products.

Almond hullers.	Corn poppers.	Millstones.
Asparagus bunchers.	Cracker cutters.	Mustard-grinding mills.
Bakers' ovens.	*Dairy machinery.	Olive graders.
Bakery machinery.	Dough breakers.	Peanut roasters.
Barley-pearling machinery.	Dough mixers.	Pickle-sorting machinery.
Biscuit machinery.	Dough troughs.	Pie-making machinery.
Bread cutters.	Evaporators.	Pie markers.
Bread racks.	Feed mills.	Potato peelers.
Bread-wrapping machinery.	Flour-mill machinery.	Refrigerating machinery.
Burs and bur machinery.	Food-chopping machinery.	Rice-milling machinery.
Cake machinery.	Fruit-clearing machinery.	Sausage stuffers.
Candy machinery.	Fruit-drying machinery.	Sifting outfits.
Candy-wrapping machinery.	Fruit-washing machinery.	Sirup gauges.
Cannery retorts.	Gristmill machinery.	Steamers.
Carton sealers.	Ice-cream freezers.	Sterilizers.
Chocolate machinery and mills.	Ice-cream makers' tools.	Sugar machinery.
Cider presses.	Ice machinery and equipment.	Sugar-mill machinery.
Cocoa presses.	Kios cutters.	Vacuum pans.
Coconut-cutting machinery.	Macaroni machinery.	Wine presses.
Coffee grinders.	Machinery for grinding spices.	Yeast machinery.
Coffee-roasting machinery.	Machines for making ice-cream cones.	
Coffee separators.		
*Confectioners' tools.		

Machines for use in the textile industries.

Bleaching, dyeing, printing, and finishing machinery.	Hair pickers.	Quillers.
Bobbin holders.	Hat blocks.	Reels.
Braiding machinery.	Hat-brim cutters.	Rollers for watering ribbon.
Card clothing machinery.	Hat lathes.	Ruching machinery.
*Carpet-sewing machinery.	Heddle frames.	Ruffling machinery.
Cloth-cutting machinery (electric and other).	Hemp machinery.	Set frame attachments.
Cloth-laying machinery.	Knitting machinery, hosiery, underwear and other knit goods.	Shuttles.
Cloth sponging machinery.	Looms.	Shuttle irons.
Cloth stretchers and winders.	Looping machinery.	Slitting and rewinding machinery.
Corset and fabric machinery.	Machine wool combs.	Spindles, flyers, and spoolers.
Cotton-finishing machinery.	Mattress-machine tables.	Spinner and twister rings.
Crimping machinery.	*Multiple needle sewing machines and parts.	Textile machinery.
Cylinders and dials for knitting machinery.	Pinking machinery.	Thread protectors.
Dobby chains.	Plaiting machinery (accordion, side and box).	Twine and rope machinery.
Embroidery machines.	Pressing machinery.	Warpers.
Fluting machines.		Weaving machinery.
		Worsted machinery.

Machines and articles for use in the manufacture of iron and steel and their products.

Annealing boxes.	Machine keys.	*Steam specialties.
Automatic screw machinery.	Machine vises and tables.	*Steel, bar.
Axle cutters.	Metal-working machinery.	*Steel, cold-drawn.
Barbed wire machinery.	Milling machines (vertical and horizontal).	Tack machinery.
Bending machinery.	*Nickel-plated parts for stoves.	Taps.
Blast furnaces.	Oxy-acetylene welding and cutting machines.	Thread protectors for steam and water mining tools.
Blowers.	Pig-casting machines.	T tools, machine.
*Bolts, expansion.	Pipe threading and cutting off machinery.	T tools, small.
Boring mills.	Presses, drop.	Tube-works machinery.
Bosh plates.	Presses, radial drill.	Turning mills.
Chilling machinery.	Reamers.	Turret lathes.
Dies and rings for threading pipe.	Rethreading pipe.	Tuyeres.
Drilling machinery.	Riveters.	Valves, engine stop.
File machinery.	Rolls, chilled.	Wire-bending machines.
Forging presses.	Rolling-mill and steel works machinery.	Wire-drawing machinery.
Fusible plugs.	*Springs for all kinds of machinery.	Wire machinery parts.
Gear wheels.		Wire nail machinery.
Hammers, drop.		Wood-screw machinery.
Ingot moulds.		
Knife polishing machinery.		
Machine gears.		

Machines for use in the manufacture of lumber and timber products.

Band-saw machinery. Cooperage machinery. Cork-cutting machinery. Heading machines. Jointers. Knives for woodworking machines.	Logging machinery. Nail keg stave machinery. Planing machines. Saw benches. Saw-guard machinery. Sawmills.	Shingle machines. Veneer basket machinery. Wood-boring machines. *Wood saws. Woodturning lathes. Woodworking machinery.
--	---	--

Machines for use in the manufacture of leather and its finished products.

Eyeletting machinery. *Hardware for sporting shoes. Leather belting machinery. Leather machinery.	Perforating machinery. Punching machinery. Shoe machinery.	Shoe racks. Shoe repairing machinery. Vamp folding machinery.
--	--	---

Machines for use in the manufacture of paper and of articles from paper, and in the printing and publishing and allied industries.

Automatic paper feeders. Bag machines. Bank and check indorsing and stamping machinery. Blue print copying machinery. Bookbinding machinery. Book gathering machinery. Cigarette paper machinery. Confetti machinery. Creasing presses. Cutting presses. Disk rulers. Electrotyping machinery. Embossing presses. Engraving machinery. Envelope machines. Envelope sealing machinery. Hand printing machines. Iron rolls for paper mills.	Label machinery. Lithographing and printing rollers. Match-box machinery. Monogram presses. Numbering machines. Paging machinery. Paper-box machinery. Paper cutters. Paper-folding machinery. Paper and pulp mill machinery. Paper macerators. Paper machinery appliances. Paper towel machinery. Perforators for bookbinders and printers. Photo-engraving machinery. Pin ticketing machinery.	Plate printing presses. Post marking machinery. Presses, printing. Printers' form trucks. Printing press gauges. Roller mold machinery. Ruling machines. Sheet cutters. Sheet feeding machinery. Tablet binding machines. Ticket presses. Type-casting machines. Typesetting and type-casting machines. Type-embossing machines. Typesetting machines. Wall paper cutting machines. Wire-stitching machines.
--	---	--

Machines and other products for use in the manufacture of liquors and beverages.

Beer coil cleaners. Bottle-filling machines. Bottlestoppers and attachments. Bottling tables.	Brewing apparatus. Gas and air mixing machines. Grain driers. Hop-separating machinery.	Keg-elevating machinery. Malt-cleaning machinery. Malt mills. Worms.
--	--	---

Machines and devices for use in the manufacture of chemicals and allied products.

Ammonia machinery and fittings. Bark-grinding machines. Bone cutters. Candle machinery. Carbonating machinery. Chemical plant machinery. Disinfecting apparatus. Electrolytic cells for the manufacture of gas.	Exhausters, gas. Gas machinery. Gas-main stoppers. Glue machinery. Glycerin machinery. Grease extractors. Grinding mills for paints and fertilizers. *Oil and gasoline measuring pumps.	Oil refining stills. Paint-mill machinery. Powder-mill machinery. Printing-ink machinery. Soap machines.
--	--	--

Machines and supplies for use in the manufacture of stone, clay, and glass products.

Brick machinery. Brick clamps, molds and presses. Cement machinery. Clay-working machinery. Drill sharpeners. Drier cars. Emery grinding machinery. Emery-wheel stands. Furnaces, pottery and melting. Glass cutting and polishing machinery.	Glass-house machinery. Grinding and mixing pans. Grinding mills for cement and plaster of Paris. Limetkilns. Marble and stone working machinery. Pneumatic stone-working tools and machinery. Pulverizing machinery for stone and cement.	Rock drills. Sand-blast machinery. Sand crushing, grinding and washing machinery. Steel abrasives for grinding and cutting stone, marble, and glass. Steel ladles for glass plants. Turning lathes for glass cutters.
--	---	--

Machines and materials for use in the manufacture of metals and metal products other than iron and steel.

Apparatus for autogenous welding and cutting. Arbor presses. Cataract-bench lathes. Cushion power hammers. Galvanizing kettles. Insulated wire machinery.	Insulating machinery. Jewelers' foot presses. Jewelers' lathes. Magnetic separators. Pneumatic power hammers. Sheet-metal working tools. Sheet-metal ornaments.	Silversmithing machinery. Stamping presses. Steel stamping dies for metal. Turners' tools and machines. Watchcase machines. Watch makers' tools.
--	---	---

Machines for use in the manufacture of tobacco.

Cigar-bunching machines. Cigar-bunching tables. Cigar cutters. Cigar-mold presses.	Cigarette-making machines. Cigarette paper-tube machinery. Cigarette tipping machinery. Machines for packing cigarettes.	Tobacco machinery. Tobacco-packing machinery. Tobacco-slicing machinery. Wrapper-rolling suction tables.
---	---	---

Machines and materials for use in the manufacture of vehicles for land transportation and by railroad repair shops.

Air brakes.	Car axle boxes.	Railroad inspection motor cars.
Automatic fire doors for locomotives.	Car fenders.	Shock absorbers.
Automobile castings and supplies.	Car roofs and doors.	Snow guards.
Automobile starters.	Car wheels.	Street railway signals.
Automobile tire pumps.	Carburetors.	Switching apparatus.
Brake beams.	Industrial cars.	Train control and signal apparatus.
	Locomotive bell-ringers.	Uncoupling devices.
	Locomotive fire boxes.	

Machines and devices for use in building and equipping ships.

Anchor hoists.	*Marine gas and oil engines.	Propeller wheels.
Capstans.	Marine hardware.	Sounding machines.
Clamps, beam.	Marine reversing gears.	Windlasses.
Donkey boilers.	Motor boat specialties.	
Lifeboat lifters and launchers.	Propeller shafts.	

Machines and appliances for use in the manufacture of the miscellaneous group (excluding shipbuilding).

Adding machine stands.	Excavating machinery.	Piano actions.
Addressing machines and supplies.	Folding box gluers.	*Piano and piano player hardware.
Asphalt machinery.	Furriers' machinery.	Piano pedals.
Benders and formers for baseball masks.	*Gun sights.	Power washing machines.
Broom-handle lathes.	Hair drying machinery.	Pulley molding machinery.
Broom machinery.	Linoleum printing machinery.	Rubber working machinery.
Brushing machinery.	Metal furnishings for artificial limbs.	Scaffolding machinery.
Button-covering machines.	Molding and picture frame machinery.	*Spiral needles.
Button dies and cutters.	Molding machine cutters.	Steel rule bending and rule cutting machinery.
Clipping machines.	*Nickel-plated parts for piano actions.	*Switchboards.
Coke-oven machinery.	Oscillating-fan bases.	Tunneling machinery.
Comb machines.	Paint-brush machinery.	Window-shade machinery.
Concrete mixers.	Pearl-button machinery.	Wire stitchers.
Demonstrating machinery.		

Products intended for use in manufactures in general.

Ash ejectors.	Flanges.	Saw filing and setting machines.
Bearings, oilless, journal.	Flexible shafting.	Shavings and dust-handling systems.
Belt lacing machinery.	Friction clutches.	Sleeves.
Bends.	Filing and capping machines.	Smokestacks.
Blowers.	Grindstone frames.	*Springs and flexible metal tubing.
*Bolts, expansion.	Hand hoists.	Sprocket wheels.
Bottle washers and cleaners.	Humidifying and moistening apparatus.	*Steam valves.
Chaplets.	*Hydraulic pumps.	Sterilizers.
Circular knife grinders.	Hydro-extractors.	Stokers, automatic.
Clutches.	Jigs.	Street-cleaning machines and implements.
Compressors, air and gas.	Ladles.	Transmission machinery.
Concrete and core sand mixers.	Lime-kiln tops.	Tube stoppers.
Condensers.	Lubricators.	Twist drills and cutters.
Couplings, belt.	Mailing machinery.	Ventilating and drying machinery.
Cranes, traveling.	Marking machinery.	*Water wheels.
Crank shafts.	Nailing machines.	Welding appliances.
Cutter heads.	Pasting devices.	Wheels, rope.
Cylinders, gas.	Piston pins.	Wheels, worm.
Derricks.	*Plate iron.	Winding and measuring machinery.
Dies.	Pulleys, hangers, and collars.	Wiring tools.
Digesters.	Pulverizing and separating machinery.	
Electric cranes and hoists.	Pump governors.	
Emery grinders.	Punches, dies, and tools.	
Exhaust-fans.	Purifying apparatus.	
Extracting machinery.		
Fireplaces and fittings.		

Products intended for use in mining.

*Cars, stripping and mine.	Mine ventilator fans.	Riddles.
Coal and ore handling equipment.	Mining machinery.	Roasting furnaces.
Coal washers.	Oil filters.	Rock crushers.
Cob crushers.	Oil-well rods and tools.	Slate pickers.
Drilling and finishing rods.	Ore and phosphate washing machinery.	Tipples.
Drills, mining.	Pumping heads for pumping oil wells with compressed air.	Wagons, small coal.
Mine car wheels.		

