

THE TEXTILE FINISHING TRADES.

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THE TEXTILE FINISHING TRADES.

Introductory*.

The Tables on pages 208 to 213 are based on Returns received from firms in Great Britain and Northern Ireland engaged in 1924 in the Textile Finishing† Trades, i.e., the bleaching, dyeing, printing and finishing of textile goods. The number of such separate Returns was 969. About 60 firms to which schedules were sent did not furnish Returns, but these firms, for the most part, had relatively small establishments and they included a number which ceased operations in the course of the censal year. On the basis of the information available it is estimated that they did not employ more than 500 persons, and that their net output probably lay between £50,000 and £100,000.

This Report covers the bleaching, dyeing, printing, etc., of all textile materials and products (yarns, piece-goods, etc.), except lace goods, work on which is dealt with in the Report on the Lace Trades (see pages 220 and 227).

The great bulk of textile finishing work is done on a "commission" basis, i.e., the firms concerned apply finishing processes to textile goods which do not belong to them, but are given out to them by merchants or, in some cases, manufacturers. Hence the gross output value returned to the Census of Production by the textile finishing firms does not include the value of the goods dealt with but represents merely the actual amount received for the work done‡. This work, being done mainly for merchants who were not required to make Returns to the Census of Production, represents to that extent an addition to the value of the output of the textile trades, and is taken into account accordingly in the estimates of the total value (free from duplication) of that output, as shown in the Reports on certain of those trades. A sum of £244,000 for the finishing of goods of unspecified materials could not be allocated to the individual trades.

* See also the Notes on pp. vi-xiv.

† The term "finishing," besides being used to describe these trades as a whole, is also used (as in the phrases "bleaching and finishing" and "dyeing and finishing") to denote the various processes which are applied to bleached (or dyed) goods to give them the particular character desired; and, in addition, grey goods which are neither bleached, dyed nor printed may go through a simple "finishing" process which still leaves them grey.

‡ Firms carrying out finishing processes on goods owned by them were directed to make Returns of such work on the same lines as the firms working on commission, i.e., to return the value of the work done, not that of the goods as finished, and were also instructed to omit from the value of materials used, the value of any goods purchased for resale after treatment.

The following table shows the main results of the Censuses of 1924, 1912, and 1907, comparisons between the results for the three years being subject to the qualifications mentioned in the next paragraph.

Particulars.	Unit.	1924.	1912.	1907.
Value of work done and goods made (Gross output)	£'000	43,670	20,397	17,940
Cost of materials used	"	14,649	7,680	7,212
Paid for work given out to other firms ..	"	417	242	245
Net output	"	28,604	12,475	10,483
Average number of persons employed ..	No.	115,406	114,809	103,813
Net output per person employed ..	£	248	109	101
Mechanical power available :—				
Prime movers	H.P.	221,667	203,063	190,252
Electric motors driven by purchased electricity	"	65,162	14,721	(not recorded.)

Qualifications affecting comparisons.—In considering the above table and the other tables in this Report which show figures for the different censal years, the following qualifications should be borne in mind :—

(1) The comparability of figures relating to value or cost is affected by the changes which have taken place in the general purchasing power of money.

(2) The Censuses of 1907 and 1912 covered the whole of Great Britain and Ireland, but that of 1924 applied only to Great Britain and Northern Ireland. The exclusion of Southern Ireland in 1924 does not, however, seriously affect the comparability of the figures, since the scale on which the Textile Finishing Trades were carried on in the Irish Free State in 1926 did not justify the preparation of a separate Report on these trades by the Free State Census office.

(3) The Censuses of 1907 and 1924 extended to all firms, however small, but in 1912 firms employing not more than five persons (excluding the proprietors) were merely required to state the average number of persons employed by them in the year. According to the information so furnished, the average number of persons employed in the establishments thus excluded was 580, or 0.5 per cent. of the number employed by the remaining firms, as shown in the above table.

Duplication.—The figures in the above table representing the value of work done and goods made are the aggregates of the figures recorded by the firms making Returns, and to the extent of any duplication involved, they overstate the value of the output of the Textile Finishing Trades considered as a whole. The amount of this duplication is discussed on pages 195-6, where it is estimated that the value of the output, free from duplication, lay in 1924 between £43,253,000 and £43,670,000.

Production.