Products intended for use in agriculture.

Corn planters.	Hay balers.	Plowpoints.
Cotton gins.	Hay hooks.	Plowshares.
Cranberry separators.	*Hay presses.	*Plows, walking.
Cultivators.	Hay stackers.	*Potato diggers.
Grain drills.	Irrigation pipes and tanks.	*Presses, baling.
Grain separators.	*Lime spreaders.	Weed cutters.
Harrows.		

There is a tendency to specialize in some of the machine-shop products, and it has been the endeavor at each census to segregate the totals so as to give separate statistics for the establishments engaged primarily in the manufacture of well-defined products. Thus the manufacture of locomotives and of stoves and furnaces which were included as foundry and machine-shop products for 1899 and previous censuses, cast-iron pipe, which was included for 1904 and prior thereto, and engines, power pumps, and automobile repairing which had been included prior to 1914 are now shown as separate industries.

At the census of 1909 the following classifications were combined and the total given as foundry and machine-shop products: "Bells," "foundry and machine-shop products," "gas machines and gas and water meters," "hardware," "hardware, saddlery," "iron and steel pipe, cast," "plumbers' supplies," "steam fittings and heating apparatus," and "structural ironwork." The products of all of these industries are closely allied to foundry and machine shops, and there is considerable overlapping among them. Therefore, in order to preserve the comparison, a similar combination has been made for 1914 and the statistics are given in the following table:

CENSUS YEAR.	Number of establishments.	Wage earners (average number).	Primary horse-power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	17,027	564,610	1,129,768	\$1,846,349	\$376,676	\$592,989	\$1,373,309	\$780,320
1909.....	13,253	531,011	869,305	1,514,332	321,521	540,011	1,228,475	688,464
1904.....	10,765	449,409	606,165	1,034,135	246,573	367,412	880,514	513,102
1899 ¹	11,046	428,985	443,085	790,741	219,870	363,036	798,454	435,418
1889.....	8,075	286,863	245,090	463,763	159,116	219,343	519,556	300,213
1879.....	5,909	171,300	100,150	178,457	76,729	121,709	252,685	130,976

¹ Includes "locomotives, not made by railroad companies" and "stoves and furnaces not including gas and oil stoves" in 1899.

The foundry and machine-shop industry, as defined for the census of 1914, does not include any of the other industries enumerated above that have been segregated and for which separate totals are given. Table 67 (p. 96) presents statistics for the three main branches of the foundry and machine-shop industry, namely, "boiler shops," "foundries," and "machine shops," which also includes machine shops and foundries combined.

To assist in a further segregation of the totals for the foundry and machine-shop industry a special schedule was used at the census of 1914 to collect statistics for the value of the different kinds of machinery manufactured. This schedule was used as far as possible to collect data from all machine shops.

MACHINERY.

The statistics for establishments engaged in the manufacture of machinery, except in the case of machines that are the subject of special industries, are included under "foundry and machine-shop products." These establishments reported the value of specified classes of machinery, conforming to the classification adopted for exports of domestic merchandise, and Table 75 gives the data thus secured in comparison with exports for 1914 as classified by the Bureau of Foreign and Domestic Commerce of the Department of Commerce. It is not to be assumed that the amounts reported cover in all cases the entire production, for it is possible that in some cases machinery specifically called for was not reported separately. Some machinery is capable of use in a number of different industries, and manufacturers were not always able to designate the industry using it. Further, it will be understood that the machinery reported under a specific title, for example "shoe machinery" or "textile machinery," does not embrace the entire machinery equipment of a shoe factory, or a textile mill, including power-generating machinery, etc., but only that of the character named.

Table 75	CENSUS OF 1914.		Exports, 1914
	Number of estab- lish- ments.	Value.	
Total.....			\$91, 818, 664
Adding and calculating machines.....	44	¹ \$14, 731, 455	1, 177, 751
Air compressing machinery.....	84	5, 158, 121	388, 870
Bakers' machinery.....	32	2, 554, 703	(²)
Bottlers' machinery.....	29	1, 358, 625	(²)
Brewers' machinery.....	54	3, 881, 554	191, 272
Brick, pottery, and other clay-working machinery.....	89	2, 438, 861	(²)
Cannery machinery.....	28	1, 305, 786	(²)
Cash registers and parts of.....	19	¹ 15, 935, 069	3, 267, 829
Concrete mixers.....	44	2, 956, 058	(²)
Cotton gins.....	25	4, 901, 680	102, 188
Cranes.....	26	4, 194, 457	(²)
Dairy machinery and apparatus:			
Cream separators.....	36	¹ 8, 663, 575	304, 191
All other.....	42	¹ 4, 334, 799	(²)
Elevators and elevator machinery.....	213	17, 228, 101	1, 057, 709
Engines: ³			
Electric locomotives.....	10	4, 315, 172	606, 032
Internal combustion.....	549	54, 250, 421	5, 307, 626
Steam—			
Locomotives.....	33	39, 043, 359	2, 480, 882
All other (marine, stationary, and traction).....	245	30, 498, 638	829, 744
All other.....	52	3, 633, 008	704, 006
Parts of.....		⁴ 12, 656, 537	2, 722, 975
Excavating machinery (including dredges and steam shovels).....	21	2, 968, 965	(²)
Glass-making machinery.....	30	1, 080, 726	(²)
Laundry machines:			
Power machines.....	73	6, 135, 321	347, 596
All other.....	35	1, 429, 958	448, 242
Lawn mowers.....	22	2, 848, 119	376, 187
Leather machinery.....	27	1, 066, 939	(²)
Metal-working machinery:			
Machine tools.....	409	31, 446, 660	} 14, 841, 380
All other.....	277	17, 419, 526	
Meters, gas and water.....	40	¹ 11, 638, 074	⁵ 165, 128
Milling machinery (flour and grist).....	101	5, 017, 761	893, 258
Mining machinery:			
Oil-well machinery.....	127	10, 569, 483	} 7, 216, 445
All other.....	153	13, 253, 634	
Oil-mill machinery.....	20	1, 878, 228	(²)
Paper and pulp mill machinery.....	104	6, 811, 141	604, 553
Paper-working machinery.....	35	1, 777, 086	(²)
Printing presses.....	88	8, 396, 508	1, 937, 056
Printing and bookbinding machinery (other than printing presses).....	56	3, 197, 319	(²)
Pumps and pumping machinery.....	298	¹ 27, 456, 916	2, 939, 734
Refrigerating machinery (including ice-making machinery).....	73	10, 522, 322	570, 820
Road-making machinery.....	31	3, 545, 272	(²)
Rubber machinery.....	14	2, 725, 897	(²)
Sewing machines.....	48	¹ 21, 710, 643	8, 658, 762
Shoe machinery.....	72	5, 949, 300	1, 140, 228
Sugar-mill machinery.....	42	⁶ 1, 971, 543	1, 814, 137
Textile machinery.....	211	30, 437, 689	1, 308, 048
Typesetting machines, linotype and other.....	10	7, 634, 631	1, 521, 034
Typewriting machines.....	53	¹ 20, 516, 532	7, 573, 145
Vacuum cleaners.....	39	2, 058, 524	(²)
Windmills.....	50	¹ 5, 842, 778	1, 085, 730
Woodworking machinery:			
Sawmill machinery.....	182	6, 303, 920	460, 548
All other.....	196	7, 088, 980	894, 867
All other machinery and parts of, etc.....			17, 880, 691

¹ Includes value of all products of establishments engaged primarily in the manufacture of the machines specified.

² Not reported separately.

³ Does not include engines made as component parts of other machinery and not reported separately, nor the automobile engines made and installed by the manufacturers of the complete machines.

⁴ Exclusive of parts manufactured by establishments not engaged in making complete engines.

⁵ Figures cover period beginning July 1.

⁶ The amount reported includes, presumably, only machinery specially designed for sugar mills and not otherwise available, and does not include large amounts of sugar-mill equipment, such as boilers, tanks, kettles, etc., which may be included in the figures for exports.

GAS MACHINES AND GAS AND WATER METERS.

The principal products manufactured by the establishments in this industry are acetylene and gasoline gas machines or generators; gas meters for stations at gas works and for consumers; meters for the measurement of water and other liquids, photometers, carburetors, gas holders, gas producers, and incidentally various other apparatus and appliances, such as meter testers, gauges, guards, pump governors, relief valves, injectors, regulators, and siphons.

Statistics are given in Table 223 (p. 629) for each census from 1869 to 1914, inclusive. In Table 67 (p. 96) the data for 1914 are divided into three groups, showing those manufacturing "gas meters and water meters;" those making "gas machines," and those making "all other" products of this classification. The establishments are classified according to their product of chief value.

At the census of 1849 two establishments reported the manufacture of gas meters to the value of \$114,000.

Gas machines to the value of \$167,057 were reported by manufacturers of gas and water meters, and to the value of \$87,024 by establishments in other industries.

HARDWARE.

The products manufactured by establishments in this classification include automobile, coach, and carriage hardware; builders' and cabinet hardware; car and railway hardware; casket hardware; furniture, drapery, upholstery, trunk, and suitcase hardware; kitchen and household hardware; marine hardware; piano, piano-player, and organ hardware; plumbers' hardware; refrigerator hardware; shoe hardware; theatrical stage hardware; post-office equipment; and stationery findings. Many of these lines are extensive, embracing a great variety of specific articles. There is more or less overlapping between the manufacture of hardware and other branches of industry, such as "hardware, saddlery," "cutlery and edge tools," "tools, not elsewhere specified," "iron and steel forgings," and "foundry and machine-shop products," but the data reported are not sufficiently explicit to permit any statement or estimate of the amount of such overlapping.

Comparative statistics for the industry for the census years from 1849 to 1914, inclusive, are presented in Table 223 (p. 634).

In 1914 the statistics were shown under three groups, the establishments being classified according to their product of chief value, as manufacturing "locks," "hinges and other builders' hardware," and "all other" hardware. (See Table, 67, p. 96.)

Locks to the value of \$10,026 were reported by manufacturers of builders' hardware, and to the value of \$68,578 by establishments assigned to other classifications, principally machine shops, and "electrical machinery, apparatus, and supplies."

Hinges and other builders' hardware to the value of \$1,250,948 were reported as made by manufacturers of locks, and to the value of \$222,151 by establishments assigned to other industries.

HARDWARE, SADDLERY.

The products manufactured by establishments under this classification are the different articles of hardware used in connection with the manufacture of saddlery and harness. These include buckles, buckle tongues, terrets, snaps, chains, bridle iron, bits, spurs, stirrups, neck yokes, hame fasteners, and other mountings, and ornaments of all descriptions. There is considerable overlapping between this and the general hardware industry. Statistics for each census from 1869 to 1914, inclusive, are given in Table 223.

Saddlery hardware to the value of \$242,739 was reported in 1914 by establishments assigned to other classifications, principally foundry and machine-shop products, while a small amount was reported by manufacturers of builders' hardware.

LOCOMOTIVES, NOT MADE BY RAILROAD COMPANIES.

This classification includes the manufacture of steam locomotives of all varieties, some of them geared for use in logging camps and on hill-climbing tracks, also compressed-air locomotives for use in mines. Some electric locomotives are also made by plants assigned to this classification, but others are made by those in the electrical machinery and electric-railway car industries. The manufacture of tractors for farm and road use are not included, but are shown in connection with "engines, steam, gas, and water," in Table 73.

The industry was first presented separately in 1904, having been previously associated with "foundry and machine-shop products." General statistics for the last three census periods are given in Table 223.

In addition to the products of establishments assigned to this classification, steam-railroad repair shops in 1914 built 187 locomotives valued at \$3,594,003 as compared with 215 locomotives valued at \$3,289,140 in 1909.

ORDNANCE AND ACCESSORIES.

This classification includes cannon and artillery and their mounts; apparatus pertaining to cannon and artillery; and ammunition, such as shot and shells for cannon and artillery. Among the products reported are guns, mounts, and sights, torpedo tubes, seacoast and mobile artillery cannon, subcaliber guns, shrapnel cases, fuse hole plugs, projectiles and bushings and caps for projectiles, gun carriages, targets and target materials, field and siege carriages, infantry, cavalry, and artillery equipment, seacoast targets, ammunition trucks, etc. Only two establishments besides those operated by the Government reported the manufacture of ordnance and accessories in 1914, and these are included in "all other industries." (See Table 156.) Armor plates, gun forgings, and ordnance to the value of \$20,070,470 were reported by steel works and rolling mills and by manufacturers of ammunition.

PENS.

The manufacture of pens is covered by three classifications, namely, "fountain and stylographic," "gold," and "steel pens." The following table gives for 1914 the total of the three groups, as well as the separate data for each.

	PENS, 1914.			
	Total.	Fountain and stylographic.	Gold.	Steel.
Number of establishments.....	72	55	12	5
Wage earners (average number).....	1,973	1,154	246	573
Capital.....	\$4,548,638	\$3,269,809	\$408,228	\$870,601
Wages.....	1,134,785	717,533	174,209	243,043
Cost of materials.....	2,033,151	1,614,145	301,893	117,113
Value of products.....	8,021,033	6,865,074	642,461	513,498
Value added by manufacture (value of products less cost of materials).....	5,987,882	5,250,929	340,568	396,385

Pens, steel.—Establishments included in this classification manufacture principally steel and metallic writing pens, other than gold. The statistics for the industry from 1869 to 1914 are presented in Table 223 (p. 670).