Textile finishing work.—The detailed information relating to the character and amount of the work done by the Textile Finishing Trades in 1924 is summarised in Table II, pp. 208–10. The following table shows, for the three censal years, the quantities of the principal classes of goods finished (so far as recorded) and the values of the principal classes of finishing work done, including certain minor amounts (aggregating £78,000 in 1924) returned on schedules for other trades (except the Lace Trades). The table is arranged, so far as possible, according to the materials (cotton, wool, silk, etc.) of which the goods dealt with were composed. In the case of those goods for which separate figures are available regarding the several finishing processes (bleaching, dyeing, etc.), these figures are shown in the table. Where no particular process is specified, the figures relate to the process or processes applicable to the goods concerned.

Firms were instructed to include the value of the mercerising and finishing of bleached goods in the amounts returned against the headings for *bleached goods*, and that of the bleaching, mercerising and finishing of dyed goods in the entries against the headings for *dyed goods*. The amounts shown against the headings for *printed goods* are inclusive of the value of all processes incidental to the production of prints. Self-coloured linings are included under headings for *dyed goods* and printed linings under *printed goods*.

Kind of goods finished.	1924.		1912.		1907.	
	Quantity.	Value of work done.	Quantity.	Value of work done.	Quantity.	Value of work done.
A.—COTTON AND COTTON GOODS.*	Th. lb.	£'000.	Th. lb.	£'000.	Th. lb.	£'000.
Raw cotton	2,639	44	2,128	23	13,339	74
Waste	13,467	182	18,798	95	..	84
Yarns	185,220	4,043	194,768	1,939	190,189	1,658
Piece-goods :—†	Mill. lin. yds.		Mill. lin. yds.		Mill. lin. yds.	
<i>Bleached, but not dyed or printed</i>	1,852·3	6,746	2,538·8	3,320	2,192·5‡	2,681
(<i>Mill. sq. yds.</i>)	(1,914·6)					
<i>Dyed, but not printed</i> ..	980·9	9,010	1,262·9	4,414	1,142·5	3,899
(<i>Mill. sq. yds.</i>)	(981·1)					
<i>Printed, whether dyed or not</i>	799·9	9,451	1,305·0	5,143	1,326·1	4,991
(<i>Mill. sq. yds.</i>)	(833·9)					
" <i>Finished</i> " only	718·2	1,334	..	668	..	561
(<i>Mill. sq. yds.</i>)	(672·3)					
Knitted fabric	1,592	34	..	67	..	12
Other and unclassified manufactures .. .. .	..	280	..	..	..	..
TOTAL VALUE—COTTON AND COTTON GOODS*	..	31,124	..	15,669	..	13,960

* Not including hosiery (Section G of this table) or unclassified goods (Section H).

† As to possible duplication of quantities in this group, see letterpress following table (pp. 194–5).

‡ Not including 7,527,000 yards of piece-goods returned by firms in the Cotton Weaving Trade (see footnote to table on page 60).

Kind of goods finished.	1924.		1912.		1907.	
	Quantity.	Value of work done.	Quantity.	Value of work done.	Quantity.	Value of work done.
B.—WOOL AND WOOL GOODS.*	Th. lb.	£'000.	Th. lb.	£'000.	Th. lb.	£'000.
Raw wool	39,210	778	35,420	313	14,463	142
Yarns—woollen and worsted (pure or mixed), alpaca, mohair and other	29,626	714	25,054	222	48,901	437
Woollen and worsted manufactures :—	Mill. lin. yds.		Mill. lin. yds.		Mill. lin. yds.	
Tissues, pure or mixed	220·0	4,236	..	..	..	..
(<i>Mill. sq. yds.</i>)	(301·3)					
Flannels and delaines	20·9	199	280·9	1,958	235·9	1,526
(<i>Mill. sq. yds.</i>)	(18·7)					
Knitted fabric	5,966	144	..	65†	..	284‡
Other and unclassified manufactures .. .. .	..	50	..	..	..	..
TOTAL VALUE—WOOL AND WOOL GOODS* ..	..	6,121	..	2,558	..	2,389
C.—SILK AND SILK GOODS.†	Th. lb.		Th. lb.		Th. lb.	
Thrown silk	459	90	..	136	2,324	112
Spun silk yarn	936	97	2,488	..	..	..
Piece-goods of silk (pure or mixed)	24·2	550	20·7	238	15·7	157§
(<i>Mill. sq. yds.</i>)	(23·1)					
TOTAL VALUE—SILK AND SILK GOODS† ..	..	737	..	374	..	269
D.—ARTIFICIAL SILK AND ARTIFICIAL SILK GOODS.‡	Th. lb.		Th. lb.		Th. lb.	
Artificial silk and yarn, threads and filaments	8,140	357	..	45	(not recorded).	
Piece-goods	46·7	411	..	..	..	..
(<i>Mill. sq. yds.</i>)	(49·1)					
Other artificial silk goods (including artificial silk hosiery) .. .. .	..	203	..	..	..	..
TOTAL VALUE—ARTIFICIAL SILK AND ARTIFICIAL SILK GOODS‡ ..	..	971	..	45	..	..