In addition to the products covered by the table, steel pens to the value of \$160,068 were reported in 1914 by establishments assigned to "pencils, lead," "cutlery and edge tools," and "foundry and machine-shop products."

PLUMBERS' SUPPLIES, NOT ELSEWHERE SPECIFIED.

The statistics of establishments manufacturing principally bath and laundry tubs, bathroom closets and washbowls, kitchen and pantry sinks, bathroom and laundry fittings of all description, flush valves, faucets, pipe hangers, tanks, cabinets, shower baths, seats, and kindred products, are included in this classification. Statistics for each census from 1889 to 1914, inclusive, are given in Table 223 (p. 674).

In addition to the products covered by the table, enameled bath tubs and enameled lavatories and sinks, to the value of \$578,002, were assigned to the "stamped and enameled ware" industry.

Plumbers' supplies to the value of \$1,202,897 in 1914, were also reported as a subsidiary product by establishments assigned to other classifications. The total value of plumbers' supplies made in 1914 amounted to \$45,166,787.

PUMPS, STEAM AND OTHER POWER.

The principal products of this classification are steam and other power pumps. Prior to 1914 this industry was included in foundry and machine-shop products. The statistics are divided into two subclasses, (1) steam pumps, and (2) other power pumps, classified according to the product of chief value, and data for each is given in Table 67 (p. 96). The general statistics for the industry, by states, are shown for 1914 in Table 223.

Steam pumps to the value of \$111,382 were reported by establishments manufacturing other power pumps, and to the value of \$610,387 by establishments assigned to other classifications, principally "engines, steam, gas, and water," and "foundry and machine-shop products."

"Other power" pumps to the value of \$132,430 were reported by manufacturers of steam pumps, and to the value of \$610,254 by establishments assigned to other classifications, principally "pumps, not including power pumps," and "windmills."

PUMPS, NOT INCLUDING POWER PUMPS.

Pumps of all descriptions, except such as are operated by power, are made by establishments included in this classification. Only a comparatively small number are made of wood. Hand pumps of the suction and chain-and-bucket types predominate, but air pumps are also included. Classified according to use, there are automobile and bicycle pumps, beer pumps, cistern pumps, pumps for wells, oil pumps, spray pumps and spraying machinery, vacuum pumps, vinegar-barrel pumps, etc. Statistics for the industry for each census from 1849 to 1914, inclusive, are given in Table 223.

In addition to the products covered by the table, establishments assigned to "pumps, steam and other power," "windmills," "stamped and enameled ware," "agricultural implements," and "foundry and machine-shop products," and other industries, reported pumps to the value of \$1,577,655 in 1914 and \$1,380,377 in 1909.

The decrease in the industry from 1889 to 1899, as shown by the statistics in Table 223, is probably due, in part, to the changes in the classification of certain individual establishments, the change being due to differences in the chief product. Pumps are also manufactured in foundries and machine shops, and by manufacturers of agricultural implements, and those industries may have covered a larger part of the production in 1899 than in 1889. Also, prior to 1899, neighborhood industries and hand trades were included and wooden pumps were doubtless made in some of these small establishments.

SAFES AND VAULTS.

The principal products of establishments included in this classification are fire and burglar proof safes for banks, offices, and residences; vaults, chests, electric burglar alarms, and safe-deposit boxes; vault doors and linings; safe locks; and steel burial vaults. In 1914 separate statistics are given for "safes" and for "vaults," each establishment being classified according to its product of chief value. (See Table 67.) Statistics for the industry are shown for each census from 1859 to 1914, inclusive, in Table 223 (p. 682).

There is considerable overlapping between the two subgroups, vaults to the value of \$691,557 being reported by manufacturers of safes, while safes to the value of \$242,854 were reported by establishments manufacturing vaults, and to the value of \$107,743 by establishments assigned to other classifications.

SCALES AND BALANCES.

The products of establishments included in this classification are scales of all descriptions—stationary and portable, light and heavy, spring and beam, counter and platform—cheese cutters and meat-slicing machines, and weighing machinery. Many of the scales and weighing machines have automatic computing devices. Coin-controlled mechanisms for weighing, micrometers, and scale parts are likewise made by the establishments included in this classification. The statistics for the industry from 1849 to 1914, inclusive, are presented in Table 223 (p. 684).

In addition to the products covered by the table, scales and balances to the value of \$326,066 in 1914 and of \$118,125 in 1909 were reported by establishments assigned to other industries, principally "foundry and machine-shop products," "cutlery and edge tools," "carriages and wagons," and "agricultural implements."

SCREWS, MACHINE.

The products of establishments under this classification include all kinds of screws of milled iron, steel, brass, and copper for use in the manufacture of machinery, of chemical, electrical, and other scientific instruments, and in metal work generally; and also incidentally a considerable production of bolts, studs, rods, rivets, collars, pins, rolls, and washers. Screws for use in wood are not included. Statistics for the industry from 1889 to 1914, inclusive, are given in Table 223 (p. 685).

In addition to the products covered by the table, machine screws to the value of \$815,949 in 1914 and of \$939,456 in 1909 were reported by establishments assigned to other industries, principally "screws, wood," "foundry and machine-shop products," and "iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills."

SCREWS, WOOD.

The establishments included in this classification manufacture principally steel, brass, and bronze screws for use in wood. Such products as bolts, nuts, and rivets were also reported in some instances. The statistics for the industry for the censuses from 1889 to 1914, inclusive, are given in Table 223 (p. 685).

In addition to the products covered by the table, wood screws to the value of \$355,542 in 1914 and of \$442,005 in 1909 were reported by establishments assigned to the industries—"hardware, locks," "iron and steel bolts, nuts, washers, and rivets," and "needles and pins and hooks and eyes."

SEWING MACHINES, CASES, AND ATTACHMENTS.

This classification includes establishments engaged in the manufacture of sewing machines and attachments and those making sewing-machine cases. Separate statistics were compiled for these two industries, and are given in the following table, together with the total of the two combined. As the products of the second industry are used as materials by the first, there is considerable duplication in the combined value of products.

Table 77	SEWING MACHINES, CASES, AND ATTACHMENTS: 1914.		
	Total.	Sewing machines and attachments.	Sewing-machine cases.
Number of establishments	50	46	4
Wage earners (average number).....	18,007	14,308	3,699
Capital.....	\$40,891,777	\$34,466,624	\$6,425,153
Wages.....	11,091,024	8,860,843	2,230,181
Cost of materials.....	10,199,445	7,358,664	2,840,781
Value of products.....	27,237,580	21,391,917	5,845,663
Value added by manufacture (value of products less cost of materials).....	17,038,135	14,033,253	3,004,882

Sewing machines and attachments.—The products of establishments in this classification are the many varieties of sewing machines, foot and power, for family and factory use, and for sewing leather as well as cloth. Attachments, heads, and other parts and accessories are also included. Statistics for the industry for each census from 1859 to 1914, inclusive, are presented in Table 223 (p. 685).

Table 67 gives separate totals for establishments engaged primarily in the manufacture of complete machines and of attachments, respectively. Attachments and parts of sewing machines are also made in some of the establishments included in the classification of "foundry and machine-shop products."

STEAM FITTINGS AND STEAM AND HOT-WATER HEATING APPARATUS.

Establishments included in this industry manufacture principally steam and hot-water radiators, safety valves, engine indicators, pressure and vacuum gauges, water gauges, hydrants and cocks, coils and bends of iron, brass and copper pipe, unions and flanges, and similar fittings. The manufacture of stoves and furnaces, including, doubtless, some hot-water heaters, is classified as a separate industry. There is considerable overlapping with the foundry and machine-shop industry and with other industries.

The principal statistics for each census from 1859 to 1914, inclusive, are shown in Table 223 (p. 694). Because of changes in the method of classification, the figures for 1889 are not closely comparable with those for later censuses.

Table 67 (p. 96) presents separate data for 1914 for the two branches of the industry—"radiators and cast-iron heating boilers," and "all other" steam fittings, establishments being classified according to product of chief value.

Radiators and cast-iron heating boilers to the value of \$50,982 were reported by makers of other steam fittings, and to the value of \$1,482,532 by establishments assigned to other classifications, principally stoves and hot-air furnaces, structural ironwork, tools, electrical machinery, apparatus, and supplies, and plumbers' supplies, not elsewhere specified.

"All other" steam fittings to the value of \$2,414 were reported by makers of radiators and cast-iron boilers, and to the value of \$53,873 by establishments assigned to other classifications, principally foundry and machine-shop products.

STOVES AND HOT-AIR FURNACES.

The principal products manufactured by the establishments in this industry are cast-iron and sheet-iron and wrought-steel stoves, ranges, and furnaces, for cooking or heating. Fireless cookers, evaporating furnaces and auxiliary heaters, marine ranges, ventilating heaters, laundry clothes dryers, and furnace and stove parts are also among the products. The classification "steam fittings and steam and hot-water heating apparatus," covers establishments which manufacture hot-water, steam, and combination heaters, and radiators. Prior to 1904 stoves and furnaces were included with "foundry and machine-shop products." Statistics for the industry for 1904, 1909, and 1914 are given in Table 223 (p. 695).

In 1914 separate data for "stoves and ranges," "hot-air furnaces," and "fireless cookers" were compiled and are presented in Table 67 (p. 96).

Stoves and ranges to the value of \$1,392,953 were reported by establishments assigned to other classifications, principally gas and oil stoves, while a small amount was reported by manufacturers of furnaces.

Hot-air furnaces to the value of \$1,907,712 were reported as made by manufacturers of stoves and ranges, and to the value of \$390,533 by establishments assigned to other classifications, principally "foundry and machine-shop products," "copper, tin, and sheet-iron work," and "plumbers' supplies, not elsewhere specified."

Fireless cookers to the value of \$77,785 were reported by establishments assigned to other classifications, namely, "stoves, gas and oil," "agricultural implements," "clocks," and "hardware, locks."

In 1909 stoves and hot-air furnaces to the value of \$1,184,855 were reported by other industries.

STOVES, GAS AND OIL.

All kinds of gas, oil, alcohol, acetylene, and gasoline stoves, ranges, heaters, burners, and furnaces are manufactured by the establishments included in this industry. Asbestos fireplace gas burners, natural-gas stoves and ranges, vapor stoves, and hot plates and sadirons heated with alcohol or other fuel burned internally are also among the products. Statistics for the censuses from 1889 to 1914 are presented in Table 223.

In addition to the products shown in Table 223, gas and oil stoves to the value of \$2,225,015 were reported by establishments assigned to other industries, principally stoves and ranges, steam fittings, machine shops, and others.

COOKING AND HEATING APPARATUS.

The following table gives the value of product of the various classes of cooking and heating apparatus:

Table 78	INDUSTRY AND SUBCLASSIFICATION.	Value of products.
	Total.....	\$116,684,618
	Stoves and hot-air furnaces:	
	Stoves and ranges.....	55,108,468
	Hot-air furnaces.....	12,080,919
	Fireless cookers.....	751,719
	Stoves, gas and oil.....	21,443,932
	Steam fittings and steam and hot-water heating apparatus—radiators and cast-iron heating boilers.....	23,476,747
	Electrical machinery, apparatus and supplies:	
	Stoves and ranges.....	671,413
	Miscellaneous cooking devices.....	1,327,183
	Air heaters.....	352,617
	Platirons.....	1,466,620

TIN PLATE AND TERNEPLATE.

The tin plate made by establishments included in this classification consists of thin plates or sheets of iron or steel—mainly steel—dipped into molten tin and thus brightly coated. It is used extensively in the manufacture of cans in which vegetables, fruits, and other foods are packed, and in the making of household utensils. Terne or dull plate consists also of plates of iron or steel, but these are coated with an alloy of tin and lead and used largely for roofing, being therefore known also as roofing plate. The process of manufacture as a whole includes the rolling of the steel plates, called black plates, and the dipping of these plates in tin or terne mixture, but the rolling branch of the business can not be segregated from the other business of rolling mills. Most of the dipping business is done by the dipping departments of rolling mills, but the data for such departments have been segregated and are included in the statistics here presented. Such departments in 1914 constituted 28 of the 31 establishments covered

by Table 79. The tin-plate industry in the United States dates from 1891, practically the entire domestic market prior to that year having been supplied by imports.

The statistics for the number of establishments, the materials, and products of the tin and terneplate industry, together with the consumption, imports, and exports and the equipment of the mills are given in the following table. Separate statistics for the tin-plate industry were first shown at the census of 1899. Comparative statistics for the industry for 1899, 1904, 1909, and 1914 are given in Table 223 (p. 699).

Table 79	TIN PLATE AND TERNEPLATE.			
	1914	1909	1904	1899
Number of establishments.....	31	31	36	57
Rolling black plate and dipping.....	28	27	27	35
Tin-plate and terneplate dipping only.....	3	4	9	22
Number making tin plate.....	29	27	1 43	1 50
Number making terneplate.....	13	17	1 29	1 43
MATERIALS.				
Total cost.....	\$57,906,561	\$41,889,434	\$31,375,714	\$26,728,150
Black plates or sheets: ²				
Pounds.....	2,107,787,589	1,321,071,691	1,019,608,657	827,915,599
Steel.....	2,101,578,620	1,312,345,153	1,018,575,390	(³)
Iron.....	6,208,969	8,726,538	1,033,267	(³)
Cost.....	\$39,803,655	\$28,981,151	\$22,992,006	\$20,668,848
Steel.....	\$39,597,122	\$28,884,237	\$22,961,415	(³)
Iron.....	\$206,533	\$96,914	\$30,591	(³)
Produced by the establishment reporting—				
Pounds.....	2,084,536,669	1,291,048,109	943,798,583	(³)
Assigned cost.....	\$39,335,112	\$28,245,234	\$21,154,388	(³)
Purchased—				
Pounds.....	23,250,920	30,023,582	75,810,074	(³)
Cost.....	\$468,543	\$735,917	\$1,837,618	(³)
Pig tin:				
Pounds.....	36,542,881	28,586,267		
Cost.....	\$14,167,237	\$8,490,794		
Pig lead:				
Pounds.....	2,269,160	2,708,496	32,445,104	27,154,258
Cost.....	\$94,024	\$117,656	\$7,075,722	\$4,927,090
Terne mixture (purchased):				
Pounds.....	6,618,211	9,632,996		
Cost.....	\$783,546	\$1,061,587		
Total tin and lead, including contents of terne mixture purchased, pounds.....	45,430,252	40,927,759	32,445,104	27,154,258
Tin.....	38,049,636	31,077,651	24,243,851	20,282,778
Lead.....	7,380,616	9,850,108	8,201,253	6,871,480
All other materials, including plates for re-dipping, fuel, and rent of power.....	\$3,058,099	\$3,238,246	\$1,807,986	\$1,132,212
PRODUCTS.				
Total value.....	\$68,342,962	\$47,969,645	\$35,283,360	\$31,892,011
Tin plate and terneplate:				
Pounds.....	6 ² 2,053,966,144	1,315,313,132	1,026,384,851	849,004,072
Value.....	6 ³ \$66,270,345	\$45,815,146	\$34,549,543	\$31,294,145
Tin plate—				
Pounds.....	1,901,331,895	1,123,968,875	867,526,985	707,718,239
Value.....	\$60,258,024	\$38,259,885	\$28,429,971	\$25,553,021
Coke plate—				
Pounds.....	1,855,892,526	(³)	(³)	(³)
Value.....	\$58,450,853	(³)	(³)	(³)
Charcoal plate—				
Pounds.....	45,439,369	(³)	(³)	(³)
Value.....	\$1,807,171	(³)	(³)	(³)
Terneplate—				
Pounds.....	152,634,249	191,344,257	158,857,866	141,285,783
Value.....	\$6,012,321	\$7,555,261	\$6,119,572	\$5,731,124
All other products, including plates re-dipped, stamped ware, dross, scruff scrap, etc.....	\$2,072,617	7 \$2,154,499	7 \$733,817	7 \$607,866
CONSUMPTION.				
Retained for consumption, pounds.....	1,954,948,295	1,462,387,579	1,173,329,667	981,297,455
Of domestic origin (production less exports).....	1,920,576,896	1,322,209,898	1,015,249,355	849,705,880
Of foreign origin (imports less reexports).....	34,371,399	140,177,681	158,080,312	131,591,575

See footnotes on p. 127.

Table 79—Continued.	TIN PLATE AND TERNEPLATE.			
	1914	1909	1904	1899
EQUIPMENT. ⁸				
Tin plate or terneplate dipping sets at end of year:				
Number.....	693	573	619	583
Usually employed on tin plate.....	615	455	499	(3)
Usually employed on terneplate.....	78	118	120	(3)
Daily capacity, single turn, pounds....	3,868,000	2,840,000	3,454,000	2,733,000
Tin plate.....	3,454,000	2,076,000	2,887,000	2,004,000
Terneplate.....	414,000	764,000	567,000	729,000
Number of establishments operating on—				
Single turn.....	6	5	(3)	(3)
Double turn.....	5	10	(3)	(3)
Triple turn.....	21	16	(3)	(3)
Black-plate department:				
Hot black-plate mills at end of year—				
Number.....	393	335	315	1332
Annual capacity on triple turn, tons (2,240 pounds).....	1,497,000	1,042,000	707,000	641,000

¹ Includes idle establishments.

² No black plates of foreign manufacture in 1914 and 1909; in 1904, 83,900 pounds, costing \$3,769; in 1899, 2,358,607 pounds, costing \$78,282.

³ Figures not available.

⁴ Comprises 5,347,540 pounds of charcoal iron and 861,429 pounds of other iron.

⁵ In addition in 1914, 1 establishment engaged primarily in another branch of manufacture, made some terneplate; and, in 1909, 3 similar establishments produced 8,389,200 pounds of tin-plate and terneplate products, valued at \$398,143.

⁶ Includes 6,114,890 pounds of iron plate, valued at \$358,828; balance steel.

⁷ Includes value of other sheet iron or sheet steel tinned or terneplated, taggers tin, etc.; for 1909, 19,400,934 pounds, value \$520,465; 1904, 6,555,855 pounds, value \$217,476; 1899, 1,000,473 pounds, value \$86,492.

⁸ Includes for 1914, 1909, and 1904 the equipment of the few establishments in other industries that made tin plate or terneplate as an intermediate or secondary product.

• TOOLS AND CUTLERY.

The statistics for the manufacture of tools and cutlery are shown for four classes of establishments: (1) Cutlery and edge tools; (2) files; (3) saws; and (4) tools, not elsewhere specified.

Cutlery and edge tools.—The principal products of establishments included in this industry are table and other cutlery, such as the edge tools used chiefly by carpenters, lumbermen, shoemakers, tanners, carriers, and other workers in wood and leather. Establishments making saws and files as their principal product are classified separately. The table cutlery includes steel knives, knife blanks, and forks, but does not include silver-plated ware. Other cutlery includes penknives and jackknives, vegetable parers and slicers, grafting knives, and the like. Razors, both plain and safety, razor blades, swords, shears and scissors for household and other uses, axes and hatchets, clippers, and cigar cutters are also among the products made.

Table 67 presents separate statistics for 1914 for the establishments engaged primarily in manufacturing (1) table cutlery; (2) razors, both plain and safety; (3) axes and hatchets; (4) scissors, shears, and clippers; (5) pocket knives; (6) augers, bits, chisels, and planes; and (7) all other products included in the classification, such as shoe knives, oyster and clam knives, paper hangers' knives, hunting and special knives, cutting dies, sliving knives, swords, etc. There is considerable overlapping among the industry subgroups and between these subgroups and other industries.

Table cutlery to the value of \$45,363 was reported by other subgroups, and to the value of \$7,300 by establishments assigned to other classifications.

Razors to the value of \$18,030 were reported by other subgroups, and to the value of \$107,315 by establishments assigned to other classifications, principally "stamped ware" and "perfumery and cosmetics."

Axes and hatchets to the value of \$336,503 were reported by establishments assigned to other industries, principally "carpenters' tools, not elsewhere specified," and "agricultural implements."

Scissors, shears, and clippers to the value of \$115,948 were reported by establishments assigned to other industries, principally "hardware" and "iron and steel forgings," a small output of these goods being also reported by manufacturers of pocket knives.

Pocket knives to the value of \$71,000 were reported by other subgroups, and to the value of \$21,313 by establishments assigned to other classifications.

Augers, bits, chisels, and planes to the value of \$88,467 were reported by establishments assigned to other industries, and a small output of these tools was also reported by manufacturers of axes and hatchets.

"All other" cutlery to the value of \$185,161 was reported by other subgroups, and to the value of \$575,868 by establishments assigned to other industries, principally "hardware," "saws," and "foundry and machine-shop products."

Files.—Establishments included in this classification manufacture machine-cut and hand-cut steel files and rasps of all kinds and sizes. Small files for the use of jewelers, dentists, diesinkers, and watchmakers, and needle and manicuring files are among the products, while the rasps embrace those used by carpenters, horseshoers, and shoemakers.

In addition to the value shown in Table 223 (p. 619) establishments assigned to other industries in 1914 reported the manufacture of files to the value of \$50,405. In 1909 three establishments reported the manufacture of files to the value of \$4,611. Two of these establishments made "foundry and machine-shop products" and one of them "cutlery and edge tools."

Saws.—The establishments included in this classification manufacture all kinds of hand and power saws. Among the handsaws are those for the use of butchers, of carpenters and other woodworkers, and of machinists and other metal workers. The power saws embrace band and jig saws; circular saws, solid or with inserted teeth; diamond-toothed saws for stone; slitters; and hack and other saws for cutting metals. Statistics for the censuses from 1859 to 1914, inclusive, are given in Table 223.

In addition to the products covered by the table, establishments engaged principally in the manufacture of "foundry and machine-shop products", "cutlery and edge tools," "tools, not elsewhere specified," and "agricultural implements" reported saws to the value of \$102,381 for 1914, and to the value of \$587,062 for 1909.

Tools, not elsewhere specified.—The establishments included in this industry manufacture all kinds of hand tools, that are not edged, including (1) shovels, spades, hoes, and scoops, masons' and plasterers' tools, trowels, garden sets, sidewalk cleaners, hods, etc.; (2) carpenters' tools, not elsewhere specified; (3) machinists' tools, such as watchmakers' lathes and attachments, cutter heads, calking tools, drills, milling cutters, reamers, dies and vises, wrenches, punches, etc.; and (4) special tools for the use of laborers and mechanics, besides various minor tools and appliances, such as stone cutters' tools, watchmakers' and jewelers' tools, pliers for opticians, dentists, watchmakers, electricians, etc., diamond tools, molders', plumbers', and tinners' tools, bakers' tools, ice tongs, picks, nippers, cant hooks, blacksmithing tools, cobblers' tools, hand corn huskers, can openers, cleaners, fruit-jar wrenches, ice-skate sharpeners, nail pullers, paper cutters, tack pullers, tape measures, ticket punches, and similar articles. Separate statistics for these four groups are given in Table 67 (p. 96).

The manufacture of saws and files is covered by separate industries, and axes and hatchets, and augers, bits, chisels, and planes are subclassifications under cutlery and edge tools. There is a very close connection between this industry and cutlery and edge tools, iron and steel forgings, and foundry and machine-shop products. Table 223 presents the general statistics for the industry for the censuses from 1879 to 1914, inclusive.

Shovels, spades, scoops, and hoes to the value of \$524,872 were reported by steel works and rolling mills, and to the value of \$328,953 by establishments assigned to other industries, principally foundries and machine shops, cutlery and edge tools, and window and door screens and weather strips.

Carpenters' tools to the value of \$199,697 were reported by establishments assigned to other classifications, such as saws, cutlery, and screws.

Machinists' tools to the value of \$8,564 were reported by the manufacturers of shovels, spades, scoops and hoes, and of carpenters' tools, and to the value of \$629,445 by establishments assigned to other industries, principally steam railroad cars, saws, iron and steel forgings, hardware, automobile bodies and parts, machine shops, and surgical appliances.

"Tools, not specified" to the value of \$131,172 were reported by manufacturers of shovels, spades, etc., and to the value of \$1,949,650 by establishments assigned to other industries, principally steam fittings and steam and hot-water heating apparatus, machine shops, hardware, cutlery, iron and steel forgings, and refrigerators.

TYPEWRITERS AND SUPPLIES.

The principal products manufactured by the establishments under this classification are typewriting machines and parts, and typewriters' supplies. Separate data are given in Table 67 for these two divisions of the industry. The census of 1889 was the first at which separate statistics for the industry were presented. Comparative figures for the census years from 1889 to 1914 are given in Table 223 (p. 703).

Typewriters' supplies consist of such specialties as carbon or copying paper, inked ribbons, and automatic attaching systems, manifold tissue books, typewriter covers, error-proof speed-keys, metal boxes and spools, etc.

Establishments manufacturing carbon paper as their product of chief value reported products to the value of \$2,192,201, while establishments assigned to other classifications—"ribbon," "writing ink," and "printing ink"—reported carbon paper to the value of \$450,112, making the total production \$2,642,313.

"Ribbon" to the value of \$2,121,243 was produced by establishments manufacturing it as their product of chief value, while establishments assigned to the classifications carbon paper, and writing and printing inks, reported ribbons to the value of \$813,569, making the total production \$2,934,812.

"All other" supplies to the value of \$335,580 were produced by establishments manufacturing specialties as their product of chief value, while manufacturers of carbon paper reported "all other" supplies to the value of \$8,202, making the total production \$343,782.

In 1909 the value of typewriters' supplies reported by establishments assigned to other industries amounted to \$507,065. The greater part of this was reported by manufacturers of writing ink.

VAULT LIGHTS AND VENTILATORS.