* Not including hosiery (Section G of this table) or unclassified goods (Section H).

† Relates to the processes of (1) "finishing only" and (2) waterproofing.

‡ Not including unclassified goods (Section H of this table).

§ Including £19,000 (quantity not stated) for "finishing only."

Kind of goods finished.	1924.		1912.		1907.	
	Quantity.	Value of work done.	Quantity.	Value of work done.	Quantity.	Value of work done.
E.—LINEN YARNS AND PIECE-GOODS.*	Th. lb.	£'000	Th. lb.	£'000	Th. lb.	£'000
Yarns	51,434 Mill. lin. yds.	486	84,966 Mill. lin. yds.	265	78,785† Mill. lin. yds.	243
Piece-goods of linen, pure or mixed:—						
<i>Bleached and finished</i> ..	108·8 (113·7) (Mill. sq. yds.)	1,026	144·5	450	114·1	455‡
<i>Dyed and printed</i> ..	40·5 (38·3) (Mill. sq. yds.)	492	40·1	99	29·9	78
TOTAL VALUE — LINEN YARNS AND PIECE-GOODS* .. .. .	..	2,004	..	814	..	776
F.—JUTE YARNS AND PIECE-GOODS.*	Th. lb.		Th. lb.		Th. lb.	
Yarns	10,051 Mill. lin. yds.	99	11,526 Mill. lin. yds.	31	} ..	84
Piece-goods	18·8 (25·1) (Mill. sq. yds.)	111	29·0	35		
TOTAL VALUE — JUTE YARNS AND PIECE-GOODS* .. .. .	..	210	..	66	..	84
G.—HOSIERY OF COTTON OR WOOL.*	Th. doz. prs.		Th. doz. prs.		Th. doz. prs.	
Stockings and socks ..	20,004 Th. doz.	1,570	13,931	352	9,636	255
Under-garments and fancy hosiery ..	1,273	132	..	101	..	111
TOTAL VALUE—HOSIERY OF COTTON OR WOOL* ..	..	1,702	..	453	..	366
H.—OTHER AND UNCLASSIFIED TEXTILE MANUFACTURES ..	..	247	..	50	..	13
TOTAL VALUE OF FINISHING WORK DONE .. .. .	..	43,116	..	20,029	..	17,857

* Not including unclassified goods (Section H of this table).

† The quantity shown in the published Report on the First Census (141,178,000 lb.) was found on subsequent examination to be overstated.

‡ Including £57,000 (quantity not stated) for "finishing only."

Duplication in quantities of cotton piece-goods subjected to finishing processes.—There is some reason to believe that the quantity of cotton piece-goods shown as "finished" only in Section A of the foregoing table does not represent entirely different goods from those

shown under the headings of *bleached*, *dyed* and *printed*, respectively. The great majority of bleaching, dyeing and printing firms do their own "finishing", but the Returns indicate that in some cases goods which have been bleached or dyed or printed (without being "finished") by one firm are given out, by that firm or by a merchant firm, to be "finished" by another firm. Examination of the individual Returns suggests that the aggregate quantity of cotton piece-goods so dealt with may have reached a total of about 200 million linear yards (225 million square yards) in 1924. The actual yardage of cotton piece-goods subjected to finishing processes of all kinds may therefore fall short, by these amounts, of the total figures arrived at by adding together the quantities recorded in the table as having been respectively bleached, dyed, printed, and "finished" only.

In the Census schedules used in 1907 and 1912, the "finishing" of cotton piece-goods did not figure as a separate item, and the quantities of bleached, dyed and printed cotton piece-goods shown for those years may therefore include a small amount of duplication owing to goods of the several descriptions being recorded by the firm that bleached or dyed or printed them, as the case might be, and also recorded (under the same heading) by the firm responsible for the subsequent "finishing".

For the purposes of this Report, comparisons of the quantities of cotton piece-goods subjected to finishing processes in the three census years will be limited to the recorded quantities of goods bleached, dyed, and printed, without taking account of those recorded as "finished only".

Other work done and goods made.—In addition to the output recorded in the preceding statement, the Returns relating to the Textile Finishing Trades included the following items which, except for *engraving*, are normally returned on schedules for other trades, and are dealt with in the Reports on those trades.

Particulars.	1924.	1912.	1907.
	Amount received for work done.	Amount received for work done.	Amount received for work done.
Engraving for calico printers	£312,000	£95,000	£113,000
Packing (including making-up)	44,000	19,000	
Work on textile goods (other than bleaching, dyeing, printing and finishing)	54,000	114,000	} 50,000
Other work done	62,000	37,000	
Goods made for sale	160,000*	103,000*	
TOTAL	632,000	368,000	163,000

* Net selling value of the goods.

Duplication in value of gross output.—The gross value of the output of the Textile Finishing Trades in 1924 was £43,670,000. This total

includes the value (£417,000) of the work given out by firms in those trades; and in so far as that work was done by other firms in the Textile Finishing Trades, its value is duplicated in the total. The value of the output of the trades, free from duplication, may accordingly be estimated as lying between £43,253,000 and £43,670,000. Estimated on the same basis, the value in 1907 of the output of the Textile Finishing Trades, free from duplication, was £17,695,000.

Cost of materials and work given out.—The cost of materials used by firms making their Returns on schedules for the Textile Finishing Trades was returned as £14,649,000 in 1924; the corresponding figure for 1912 was £7,680,000 and that for 1907, £7,212,000.

The amount paid to other firms for work given out to them was returned as £417,000 in 1924, £242,000 in 1912 and £245,000 in 1907.

Net output.—The net output in 1924 of the firms making their Returns on schedules for the Textile Finishing Trades (whose gross output was valued at £43,670,000) was £28,604,000, that sum representing, without duplication, the total amount by which the value (at works) of the aggregate output exceeded the cost (at works) of the materials used and the amount paid to other firms for work given out to them.

The net output per head of persons employed in the censal year 1924 was £248, as compared with £109 in 1912, and £101 in 1907.

Comparison between quantities of goods made and goods finished.

The relationship between the quantities of some important descriptions of goods handled by the Textile Finishing Trades and the total quantities of such goods made in the three censal years is shown in the table given below. In examining the figures, the considerations detailed in the paragraphs following the table should be borne in mind.

Kind of goods.	Total make.	Goods subjected to finishing processes.			
		Quantity.	Proportion of goods made.	Proportion of corresponding quantity for 1907.	
	Mill. lb.	Mill. lb.	Per cent.	Per cent.	
Cotton yarns	1924	1,395	185	13·3	97·4
	1912	1,983	195	9·8	102·6
	1907	1,800*	190	10·6	100·0
Woollen and worsted yarns	1924	555	30	5·4	61·2
	1912	565	25	4·4	51·0
	1907	446	49	11·0	100·0
Thrown silk and spun silk yarns	1924	2·2	1·4	63·6	60·9
	1912	4·3	2·5	58·1	108·7
	1907	5·0	2·3	46·0	100·0
Linen yarns	1924	97	51	52·6	64·6
	1912	150	85	56·6	107·6
	1907	135	79	58·5	100·0

* Estimated.

Kind of goods.	Total make.	Goods subjected to finishing processes.			
		Quantity.	Proportion of goods made.	Proportion of corresponding quantity for 1907.	
	Mill. lin. yds.	Mill. lin. yds.	Per cent.	Per cent.	
Cotton piece-goods	1924	5,590	3,633§	65·0	77·9
	1912	8,050	5,107	63·4	109·6
	1907	7,088	4,661	65·8	100·0
Woollen and worsted tissues (including flannels and delaines)	1924	466*	320*	68·7	102·1†
	1912	476	281	59·0	119·1
	1907	448	236	52·7	100·0
Silk piece-goods (including mixtures)	1924	14*	23*	164·3	151·2†
	1912	22	21	95·0	131·2
	1907	18	16	88·8	100·0
	Th. doz. prs.	Th. doz. prs.			
Stockings and socks of cotton or wool	1924	20,123	20,004	99·4	207·6
	1912	17,563	13,931	79·3	144·6
	1907	14,409	9,636	66·9	100·0

* Million square yards.