The principal products manufactured by establishments in this classification are lights, made of iron or steel with glass set in, for bank, burial, and other vaults; window, roof, floor, and sidewalk ventilators; coalhole covers; exhaust blower fans; and glass prisms for windows and sidewalks. The statistics for the industry for the census years from 1879 to 1914, inclusive, are given in Table 223 (p. 705).

In addition to the value of product shown in the table, vault lights and ventilators to the value of \$223,600 were reported in 1914 by establishments assigned to other industries, principally steam fittings.

WIRE.

This classification includes only establishments which draw iron and steel wire or wire of other metals from purchased rods or bars. The extensive operations of the wire-drawing departments of steel works and rolling mills are not included in the classified industry, as it was found impossible to segregate all the items relating to them; nor are the operations of establishments drawing wire as a minor product or by-product included. The products include plain and coated wire, barbed wire, bonnet, music, needle, and piano wire, and other special kinds of wire, and manufactures of wire such as wire nails, spikes, tacks, brads, and staples. The industry overlaps that designated as "wirework, including wire rope and cable," many wire-drawing plants making such advanced products as wire rope, clotheslines, woven-wire fencing, and poultry netting.

The greater part of the wire drawn in 1914 was of steel and iron, but a considerable proportion was of copper, brass, or of other metal, such as bronze, German silver, or zinc. Some insulated copper wire for electrical work is made by establishments in this industry, but much larger quantities are made by manufacturers of electrical apparatus and supplies, who, however, usually buy the plain wire. Table 80 shows the quantity and value of the different kinds of wire and wire products made in 1914 and 1909 not only by establishments assigned to the wire industry but also by the wire departments of rolling mills and other concerns. The total value of products shown is more than double that of the "wire" industry in the narrower sense. Comparable statistics in detail for 1904 and 1899 are not available for the total wire production, as special reports were not secured prior to 1909 from wire mills drawing wire from purchased rods.

The wire departments of rolling mills and establishments drawing wire as a minor product or by-product from purchased rods, reported wire and wire products to the value of \$90,759,534 in 1914, as compared with \$95,597,004 in 1909. Among these establishments there were 24 iron and steel rolling mills, with wire products valued at \$74,972,923, and 19 establishments manufacturing brass and bronze products, with wire products valued at \$14,936,611 in 1914, as compared with 23 rolling mills with products of \$78,894,036 and 10 establishments making brass and bronze products to the value of \$11,443,940 in 1909.

Table 80

THE WIRE INDUSTRY (TONS OF 2,000 POUNDS).

	Total.		Wire mills. (Wire rods purchased.)		Wire departments of rolling mills. (Wire rods rolled.)	
	1914	1909	1914	1909	1914	1909
	Number of establishments—	99	93			
Number drawing—			54	56	45	37
Iron and steel wire.....	68	74	43	47	25	27
Copper wire.....	28	27	17	17	11	10
Brass wire.....	28		10		18	
Other metals and alloys.....	16	17	7	8	9	9
MATERIALS.						
Total cost.....			\$56,424,494	\$60,542,931		
Wire rods, cost.....						
Steel—	\$104,621,056	\$112,799,516	\$43,374,763	\$50,810,983	\$61,246,293	\$61,988,533
Tons.....	2,495,201	2,514,504	847,833	850,729	1,647,318	1,663,775
Cost.....	\$59,161,732	\$67,439,887	\$21,609,338	\$23,021,867	\$37,552,394	\$44,413,020
Produced by consumers—						
Tons.....	2,030,735	2,002,851	395,694	361,065	1,635,041	1,641,786
Assigned cost.....	\$46,356,401	\$53,462,671	\$9,091,973	\$9,716,501	\$37,264,428	\$43,746,170
Purchased—						
Tons.....	464,466	511,653	452,189	489,664	12,277	21,989
Cost.....	\$12,805,331	\$13,977,216	\$12,517,365	\$13,305,366	\$287,966	\$671,850
Bessemer steel—						
Tons.....	948,552	1,148,353	539,379	558,048	409,173	500,305
Cost.....	\$21,049,599	\$28,340,445	\$12,081,408	\$13,936,178	\$8,965,191	\$14,404,267
Open-hearth steel—						
Basic—						
Tons.....	1,483,968	1,255,747	279,260	233,105	1,204,708	1,022,642
Cost.....	\$36,150,376	\$35,046,106	\$8,368,034	\$6,695,310	\$27,782,842	\$28,350,796
Acid—						
Tons.....	56,527	103,509	23,235	52,856	33,292	50,653
Cost.....	\$1,651,223	\$3,486,071	\$860,643	\$1,841,051	\$790,580	\$1,645,020
Crucible and other steel—						
Tons.....	6,154	6,895	6,009	6,720	145	175
Cost.....	\$313,034	\$567,265	\$299,253	\$549,328	\$13,781	\$17,937
Iron—						
Tons.....	2,579	4,849	2,579	1,055		3,794
Cost.....	\$121,651	\$207,846	\$121,651	\$62,203		\$145,643
Copper—						
Tons.....	141,214	151,951	73,545	102,394	67,669	49,557
Cost.....	\$39,653,902	\$40,916,084	\$20,214,926	\$27,462,312	\$19,433,976	\$13,453,772
Brass—						
Tons.....	19,513	(1)	1,950	(1)	17,563	(1)
Cost.....	\$4,758,406	\$4,235,699	\$695,107	\$264,601	\$4,063,299	\$3,971,098
Other metal, cost.....	\$925,365		\$733,741		\$191,624	
Bronze—						
Tons.....	107	(1)	107	(1)		(1)
Cost.....	\$32,293	(1)	\$32,293	(1)		(1)
German silver—						
Tons.....	375	(1)	(1)	(1)	375	(1)
Cost.....	\$149,871	(1)	\$47	(1)	\$149,824	(1)
All other, cost.....	\$743,201	(1)	\$701,401	(1)	\$41,800	(1)
Wire purchased, plain or coated, cost.....	\$1,994,839	\$2,855,911	\$537,759	\$429,390	\$1,457,080	\$2,426,521
Steel or iron—						
Tons.....	36,290	(1)	8,875	(1)	27,415	(1)
Cost.....	\$1,816,382	(1)	\$359,302	(1)	\$1,457,080	(1)
Copper—						
Tons.....	599	(1)	599	(1)		(1)
Cost.....	\$178,457	(1)	\$178,457	(1)		(1)
Fuel and rent of power.....			\$1,813,172	\$1,640,172		
All other materials.....			\$10,693,800	\$7,662,386		
Wire, drawn, whether for consumption or for sale, tons:						
Steel and iron.....	2,435,530	2,389,136	\$21,569	787,322	1,613,961	1,601,814
Copper.....	138,924	147,156	72,401	101,830	66,523	45,266
Brass.....	19,491		1,884		17,607	
Bronze.....	106	17,411	106			
German silver.....	375		(1)	1,051	375	16,360
Other metal.....	\$2,931		2,563		418	

See footnotes on p. 132.

Table 80—Continued.

THE WIRE INDUSTRY (TONS OF 2,000 POUNDS).

PRODUCTS.	Total.		Wire mills. (Wire rods purchased.)		Wire departments of rolling mills. (Wire rods rolled.)	
	1914	1909	1914	1909	1914	1909
	Total value.....	\$172,600,546	\$180,083,522	\$81,841,012	\$84,486,518	\$90,759,534	$95,597,004
Wire and manufactures of wire.....	\$166,999,888	\$173,349,614	\$78,150,487	\$79,249,869	\$88,849,401	\$94,099,745
Steel and iron—						
Tons.....	2,465,383	2,471,858	835,928	821,929	1,629,455	1,649,929
Value.....	\$116,215,503	\$120,585,637	\$48,809,661	\$47,934,204	\$67,405,842	\$72,651,433
Plain wire—						
Tons.....	459,909	472,046	206,575	188,846	253,334	283,200
Value.....	\$22,316,778	\$22,632,230	\$12,921,557	\$11,349,868	\$9,395,221	\$11,282,362
Coated wire—						
Tons.....	374,478	354,405	156,016	155,059	218,462	199,346
Value.....	\$15,949,531	\$16,212,851	\$7,123,026	\$7,473,167	\$8,826,505	\$8,739,684
Wire nails and spikes—						
Kegs (100 pounds).....	12,886,634	13,926,861	3,209,925	3,449,753	9,676,709	10,477,108
Value.....	\$23,368,633	\$27,575,774	\$6,048,598	\$7,142,047	\$17,320,035	\$20,433,727
Wire brads, tacks, and staples—						
Tons.....	33,335	28,125	9,188	7,334	24,147	20,791
Value.....	\$1,324,948	\$1,324,170	\$386,271	\$320,224	\$988,677	\$1,003,946
Barbed wire—						
Tons.....	343,693	323,565	69,232	76,268	274,461	247,297
Value.....	\$13,764,367	\$13,881,517	\$2,823,668	\$3,343,856	\$10,940,699	\$10,537,061
Wire rope and strand—						
Tons.....	52,735	45,303	43,217	34,140	9,518	11,163
Value.....	\$7,973,537	\$6,683,771	\$6,881,138	\$5,450,064	\$1,092,399	\$1,233,707
Woven-wire fence and poultry netting—						
Tons.....	411,460		128,379		283,081	
Value.....	\$19,795,812		\$6,763,469		\$13,032,343	
Other woven-wire products—		426,927		115,889		311,038
Tons.....	22,721	\$22,669,470	8,614	\$6,724,077	14,107	\$15,945,393
Value.....	\$2,822,639		\$915,490		\$1,907,199	
Other fabricated iron and steel-wire products—						
Tons.....	122,720	125,145	54,211	71,906	68,509	53,239
Value.....	\$8,899,208	\$9,605,145	\$4,946,444	\$6,130,901	\$3,952,764	\$3,474,953
Copper—						
Tons.....	135,437	154,231	87,119	102,604	48,318	51,627
Value.....	\$42,928,550	\$47,184,164	\$27,324,290	\$30,831,646	\$15,604,260	\$16,352,518
Bare wire—						
Tons.....	84,921		54,210		30,711	
Value.....	\$26,206,024		\$16,177,678		\$10,028,346	
Insulated wire—		4130,482		4102,418		37,064
Tons.....	48,386	\$42,336,274	32,410	\$30,736,728	15,976	\$11,599,546
Value.....	\$5,175,709,244		\$10,855,232		\$4,854,012	
Woven and other fabricated copper-wire products—						
Tons.....	2,130	14,749	499	186	1,631	14,563
Value.....	\$1,013,282	\$4,847,890	\$291,380	\$94,918	\$721,902	\$4,752,972
Brass-wire and fabricated brass-wire products—						
Pounds.....	39,614,500		4,361,148		35,253,352	
Value.....	\$6,366,342		\$850,017		\$5,516,325	
German silver—						
Pounds.....	749,224		203		749,021	
Value.....	\$238,078	\$5,579,813	\$170	\$484,019	\$237,908	\$5,095,794
All other metals and alloys—						
Pounds.....	6,180,174		5,344,527		835,647	
Value.....	\$1,251,415		\$1,166,349		\$85,066	
Finished products, other than wire and wire manufactures, value.....	\$2,581,000		\$2,088,590		\$492,410	
All other products, including scrap, dross, etc., value.....	\$2,692,302	\$6,501,069	\$1,439,465	\$5,083,899	\$1,252,837	\$1,417,170
Amount received for custom work and repairing.....	\$327,356	\$232,839	\$162,470	\$152,750	\$164,886	\$80,089

See footnotes on p. 132.

	THE WIRE INDUSTRY (TONS OF 2,000 POUNDS).					
	Total.		Wire mills. (Wire rods purchased.)		Wire departments of rolling mills. (Wire rods rolled.)	
	1914	1909	1914	1909	1914	1909
EQUIPMENT.						
Wire-drawing blocks:						
Total number.....	51,181	43,697	33,242	28,119	17,939	15,578
Rod.....	7,503	(1)	3,005	(1)	4,498	(1)
Redrawing.....	9,067	(1)	6,565	(1)	2,502	(1)
Fine wire (below No. 20).....	34,611	(1)	23,672	(1)	10,939	(1)
Annual capacity, tons.....	3,852,000	3,214,000	1,249,000	1,065,000	2,603,000	2,149,000
Wire-nail machines:						
Number.....	5,212	4,428	1,318	1,207	3,894	3,221
Annual capacity, kegs (100 pounds).....	23,904,000	18,757,000	5,965,000	4,694,000	17,939,000	14,063,000
Woven-wire fence machines:						
Number.....	583	446	161	198	422	248
Annual capacity, tons.....	732,000	481,000	190,000	135,000	542,000	346,000

¹ Figures not available.

² Includes copper-clad steel, nickel and nickel alloys, resistance composition, silver and zinc.

³ Less than one-fourth ton.

⁴ Does not include the increase in value due to insulation of insulated wire. Value of bare wire (included) used for making insulated wire, \$5,702,870.

⁵ Value of insulated wire and cable made by all establishments: 1914, \$69,505,573; 1909, \$51,624,737.

⁶ Includes value of insulation of insulated wire; see Note 4.