§ Omitting goods "finished" only (see p. 195).

† 240·9 million linear yards of woollen and worsted tissues were subjected to finishing processes in 1924, and 24·2 million linear yards of silk piece-goods.

Factors affecting comparisons.—In considering the figures in the table above showing the total quantity of goods finished as a percentage of the total make under each heading, the question arises whether the former total includes any imported goods, in which case the percentages will over-state the proportion of home-produced goods which was handled by the finishing trades. The figures themselves suggest that this may have been the case as regards silk piece-goods, since the total quantity of such goods finished in 1924 exceeded the total quantity made in this country by nearly 65 per cent. The trade statistics show that retained imports of undyed silk piece-goods amounted to over 22½ million square yards in 1924 in addition to any undyed piece-goods included in the retained imports (nearly 20 million square yards) of *piece-goods (dyed or not dyed) of silk mixed with other materials*; and though no separate figures in respect of undyed goods are available for 1912 and 1907, it is probable that the variations, as between the three years, in the ratio of finished goods to total make may not be the reflection primarily of changed proportions of home-produced goods that were subjected to finishing processes. In the case of the other goods shown in the table, it is believed that this difficulty does not arise. The quantities of cotton yarn and piece-goods imported without a prior process of finishing were too small to affect materially the ratio of goods finished to goods made. The import statistics do not distinguish between finished and unfinished goods of the remaining categories, but there is no reason to think that in those cases the quantities of imported goods included in the totals of finished goods shown in the table were large enough to affect the percentage figures in any material degree.

The ratios of goods finished to goods made may also be affected if changes in the weight or other quantitative measurement of the goods are caused by the finishing processes. Among yarns the chief instance is provided by woollen and worsted yarns, which may lose weight in the finishing processes; and piece-goods may similarly shrink as the result of bleaching, dyeing, etc., though in the case of cotton piece-goods the length may be increased (through stretching) as the result of finishing processes. In any group of goods the quantitative measurement of which suffers a net reduction in the course of finishing, the table under-states the proportion of the total make which was finished; while for goods undergoing an increase the table over-states the proportion. So far as woollen and worsted yarns are concerned, the proportions of the total make which were subjected to finishing processes were so small that any allowance for loss of weight would have little effect on the order of magnitude of the percentage figure. In the case of piece-goods of cotton or wool, however, where the quantity finished constitutes a considerable proportion of the total quantity made, the consideration of shrinkage or stretching may be of importance in interpreting the ratios. The possible effect of "splitting" cotton piece-goods, after weaving, on the recorded quantities of such goods at later stages of production or trade is discussed in the Report on the Cotton Trades (see particularly page 58).

Of the factors affecting comparisons between the recorded amounts of finishing work done in the three censal years on the several kinds of goods, the most important is the increase which is believed to have taken place since 1907 in the average width of piece-goods. As the quantities of piece-goods finished in the three censal years are shown in the table in terms of linear yards, comparisons based on those quantities must, in a degree corresponding to any such increase in average width, represent the position in the later years as less favourable than it would appear if square yardage had been available in the earlier years to serve as the basis of measurement.

Some differences in classification may have occurred in the record of fabrics made and fabrics subjected to finishing processes, and the quantities shown as the total make for each specified class of fabrics may therefore not be precisely comparable with the quantities shown as finished. The effect of any such differences is, however, believed to be comparatively small.

Results indicated by table.—In view of the various qualifications explained above, it is necessary to exercise caution in drawing inferences from the figures given in the table, but taking all the yarns together and all the fabrics together, the proportions of the total make that were handled by the Finishing Trades do not appear to have been widely different in the three censal years. In the case of stockings and socks of cotton and wool, the proportion of the output that was handled by textile finishers was much greater in 1924 than in 1912, which year in turn showed an increase over 1907.

As regards particular categories of goods, it will be seen from the table that the quantities of cotton yarn and of woollen and worsted yarn that were bleached, dyed or otherwise finished after being spun represented only a small fraction of the total make in any of the three years. Hence variations in the quantity finished do not depend so much on the fortunes of the spinning trade as on changes in the demand for knitted or woven goods made with finished (bleached, dyed, etc.) yarns, as compared with the demand for goods made with untreated yarns and submitted subsequently to a finishing process. The same consideration may apply to linen and silk yarn, where a much larger percentage of the total quantity of yarn made is subjected to some finishing process before being woven or knitted. Separate particulars are not available, in the case of yarns, in respect of the several finishing processes (bleaching, dyeing, etc.); but the increase shown by the table in the proportion of the total make of cotton, woollen and worsted, and silk yarns which was subjected to finishing processes in 1924 as compared with 1912 and (except for woollen and worsted yarn) with 1907, taken in conjunction with the output in 1924 of over 8,000,000 lb. of artificial silk yarn which was dyed or otherwise treated (as against negligible quantities in the earlier years), may perhaps be connected with the relative increase in the demand for knitted as compared with woven fabrics.

For the purpose of comparing the total quantities of goods subjected to finishing processes in the three censal years, it is necessary to add to those shown in the table on pp. 196-7 the following additional goods for which some quantity particulars are available:—

<i>Goods subjected to finishing processes.</i>	1924.	1912.	1907.
	<i>Million lb.</i>		
Raw cotton	2.6	2.1	13.3
Cotton waste	13.5	18.8	*
Raw wool	39.2	35.3	14.4
Jute yarns	10.1	11.5	†
Artificial silk	8.1	Not separately recorded.	
	<i>Million linear yards.</i>		
Linen piece-goods	149.3	184.6	144.0
Jute piece-goods	18.8	29.0	†
Artificial silk piece-goods	46.7	Not separately recorded.	

* Quantity not separately recorded; amount received, £84,000 as compared with £95,000 in 1912.

† Particulars not separately recorded. The amount received for the finishing of jute yarns and piece-goods was £84,000 in 1907 as compared with £66,000 (£31,000 for yarns and £35,000 for piece-goods) in 1912.

In addition to the cotton piece-goods of which particulars are given in the table on page 197, the Returns for 1924 included a quantity of 718·2 million linear yards of cotton piece-goods which were "finished" only, but, as explained on page 195, these were probably not entirely different goods from those recorded under the three headings shown in the table; and the addition to the total which should be made on this account is therefore uncertain.

While the calculation of exact percentages is rendered impossible by the absence of quantitative particulars for some items shown in the foregoing statement, the figures indicate that the weight of the raw materials, yarns and waste which were handled by textile finishing firms was less by about one-tenth in 1924 than in 1912 and 1907, and that the linear yardage of the fabrics dealt with in 1924 was less than the linear yardage in 1912 and 1907 by about one-fourth and one-fifth respectively. The number of pairs of stockings and socks of cotton and wool handled by textile finishing firms in 1924 was more than twice the number handled in 1907 and nearly $1\frac{1}{2}$ times the number in 1912*.

The aggregate value of the finishing work done on the goods which are taken into account in the preceding paragraph represents over 95 per cent. of the total value of all the textile finishing work (excluding work on lace goods recorded on schedules for the Lace Trades) which was recorded in the three censal years.

Comparisons of quantities of goods subjected to particular finishing processes.

In a previous table in this section of the Report (pp. 196-7), the goods subjected to finishing processes are enumerated according to the nature of their materials, and not according to the kind of finishing process applied to them. Separate particulars on the latter basis are available only for a few categories of goods, as follows:—

Cotton piece-goods.

Particulars.	Bleached, but not dyed or printed.	Dyed, but not printed.	Printed whether dyed or not.	Total of preceding columns.
<i>Quantities:—</i>	Mill. lin. yds.	Mill. lin. yds.	Mill. lin. yds.	Mill. lin. yds.
1924	1,852	981	800	3,633
1912	2,539	1,263	1,305	5,107
1907	2,193	1,142	1,326	4,661
<i>Proportion of same year's total, as in final column:—</i>	Per cent.	Per cent.	Per cent.	Per cent.
1924	51·0	27·0	22·0	100·0
1912	49·8	24·8	25·4	100·0
1907	47·0	24·5	28·5	100·0
<i>Proportion of corresponding quantity for 1907 (= 100):—</i>				
1924	84·4	85·9	60·3	78·0
1912	115·8	110·7	98·4	109·6

* The particulars on which the above calculations are based include small quantities of goods handled by firms making their Returns on schedules for trades other than the Textile Finishing Trades, but the exclusion of these would not substantially affect the results arrived at.