The statistics for the industry designated as "wire" for each census from 1849 to 1914, inclusive, are given in Table 223. The differences in methods of classification render the statistics for 1889 entirely incomparable with those for later censuses, and the latter in turn have little significance for comparison with one another because of changes in the relative extent to which the wire business has been conducted in rolling mills and in establishments of other industries. The data given for 1904 and 1899 do not include those for establishments drawing wire and manufacturing the entire product into nails or other articles, but statistics for such establishments are included in the figures for 1909 and 1914.

WIREWORK, INCLUDING WIRE ROPE AND CABLE, NOT ELSEWHERE SPECIFIED.

The articles manufactured by establishments under this classification are made chiefly of steel, brass, and copper wire, either round or flat. The most important products are woven-wire fencing, wire cloth and netting, and wire rope and cable. There are, however, many minor products, such as wire baskets, bird cages, buckles, broilers, ornamental fences, gates, flexible steel tubing, desk trays, fly killers, gopher and game traps, kitchen wire goods, milk-bottle carriers and racks, metal reinforcement for concrete construction, millinery wire, mats, porch swings, paper clips, rat and mouse traps, ring travelers for cotton yarn and other wire parts for textile machinery, wire springs of steel, brass, and phosphor-bronze, skewers, meat forks, sheet-steel band hoops, umbrella runners, wire designs for florists, pile wire for carpet mills, wire guards for windows, skylights, elevators, bank railings and wickets, coat hangers, hooks, frames, plate racks, letter files, and wire cloth for use on Fourdrinier machines in the manufacture of paper.

Table 67 presents separate statistics for the establishments engaged primarily in manufacturing wire rope and cable, for those making woven-wire fencing, and for those making chiefly other products included in the classification. Establishments assigned to the first two subclasses make some products similar to those of establishments assigned to the third, and vice versa. General statistics for the industry from 1859 to 1914 are given in Table 223 (p. 710).

Woven-wire fencing to the value of \$294,625 was reported by manufacturers of other wirework, and to the value of \$201,738 by establishments assigned to other industries, namely, agricultural implements and structural ironwork, while "all other" wirework to the value of \$63,825 was reported by other manufacturers of wirework, and to the value of \$2,064,336 by establishments assigned to other classifications, principally structural ironwork. Moreover, establishments assigned to the "wire" industry, and wire departments of iron and steel rolling mills and other concerns, made large quantities of similar products, the value of which is shown in Table 80. The production of insulated wire is mainly conducted by establishments engaged in the manufacture of electrical machinery, apparatus, and supplies. (See Table 162, p. 243.) Wirework to the value of \$944,014 was reported in 1909 by establishments assigned to other classifications.

LUMBER AND ITS REMANUFACTURES.

THE GROUP AS A WHOLE.

This group includes the production of lumber and its remanufactures. It embraces practically all of the industries in which wood in some form is the material of chief value. It is necessary, however, in some cases to include statistics for allied products, although no wood is used in their production. For example, the statistics for furniture include the manufacture of metal furniture and of metal store and office fixtures.

The following table shows the number of establishments, average number of wage earners, capital, total wages paid, cost of materials, value of products, and value added by manufacture for each of the industries included in the general group as reported for the census of 1914:

INDUSTRY.	LUMBER AND ITS REMANUFACTURES: 1914.						
	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Total.....	42,036	833,529	\$1,723,456	\$440,308	\$762,350	\$1,599,710	\$837,360
Lumber and timber products.....	27,229	479,786	916,574	239,977	281,952	715,310	433,358
Pulp wood.....	20	421	647	195	334	631	297
Lumber, planing-mill products, not including planing mills connected with sawmills.....	5,841	96,214	266,805	61,949	184,227	307,673	123,446
Window and door screens and weather strips.....	220	3,194	9,355	1,894	4,261	9,167	4,906
Window and door screens.....	190	3,068	8,698	1,827	4,005	8,463	4,461
Weather strips.....	30	96	657	67	256	701	445
Boxes, wooden packing.....	1,174	33,548	66,694	18,206	52,840	86,567	33,727
Boxes, cigar.....	238	5,835	5,270	2,299	4,269	8,337	4,068
Cooperage.....	1,259	17,128	36,690	9,161	32,944	50,017	17,073
Hogsheads and barrels.....	1,110	14,133	31,519	7,622	29,096	43,428	14,332
All other.....	149	2,995	5,171	1,539	3,848	6,589	2,741
Wooden goods, not elsewhere specified.....	274	6,418	10,440	2,767	4,952	10,162	5,210
Wood, turned and carved.....	828	11,615	17,836	5,645	9,166	19,047	9,881
Lasts.....	66	2,094	4,481	1,511	1,343	4,589	3,246
Furniture.....	3,192	127,881	267,885	71,816	121,436	265,706	144,220
Wood, other than rattan and willow.....	2,251	96,417	196,820	51,675	85,443	187,927	102,484
Rattan and willow.....	85	2,262	3,371	1,281	2,014	5,022	3,008
Metal.....	173	12,560	35,231	7,956	18,036	34,439	16,403
Store and office fixtures.....	683	16,642	32,463	10,904	15,993	38,318	22,325
Refrigerators.....	134	5,617	14,511	3,572	7,343	15,052	7,709
Show cases.....	132	2,257	4,155	1,466	2,248	5,233	2,985
Billiard tables and materials.....	54	1,453	5,438	985	2,488	4,894	2,406
Looking-glass and picture frames.....	438	4,787	8,049	2,850	4,468	11,014	6,546
Sewing-machine cases.....	4	3,699	6,425	2,230	2,841	5,846	3,005
Baskets, and rattan and willow ware.....	419	4,574	4,591	1,923	2,999	6,578	3,579
Coffins, burial cases, and undertakers' goods.....	287	9,468	29,731	5,382	13,257	26,325	13,068
Rules, ivory and wood.....	10	408	883	224	187	634	447
Cork, cutting.....	52	3,454	7,602	1,582	4,751	7,875	3,124
Matches.....	20	3,800	11,736	1,758	5,202	12,556	7,354
Pulp goods.....	24	1,654	6,862	884	2,191	4,483	2,292
Wood carpet.....	6	166	147	166	308	557	249
Charcoal, not including production in the lumber and wood distillation industries.....	47	228	494	81	233	402	169
Wood preserving.....	68	2,830	20,155	1,785	16,060	21,055	4,995

LUMBER AND TIMBER PRODUCTS.

This classification includes establishments engaged in the manufacture of lumber and timber products, and is the basic industry of the group. While a considerable proportion of the products are sold directly to the final consumer and used principally for building operations, large quantities are used as material in the other branches of

manufacture included in this group. The statistics cover logging camps, sawmills, and also planing mills when operated in connection with sawmills. The principal products of logging camps are sawlogs; shingle, stave, and heading bolts; telegraph and telephone poles; mine timbers; spars; piling; fence posts; hewn railway ties; and wheel, handle, and excelsior stock. Those of sawmills include shakes, pickets, rough and dressed lumber, shingles, cooperage and cooperage stock, spool stock, pencil stock, penholder stock, veneer stock, box shooks, veneers, lath, and sawed railway ties. When, as is usually the case, the logging and sawing are done by the same concern, there is no duplication in value of products, but where logs are purchased from other establishments such duplication is unavoidable. The cost of materials includes the value of the standing timber, even when owned by the operator. The classification in its present form appeared first at the census of 1899. In 1889 there were two classifications, "lumber and other mill products from logs and bolts" and "timber products not manufactured at mills;" in 1879 three classifications, "lumber, sawed," "shingles, split," and "veneering"; in 1869 three classifications, "lumber, sawed," "staves, shooks, and headings," and "veneering"; in 1859 six classifications, "lumber, sawed," "masts and spars," "shingles and lath," "staves, headings, hoops, and shooks," "timber cut and timber hewed," and "veneers"; and in 1849 seven classifications, "lumber, sawed and planed," "barrel heading," "shingles," "staves," "staves and shooks," "timber hewers," and "masts and spars." It is uncertain to what extent logging camps, especially if not connected with sawmills, were covered at the earlier censuses.

Statistics for the industry as reported for each census from 1849 to 1914 are given in the following table, the separate classes shown at the earlier censuses being combined. The statistics include camps engaged in cutting pulp wood. The production of pulp wood was not fully reported for 1914 and was even more defectively reported at prior enumerations. Except for 1849 the statistics are fairly comparable.

CENSUS YEAR.	LUMBER AND TIMBER PRODUCTS AND PULP WOOD.							
	Number of establishments.	Wage earners (average number).	Primary horse-power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	27, 249	480, 207	2, 247, 092	\$917, 221.	\$240, 172	\$282, 286	\$715, 941	\$433, 655.
1909.....	33, 090	547, 173	2, 316, 694	863, 871	238, 867	265, 560	753, 388	487, 828
1904.....	19, 121	404, 563	1, 490, 816	517, 019	182, 950	183, 708	579, 777	396, 069
1899.....	23, 043	413, 257	1, 375, 139	400, 707	147, 952	242, 618	555, 043	312, 425
1880.....	22, 607	311, 886	960, 865	557, 775	87, 916	212, 532	437, 899	195, 367
1879.....	25, 758	148, 290	821, 928	181, 465	31, 893	146, 313	233, 609	87, 296
1869.....	25, 842	150, 091	641, 665	143, 723	40, 054	103, 473	210, 401	106, 928
1859.....	20, 870	77, 439	(1)	75, 692	22, 197	45, 369	98, 680	53, 311
1849 ²	18, 769	55, 810	(1)	41, 444	13, 788	28, 329	60, 413	32, 084

¹ Figures not available.

² "Lumber, sawed and planed."

Lumber and timber products to the value of \$612,500 were reported in 1914 by establishments engaged primarily in the manufacture of other products, chiefly furniture, and planing mill and box factory products.

At the censuses of 1914 and 1904 the special agents were instructed not to secure reports for mills engaged exclusively in sawing for local custom consumption. Mills of this class were reported at the censuses of 1909 and 1899, but statistics for them have been excluded as far as possible from the totals given in Table 82. In many instances it is impossible to determine definitely the class of work and it is probable that statistics for more of the small mills have been included at some of the censuses since 1899 than at others. This condition should be considered in comparing the totals for the various censuses. For censuses prior to 1899 custom mills are included in Tables 82 and 223. It is impracticable to revise the figures for these earlier censuses, but as the value of products reported by mills doing custom work exclusively is comparatively small, the inclusion of data for such mills does not greatly affect the comparability of the statistics except for the number of establishments.

Annual statistics for the production of lumber, lath, shingles, pulp wood and other forest products were collected from 1906 to 1912 by the Census Bureau in cooperation with the Forest Service of the Department of Agriculture. This joint work was discontinued in 1913, when the statistics for the production of lumber were collected by the Forest Service. The data for 1914 were collected by the Bureau of the Census and turned over to the Forest Service to be compiled. The totals for 1914 given in Table 83 are the result of this compilation while those for 1909, 1904, and 1899 were compiled in connection with the census of manufactures.

PRODUCT.	QUANTITY (M FEET, BOARD MEASURE).			
	1914	1909	1904	1899
Total.....	37,346,023	44,509,761	34,135,139	135,084,166
Softwoods.....	29,406,839	33,896,959	27,353,312	26,153,063
Yellow pine.....	14,471,004	16,277,185	11,521,781	9,658,548
Western pine.....	1,327,365	1,499,985	1,290,526	944,560
White pine.....	2,632,587	3,900,034	5,332,704	7,742,391
Douglas fir.....	4,768,693	4,856,378	2,928,409	1,736,507
Hemlock.....	2,165,728	3,051,399	3,268,787	3,420,673
Spruce.....	1,247,414	1,743,547	1,303,886	1,448,021
Cypress.....	1,013,013	955,635	749,592	495,836
Redwood.....	535,199	521,630	519,267	360,157
Cedar.....	499,903	346,008	223,035	232,978
All other.....	750,933	740,153	215,325	113,312
Hardwoods.....	7,939,184	10,612,802	6,781,827	8,634,021
Oak.....	3,278,908	4,414,457	2,902,855	4,438,027
Maple.....	909,763	1,106,604	587,558	633,466
Red gum.....	675,380	706,945	523,990	285,417
Chestnut.....	540,591	663,891	243,537	206,688
Birch.....	430,667	452,370	224,009	132,601
Basswood.....	264,656	399,151	228,041	308,069
Elm.....	214,294	347,456	253,330	450,731
Cottonwood.....	195,193	265,600	321,574	415,124
Ash.....	189,499	291,209	169,173	269,120
Hickory.....	116,113	333,929	106,824	96,636
Walnut.....	25,573	46,103	31,455	33,681
Sycamore.....	22,773	56,511	18,092	29,715
All other.....	1,075,769	1,523,571	1,166,474	1,323,746

¹ Includes 297,032 M feet of lumber, board measure, reported as "other sawed products," and not by kinds of wood.

PULP WOOD.

Separate statistics were not shown prior to 1914 for the production of wood for the manufacture of pulp, but were included to some extent under those for "lumber and timber products." Some pulp mills own the timberland and have the wood cut by their own employees; others have it cut under contract. The statistics for these operations when carried on by pulp mills are, of course, included in those for the mill and when done in connection with the cutting of logs for sawmills, are included in those for the lumber industry. It is impracticable to collect complete data for the industry, therefore the figures must not be accepted as representing the total production.