The table shows that the linear yardage of cotton piece-goods printed in 1924 was very much smaller than the quantities so dealt with in either 1912 or 1907, and also represented a smaller proportion of the total yardage of cotton piece-goods bleached, dyed and printed in 1924 than in either of the pre-war years. Any changes with reference to the practice in dealing with "split" goods would obviously affect these conclusions. In the case of both bleaching and dyeing, the linear yardage of cotton piece-goods handled was considerably smaller than pre-war.

The only other category of goods for which particulars of separate finishing processes are available is linen piece-goods, as follows:—

Linen piece-goods.

Particulars.	Bleached and finished.	Dyed and printed.	Total of preceding columns.
	Mill. lin. yds.	Mill. lin. yds.	Mill. lin. yds.
<i>Quantities:—</i>			
1924	108·8	40·5	149·3
1912	144·5	40·1	184·6
1907	114·1	29·9	144·0
<i>Proportion of same year's total, as in final column:—</i>	Per cent.	Per cent.	Per cent.
1924	73·0	27·0	100·0
1912	78·2	21·8	100·0
1907	79·2	20·8	100·0
<i>Proportion of corresponding quantity for 1907 (= 100):—</i>			
1924	95·4	135·5	103·7
1912	126·6	134·1	128·2

It will be seen that in all three years much the greater portion of the linen piece-goods subjected to finishing processes were "bleached and finished," but that the proportion showed a decline in each of the two later years. The linear yardage of linen piece-goods recorded as bleached and finished in 1924, while little less than that of 1907, was much below that of 1912; on the other hand, the yardage of piece-goods dyed and printed, practically equal in 1924 and 1912, showed an increase of about one-third over that recorded for 1907.

Comparisons involving particulars of exports.

As piece-goods generally require to be submitted to some kind of finishing process before they are ready for use, it would be interesting if it were possible to compare the quantities finished in the three

censal years, not only with the total make (as is done in the table already given) but also with the quantities of home-produced goods remaining in the country after allowing for exports of unfinished goods of the kind in question. Except in the case of cotton, however, the export statistics do not distinguish between piece-goods which have been subjected to finishing processes after weaving and those not so treated; and so far as cotton piece-goods are concerned, the goods simply "finished" are not distinguished at exportation, and, further, uncertainty as to the effect on linear yardage of some of the factors mentioned above, such as "splitting" and other processes applied after weaving, renders the suggested comparison impracticable.

Similar difficulties are experienced in attempting to ascertain how the exports of particular categories of textile goods in the finished state compare with the total quantities of such goods handled by the Textile Finishing Trades. In this connection, reference may be made to pp. 60-61 of the Report on the Cotton Trades.

Average charges for bleaching, dyeing, printing and finishing.

The average amounts charged in 1924 for the more important classes of finishing work done are shown in the following table, in relation to those of the two earlier years. It must not be assumed, however, that the prices charged for doing the same kind of work on the same kind of goods in the three years necessarily increased in the proportions shown in the table. Apart from improvements in particular finishing processes which might result in higher charges,* part of the increase shown by the figures may be due to changes in the relative proportions of the more and less costly varieties of finishing work included in each total.

In the case of cotton piece-goods, for example, it has been claimed (see "Survey of Textile Industries," page 45) that, comparing post-war with pre-war years, "the trade in the more elaborate and expensive styles of dyed goods [has] been relatively better maintained than the trade in the simpler styles"; and that in the case of printed goods there has been "a change in the direction of greater variety of colours from the same design," this change involving enhanced cost. A large bleaching organisation has calculated that, taking 1912 as 100, while the increase in average value of work actually done in 1924 was about 154 per cent., the average increase in their bleaching prices per linear yard was about 127 per cent.,

* Any increase in the average width of piece-goods would presumably increase the quantities of dyes, bleaching materials, etc., required for each linear yard—the unit to which the average prices shown in the table apply.

this difference being due mainly to the larger proportion of finer and higher-priced work done in the later year.