LUMBER, PLANING-MILL PRODUCTS, NOT INCLUDING PLANING MILLS CONNECTED WITH SAWMILLS.

The establishments included in this classification manufacture principally dressed lumber; sash, doors, and blinds; interior woodwork; and moldings. Among the minor products are cattle stanchions, water vats and cisterns, wooden tanks, wooden pipe, wooden covering for water and steam pipes, door jams and facings, flooring, ceilings, mantels, stairs, and stair rails, newel posts, columns, panels, interior trim, wainscoting, shelving, scaffolds, flagpoles, crosses for graves, clothes poles and horses, portable houses, greenhouse construction work, tight cooperage, churns, cratings, match blocks, workbenches, knees for boats, irrigation gates, etc.

The manufacture of these various products was combined for the first time at the census of 1899 under the heading "lumber, planing-mill products, including sash, doors, and blinds." In 1879 "lumber, planed," and "sash, doors, and blinds" were considered separately. In 1869, in addition to "lumber, planed," and "sash, doors, and blinds," another classification appeared—"wood brackets, moldings, and scrolls." In 1859 "pump logs," "drainpipe, wooden," and "splints" were shown, in addition to "lumber, planed," and "sash, doors, and blinds." In 1849 "sash and blinds" was the only separate classification covering products now assigned to the planing-mill branch of the lumber industry. The figures published for that year under "lumber, sawed and planed," are included in the totals shown in Table 85 (p. 136), which gives general statistics for the lumber and timber industry from 1849 to 1914, inclusive.

In the following table which covers the same period, the various classes of planing-mill products distinguished at the earlier censuses are combined. The figures for

1849 are not comparable, and, as already stated, the large planing-mill business done by establishments which operate sawmills is not covered.

The census of 1914 includes the statistics for window and door screens and weather strips, which are shown as a separate industry.

CENSUS YEAR.	Number of establishments.	Wage earners (average number).	Primary horsepower.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	6,061	99,408	423,005	\$276,160	\$63,843	\$188,488	\$316,840	\$128,352
1909.....	6,402	112,392	410,950	257,748	64,536	196,080	327,398	131,318
1904.....	5,009	97,674	309,857	177,146	50,714	143,138	247,442	104,304
1899.....	4,198	73,510	228,731	118,949	32,622	99,569	167,786	68,217
1889.....	3,670	79,923	178,094	120,271	42,222	104,927	183,682	78,155
1879.....	2,491	37,187	(1)	38,071	14,432	45,268	73,425	28,157
1869.....	2,783	34,766	65,614	40,079	16,717	46,947	80,278	33,331
1859.....	1,456	11,179	(1)	9,581	4,087	12,180	21,237	9,057
1849 ²	433	2,497	(1)	1,066	841	860	2,277	1,417

¹ Figures not available.

² Sash and blinds only.

The decrease in the value of products of the planing-mill branch of the lumber industry between 1889 and 1899 was due to the increase in the relative amount of planed lumber manufactured in establishments classified as sawmills. The apparent decrease between 1869 and 1879 results from the fact that the values for 1869 were reported in currency, which was worth only about 80 cents gold to the dollar.

In addition to the products shown, establishments assigned to other industries reported planing-mill products to the value of \$3,731,227 in 1914 and to the value of \$3,025,621 in 1909.

Dressed lumber, sash, doors, and blinds, and other planing-mill products are produced in large quantities in sawmills, and the figures should not be accepted as representing the entire production of dressed lumber or planing-mill products.

The four classifications, "lumber and timber products," "pulp wood," "lumber, planing-mill products, not including planing mills connected with sawmills," and "window and door screens and weather strips" are so closely related that the comparison of separate totals compiled from census to census may be misleading. Therefore the figures for all four classes are combined and presented in Table 85. This table gives the statistics for 1849 to 1914, inclusive, and the totals for each census are as nearly comparable as it is possible to make them.

CENSUS YEAR.	Number of establishments.	Wage earners (average number).	Primary horsepower.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	33,310	579,615	2,670,097	\$1,193,381	\$304,015	\$470,774	\$1,032,781	\$562,007
1909.....	39,492	659,570	2,727,584	1,121,619	303,403	461,640	1,080,786	619,146
1904.....	24,130	502,237	1,800,673	694,165	233,664	326,846	827,219	500,373
1899.....	27,241	436,767	1,603,870	519,656	180,574	342,187	722,829	380,642
1889.....	26,277	391,509	1,138,959	678,046	130,138	347,459	621,581	274,122
1879.....	28,249	185,477	1,821,928	219,536	46,325	191,581	307,034	115,453
1869.....	28,625	184,857	707,279	183,802	56,771	150,420	290,679	140,259
1859.....	22,326	88,618	(3)	85,273	26,284	57,549	119,917	62,368
1849.....	19,202	58,307	(2)	42,510	14,629	29,189	62,690	33,501

¹ Exclusive of horsepower for planing mills, as figures are not available.

² Figures not available.

WINDOW AND DOOR SCREENS AND WEATHER STRIPS.

This classification includes establishments engaged in the manufacture of window screens, door screens, and weather strips, whether of metal, wood or other material. The statistics have been compiled to show separate data for those establishments whose principal product is window and door screens and those manufacturing weather strips as their product of chief value. (See Table 81.) Prior to 1914 this classification was not shown as a separate industry, but was included under "lumber, planing-mill products;" therefore comparable figures are not available. In addition to the products covered by the table, window and door screens to the value of \$158,970, and weather strips to the value of \$48,859 were reported by establishments assigned to other classifications.

BOXES, WOODEN PACKING.

Box shooks, trunk slabs, bottle boxes, wooden boxes used for packing, crates for butter, fruits, berries, and vegetables, egg cases and cases for canned goods, carrier trays, and wine cases are the principal products reported for establishments included under this classification.

The various kinds of boxes here included were first assembled under one classification in 1879. In 1869 "boxes, cheese," and "boxes, tobacco" (not cigar boxes), were shown separately from "boxes, wooden packing." In 1859, statistics were presented for the manufacture of "boxes, sugar" and of "box shooks," as well as of cheese, tobacco, and packing boxes. In 1849 "boxes, cheese," was segregated from the main classification of "boxes, packing." The figures for these separate classifications have been combined and are given in Table 223 for the census years from 1849 to 1914, inclusive.

Many manufacturing concerns in a variety of industries make packing boxes for their own products, but the census schedules did not call for the value of such containers as a separate item.

In addition to the value included in Table 223 and to that made by manufacturers for their own use, boxes to the value of \$7,225,335 in 1914 were reported by manufacturers of other products, principally planing-mill and sawmill products, paper boxes and cartons, cooperage, tinware, and machine-shop products.

BOXES, CIGAR.

The cigar boxes manufactured by the establishments included in this classification are made from wood. During recent years paper cigar boxes have been largely used, and their production is included under "boxes, fancy and paper" (see Table 96, p. 152). Their increased use has apparently retarded the development of the wooden cigar-box industry. Part of the decrease from 1889 to 1899 may be attributed to changes in classification. Comparative statistics for the industry are given in Table 223 for the census years from 1859 to 1914, inclusive.

In addition to the value of products covered by the table, wooden cigar boxes to the value of \$691,029 in 1914 and of \$399,095 in 1909 were reported by establishments engaged primarily in the manufacture of planing-mill products, cigars and cigarettes, wooden packing boxes, and fancy and paper boxes.

COOPERAGE.

This classification includes establishments engaged in the manufacture of casks, kegs, tierces, barrels, hogsheads, wooden tubs, tanks, vats, and similar articles from staves. Establishments making staves and other cooperage materials, unless they also make finished products, are not covered by this classification, but the statistics are included under "lumber and timber products."

In 1914 separate statistics for establishments manufacturing "hogsheads and barrels" and for those making "all other" cooperage products were compiled, and are presented in Table 81, each establishment being classified according to its product of chief value.

Hogsheads and barrels to the value of \$101,697 were reported by establishments making "other" cooperage products, and to the value of \$874,355 by establishments assigned to other industries, principally lard compounds, wooden packing boxes, and petroleum refineries.

Other cooperage products to the value of \$39,452 were reported as made by manufacturers of hogsheads and barrels, and to the value of \$266,862 by establishments assigned to other classifications, such as wooden packing boxes, wooden goods, not elsewhere specified, machine shops, windmills, etc. Statistics for the industry from 1849 to 1914 are presented in Table 223 (p. 605).

The slight increase in value of products between 1904 and 1909 does not fully represent the increase in the manufacture of barrels and similar containers, as a constantly increasing number are made by flour mills, refiners of sugar, molasses, and petroleum, meat packers, manufacturers of lime and of cement, and evaporators of salt. Containers so made are not, as a rule, covered by the table, although where they were made in more or less distinct plants data for such plants were secured, if possible, and included with those for the cooperage industry. The value of the containers made by establishments in other industries is ordinarily included as part of the value of the specific products contained, though in some cases containers remaining unused at the end of the year are reported under "all other products." The extent of the manufacture of barrels by flour mills is shown by the fact that 229 mills reported such manufacture. The large petroleum refineries, as a rule, returned separate reports for their cooperage plants.

WOODEN GOODS, NOT ELSEWHERE SPECIFIED.

This classification includes establishments engaged primarily in the manufacture of articles for kitchen, dairy, laundry, and miscellaneous uses, such as wooden dishes, trays, bowls, meat boards, salt boxes, knife boxes, rolling pins, potato mashers, butter bowls and dishes, chopping bowls, butter molds, churns, tubs, washboards, pulleys, clothes reels, clothespins, curtain stretchers, coat hangers, clothes bars, drying racks for clothes, ironing boards and tables, garment hangers, tailors' pressing blocks; bakers' shovels, boxes, and woodenware; flagpoles, clothes poles, candy sticks, butcher supplies, racks, bird houses, scaffolds, labels for trees, wood filter plates, toothpicks, grain measures, ladders, etc. There is, as already stated, considerable overlapping in products between this industry and "cooperage" and there is also some overlapping between it and "furniture" and "house-furnishing goods, not elsewhere specified." The statistics for the industry were published under "woodenware" in 1849, 1859, and 1869, and under "woodenware, not elsewhere specified," for 1879, 1889, 1899, and 1904. General statistics for the industry are given in Table 223 (p. 712).

In 1914 establishments engaged primarily in other classes of manufacture reported wooden goods, not elsewhere specified, to the value of \$1,229,518.

WOOD, TURNED AND CARVED.

This classification covers establishments manufacturing principally articles of wood, turned, carved, or sawed by scroll or jig saws. The products include among others, fretwork, grille work; handles for brooms, axes, hammers, picks, cutlery, tools, sad irons, and packages; rollers, wheels, reels, spools, spindles, bobbins, plugs, bungs, blocks, molds, racks, bowling balls, tenpins, novelties, brackets, legs for furniture, carved frames, arms and limbs for wax figures, stationary racks, inkstand bases, desk trays, umbrella stands, candlesticks, jewelry cases, shuttles, billiard cues, hockey sticks, coat hangers, mallets, brush blocks, spokes, ladder rounds, oars, whiffletrees, surveyors' stakes, balusters and columns, sticks for flags and rockets, rolling pins, bread plates, and souvenirs. In 1879 there were two classifications—"wood, turned and carved," and "handles, wooden." In 1859, in addition to "carving" and "turning, scroll sawing, and molding," there were "broom handles," "brush blocks," "brush handles and stocks," "handles," "money drawers," "plugs and wedges," "wooden clothes frames," and "wooden door knobs." In 1849 statistics were shown for "bobbins and spools," for "carvers," and for "turners." These separate classes have been combined for comparative purposes in Table 223 (p. 712).

In addition to the products covered by the table, wood, turned and carved, to the value of \$990,954 in 1914, and to the value of \$1,062,877 in 1909, were reported by establishments assigned to other classifications, such as "lumber and timber products," "hardware," "furniture," and "tools," not elsewhere specified. Many concerns turn and carve wood in connection with the manufacture of various finished products, but they did not make a separate report for such work in their returns.

LASTS.

Establishments manufacturing principally trees, stretchers, and display forms for boots and shoes, fiber tops for lasts, and lasts for rubber and leather boots and shoes, are included in this classification. The industry designation has been "lasts" since 1849, except in 1859, when it was "lasts and boot-trees." General statistics for the industry are presented in Table 223 (p. 647).

In addition to the products covered by the table, lasts to the value of \$150,967 were reported in 1914 by establishments assigned to other industries, namely, "boot and shoe cut stock," "boots and shoes, rubber," and "foundry and machine-shop products."

FURNITURE.

This industry includes establishments engaged in the manufacture of cabinetwork and wood and metal furniture of all kinds, including hall stands, hat-trees, tables, chairs, couches, tabourets, music cabinets and stands, consoles, pedestals, sideboards, buffets, china closets, desks, sectional and other bookcases, bedsteads, dressers, chiffoniers, wardrobes, shirt-waist boxes, cedar chests, commodes, cradles, baby walkers, medicine cabinets, office, school, church, and hospital furniture, folding and cabinet beds, cots, davenportis, sofas, settees, divans, cribs, piano and other benches, stepladder chairs, back rests, tea wagons, rolling trays, flower stands, hatracks and racks for books and magazines, stools, telephone stands, easels, kitchen safes and cabinets, lamp stands, clock cases, store and office fixtures, telephone booths, counters, racks and stands for displaying merchandise, railroad-ticket cases, and similar products. Willow, reed, rattan, splint, bamboo, and rustic furniture are included.

The following table presents separate statistics for 1914 for the establishments engaged primarily in manufacturing wooden furniture, rattan and willow furniture, store and office fixtures, and metal furniture, respectively. Comparative statistics are given for 1914 and 1909. At the census of 1909 only a total for rattan and willow furniture and wood furniture, combined, was shown.

ESTABLISHMENTS MANUFACTURING PRIMARILY—	FURNITURE.						
	Number of estab- lish- ments.	Wage earn- ers (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by man- ufac- ture.
	Expressed in thousands.						
Total, 1914.....	3,192	127,881	\$267,835	\$71,816	\$121,486	\$205,706	\$144,220
1909.....	3,024	123,426	216,283	62,935	103,863	229,197	125,334
Wooden furniture, other than rattan and willow:							
1914.....	2,251	96,417	196,820	51,675	85,443	187,927	102,484
Rattan and willow furniture:							
1914.....	85	2,262	3,371	1,281	2,014	5,022	3,008
Wooden furniture, including rattan and willow:							
1909.....	2,185	96,504	167,632	47,123	76,332	170,488	94,156
Store and office fixtures:							
1914.....	683	16,642	32,463	10,904	15,993	38,318	22,325
1909.....	687	16,955	29,454	10,485	14,380	34,313	19,933
Metal furniture:							
1914.....	173	12,560	35,231	7,956	18,036	34,439	16,403
1909.....	152	9,967	19,197	5,227	13,151	24,396	11,245

There is considerable overlapping between the subgroups of the industry. Wood furniture to the value of \$502,404; rattan and willow furniture to the value of \$1,598,718; metal furniture to the value of \$244,381; and store and office fixtures to the value of \$624,731 were made by one or more of the other groups. In addition, wood furniture to the value of \$3,437,243; rattan and willow furniture to the value of \$212,753; metal furniture to the value of \$2,632,579; and store and office fixtures to the value of \$2,059,156—a total of \$8,341,731—were reported by establishments assigned to other industries.

At the censuses of 1889 and 1869 the classification "chairs" was shown separately, and in 1869 "iron bedsteads" also, but the data are combined with those for the general furniture industry in Table 223. In 1859 the industry bore the designation "furniture, cabinet, school, and other," and in 1849, "cabinet ware." Small shops making furniture to individual order were included at the censuses prior to 1899.

REFRIGERATORS.

This industry includes the manufacture of ice boxes and refrigerating show cases and counters, as well as of refrigerators. The statistics for the industry from 1859 to 1914, inclusive, are given in Table 223.

In addition to the products covered by the table, refrigerators to the value of \$551,278 were reported in 1914 by establishments assigned to other classifications, \$194,463 being reported by furniture makers.

SHOW CASES.

This classification covers the manufacture of show cases and display cases, wall cases, and cabinets. The production of counters and shelving is included with store and office fixtures, under "furniture" and with planing mills, but some of the establishments classified as "show cases" also manufacture these articles as subsidiary products. Statistics for establishments manufacturing show cases have been presented separately since 1859. Statistics from that year to 1914, inclusive, are given in Table 223.

In addition to the products covered by the table, show cases to the value of \$1,243,005 in 1914 and to the value of \$468,778 in 1909 were reported by establishments engaged primarily in the manufacture of other products—chiefly furniture.

BILLIARD TABLES AND MATERIALS.

In addition to establishments manufacturing billiard, pool, and bagatelle tables, bowling alleys, and materials used in their manufacture, this classification includes establishments producing supplies such as billiard cues and chalk, cue tips, ball and cue racks, chalk hangers, and pool and billiard balls. In 1869 the statistics were published under "billiard and bagatelle tables, cues, and materials." In 1859 there were two classifications—"billiard cues" and "billiard and bagatelle tables." Comparative statistics for the census years from 1859 to 1914, inclusive, are given in Table 223. The apparent decrease from 1889 to 1899 was due to a change in the classification of one of the largest establishments manufacturing this class of products in the country. In 1889 this establishment was included under "billiard tables and materials," but in 1899 it was classified under "furniture, factory products," as its chief product at the latter census was bar fixtures and office furniture.

In addition to the products shown in Table 223, billiard tables and materials to the value of \$518,330 in 1914 and to the value of \$429,830 in 1909 were reported as subsidiary products by manufacturers of window and door screens, furniture, etc.

LOOKING-GLASS AND PICTURE FRAMES.

Establishments manufacturing all kinds of frames—paper, plush, velvet, wood, or metal—for mirrors, pictures, photographs, or medallions are included in this classification. Passe partouts and the gilding of moldings are also among the products. The material of which the frames are made is largely the product of planing mills. The data for 1914, 1909, 1904, and 1899 relate only to establishments in the wholesale business, the many small shops which make frames to order not being canvassed. As the earlier censuses (those prior to 1899) included such small establishments, the figures in Table 223 for the censuses from 1849 to 1914, inclusive, are not strictly comparable.

In addition to the products shown in Table 223, establishments engaged primarily in the manufacture of planing-mill products, in lithographing and job printing, and in the manufacture of window shades and fixtures, reported mirror and picture frames to the value of \$302,124 in 1914, and to the value of \$404,605 in 1909.

SEWING-MACHINE CASES.

The principal products manufactured by establishments in this classification are sewing-machine cases, cabinet and other, and sewing-machine tables. They are mainly made of wood. Statistics for each census from 1879 to 1914, inclusive, are presented in Table 223.

At the census of 1859 statistics were returned for one establishment manufacturing sewing-machine cases, but no separate returns for the industry appeared at the census of 1869. This industry is closely allied to "sewing machines and attachments" and the returns do not show the extent of the industry, as many cases are made by the manufacturers of the complete machine.

BASKETS, AND RATTAN AND WILLOW WARE.

The establishments included in this classification manufacture market, butcher, laundry, and shipping baskets; fruit and berry baskets; fancy and toy baskets; candy and florists' baskets of splint, reed, willow, straw, rattan, and wicker; laundry and trunk hampers; coffee drums, and small articles of rattan and willow ware. Small fruit boxes, picking trays, and bottle and demijohn coverings, wicker boxes, reeds, chair cane, cane webbing, and rattan goods were also reported. Rattan and willow furniture are not covered by this classification, but are included under "furniture."

This industry was shown in 1869 and 1849 under the two classifications, "baskets" and "willow ware;" and in 1859 under the two classifications, "baskets" and "willow furniture and willow ware." Statistics for the industry for the census years from 1849 to 1914, inclusive, are given in Table 223 (p. 575).

In addition to the products covered by Table 223, baskets and rattan and willow ware to the value of \$406,542 in 1914, and to the value of \$500,609 in 1909 were reported by establishments engaged primarily in the manufacture of other products, principally lumber and timber products, furniture, wooden packing boxes, cooperage, etc., but the line of demarcation between the various kinds of products is not well defined.

COFFINS, BURIAL CASES, AND UNDERTAKERS' GOODS.

Coffins, whether made of wood or of metal, caskets, burial cases, shipping cases, and undertakers' supplies and accessories—such as burial garments, robes, shrouds, dresses and suits, gloves and slippers, and casket linings and draperies, ambulance baskets, door draperies, lowering devices, couches, embalming tables, embalming fluids, etc., are the principal products of establishments included in this classification. In 1869 and 1859 "coffins" was the title of the classification, but the figures are doubtless fairly comparable. Statistics for the industry are given in Table 223 for the census years from 1859 to 1914, inclusive.

In addition to the value of products shown in Table 223, coffins, burial cases, and undertakers' goods to the value of \$273,535 in 1914 and of \$333,453 in 1909 were reported by establishments engaged primarily in the manufacture of other products.

RULES, IVORY AND WOOD.

Statistics of establishments engaged in the manufacture of carpenters' rules, log rules, and commercial and advertising rules and yardsticks, and of office and school rulers are included under this classification. The products are made principally of hickory, maple, basswood, and boxwood, but rules made of ivory or other material are included. Statistics for the industry for the census years from 1879 to 1914, inclusive, are presented in Table 223. The apparent decrease in value of products from 1904 to 1909 is accounted for by the fact that one establishment which was included under this classification in 1904 and at previous censuses was classified under "tools, not elsewhere specified," in 1909. Had the value of the output of this establishment in 1909—which was a considerable item—been included in the table, an increase over 1899 would have been shown.

In addition to the product given in the table, rules to the value of \$73,814 were reported in 1914 by establishments assigned to other classifications.

CORK, CUTTING.

Statistics for establishments engaged in the manufacture of various articles from cork, including such products as life preservers and cork board for insulation, cork tips, but comprising chiefly bottle corks, are presented under this industry designation, which has appeared since 1869. At the census of 1849 there were two classifications, "corks" and "cork cutters." In 1859 the classification was "corks," and was probably somewhat less comprehensive. Table 223 presents statistics for the industry for the census years from 1849 to 1914, inclusive.

In addition to the product covered by the table, cork to the value of \$54,353 was reported in 1914 by establishments assigned to other industries, namely, iron and steel small boats, planing mills, and awnings, tents, and sails.

MATCHES.

The establishments included in this classification manufacture friction, parlor, and safety matches. Statistics are given in Table 223 for each census from 1849 to 1914, inclusive.

PULP GOODS.

In this classification are included establishments engaged in the manufacture from wood pulp or paper chemically treated of such articles as pails, kegs and boxes, tubs, cuspidors, vases, measures, coolers, bases, trunks and cases, plates and dishes, jars, trays, etc. Composite board for car ceilings, bulkheads, and door panels for steamboats, vulcanized fiber and fiber specialties for motors and dynamos, automobile parts, insulators, skate wheels, washers, disks and bushings, railway signals, electric-rail joints, noiseless rollers and gears, fiber sheets, and fiber rods and tubes were also reported. The manufacture of wood pulp itself, except so far as conducted by establishments making the finished products mentioned, and the manufacture of paper

from wood pulp are not included. The statistics of pulp goods were first reported separately at the census of 1889. General statistics for the industry for the census years from 1889 to 1914, inclusive, are given in Table 223.

In addition to the products covered by the table, pulp goods to the value of \$105,318 in 1914 and to the value of \$52,231 in 1909 were reported by establishments engaged primarily in the manufacture of other products—paper and wood pulp, steam packing, and looking-glass and picture frames.

WOOD CARPET.

This classification includes establishments engaged primarily in the manufacture of parquet strips and fiber floor veneers. The name given to the industry at earlier censuses has become somewhat misleading, but is retained for convenience in comparisons. Wood carpet and parquetry floorings are allied products; in the former, strips or blocks of wood are held together by a textile backing; in the latter they are glued together. Very little wood carpet was made in 1914 or in 1909. Table 223 presents comparable statistics for the industry from 1879 to 1914, inclusive.

CHARCOAL, NOT INCLUDING PRODUCTION IN THE LUMBER AND WOOD DISTILLATION INDUSTRIES.

Establishments under this classification carbonize wood in kilns, or by merely placing it in circular piles covered with earth and allowing it to smolder after firing.

Statistics of establishments manufacturing charcoal, although reported separately at the censuses of 1849 and 1859, were merged in 1869 in "charcoal and coke." In 1889 the charcoal plants were included under "timber products, not manufactured at mill," but the value of charcoal was given separately as \$1,339,524. Comparable statistics for the industry are given in Table 223.

Two large establishments engaged in wood distillation in Michigan were classed under "charcoal" in 1904 because the charcoal product had the greatest total value. At the census of 1909 these establishments reported a greater value for wood alcohol and other distillates from wood than for charcoal and were therefore classed under "wood distillation, not including turpentine and rosin." This is the principal reason for the apparent decrease from 1904 to 1909. A decrease from 1909 to 1914 is due primarily to the fact that an important establishment classified as charcoal in 1909 changed its product to such an extent that it was classed as a lumber mill in 1914. There was a considerable decrease also occasioned by the reduced production of charcoal pig iron.

The statistics for the industry must not be accepted as representing the total production of charcoal, because establishments classified as "wood distillation, not including turpentine and rosin," reported a production for 1914 valued at \$2,801,401. The manufacture of charcoal to some extent was also reported by establishments assigned to the chemical industry and large quantities are made and consumed in blast furnaces.

WOOD PRESERVING.

Establishments engaged in treating wood, principally ties, piling, blocks for paving, poles, etc., with creosote, coal tar, crude oil, and other preservatives to prevent decay and for protection against fire and against insects, mollusks, worms, and other parasites are included in this classification. Statistics for the industry from 1879 to 1914, inclusive, are given in Table 223.

In addition to the products covered by the table, wood preserving to the value of \$277,192 was reported in 1914 by establishments assigned to other industries, principally paving materials.