Kind of work.	1924.	1912.	1907.
Cotton yarns :—			
Bleaching, dyeing, etc. .. { £ per 1,000 lb. Per cent. of 1907.	21·83 250	9·95 114	8·72 100
Cotton piece-goods :—			
Bleaching { £ per 1,000 lin. yds. Per cent. of 1907.	3·64 298	1·31 107	1·22 100
Dyeing { £ per 1,000 lin. yds. Per cent. of 1907.	9·18 269	3·50 103	3·41 100
Printing { £ per 1,000 lin. yds. Per cent. of 1907.	11·81 314	3·94 105	3·76 100
Raw wool :—			
Bleaching, dyeing, etc. .. { £ per 1,000 lb. Per cent. of 1907.	19·84 200	8·83 89	9·92 100
Woollen and worsted yarns :—			
Stoving, dyeing, finishing, etc. { £ per 1,000 lb. Per cent. of 1907.	24·10 270	8·86 99	8·94 100
Woollen and worsted tissues, flannels and delaines :—			
Stoving, dyeing, finishing, etc. { £ per 1,000 lin. yds. Per cent. of 1907.	19·25 297	6·97 108	6·47 100
Thrown silk and spun silk yarn :—			
Bleaching, dyeing, etc. .. { £ per 1,000 lb. Per cent. of 1907.	134·05 278	54·39 113	48·24 100
Linen yarns :—			
Bleaching, dyeing, etc. .. { £ per 1,000 lb. Per cent. of 1907.	9·46 307	3·13 101	3·08 100
Linen piece-goods :—			
Bleaching and finishing .. { £ per 1,000 lin. yds. Per cent. of 1907.	9·02 258	3·11 89	3·49 100
Stockings and socks of cotton and wool :—			
Bleaching, dyeing, finishing, etc. { £ per 100 doz. prs. Per cent. of 1907.	7·84 297	2·53 96	2·64 100

Wages in 1924.

Under the Census of Production Act, 1906, the powers of the Board of Trade to require information do not extend to particulars of the amount of wages paid, and, consequently, no information on this head was secured in connexion with the Census of 1924. As a result, however, of the voluntary enquiry undertaken by the Ministry of Labour into wages and hours in the United Kingdom in 1924, information was obtained as to the total wage-bill of a group of firms in the Textile Finishing Trades which made returns both to the Ministry of Labour and to the Census of Production Office. According to the Census records this group of firms employed, in the week ended 18th October, 1924, 65,473 operatives, or 62 per cent.

of the total of 105,596 operatives for the trades as a whole, and their net output totalled £18,053,000, or 63 per cent. of the aggregate net output of £28,604,000 for the trades as a whole. The total wage-bill of these firms, as returned to the Ministry of Labour was £8,416,000, representing about 47 per cent. of their aggregate net output.

Employment.

The detailed information relating to employment in 1924 is summarised in Table III on pages 211-2. The following table sets out certain particulars for that year together with those relating to the two previous censal years. For the purpose of this comparison, the average numbers of operatives of each sex returned for 1924 have been divided between the two age-groups in the proportion shown by the data relating to the week ended 18th October.

Average number.	Males.		Females.		Males and females.	
	Under 18.	All ages.	Under 18.	All ages.	Under 18.	All ages.
	1924.					
Operatives	8,709	82,222	4,715	22,379	13,424	104,601
Administrative, etc. ..	643	8,532	425	2,273	1,068	10,805
TOTAL	9,352	90,754	5,140	24,652	14,492	115,406
1912.						
Wage earners	12,215	86,695	5,669	20,239	17,884	106,934
Salaried	893	7,449	107	426	1,000	7,875
TOTAL	13,108	94,144	5,776	20,665	18,884	114,809
1907.						
Wage earners	11,140	79,128	4,577	18,460	15,717	97,588
Salaried	618	5,987	45	238	663	6,225
TOTAL	11,758	85,115	4,622	18,698	16,380	103,813

The numbers of operatives recorded month by month in 1924 showed an upward tendency, and ranged from 1,365 above the average, in December, to 1,242 below the average, in January (see Table III B, page 212).

The number of wage-earners shown in the above table for 1907 is inclusive of 1,042 half-timers, of whom 788 were males and 254 were females; the 1912 figure includes 696 half-timers, of whom 570 were males and 126 were females.

Mechanical Power.

The detailed information relating to mechanical power in 1924 is summarised in Table IV on page 213. The following table sets out the particulars for the three censal years relating to the capacity

and kinds of *prime movers* and the capacity of *electric generators* installed.

Power equipment.	1924.			1912.	1907.
	Ordinarily in use.	In reserve or idle.	Total.	Total.	Total.
	H.P.	H.P.	H.P.	H.P.	H.P.
PRIME MOVERS :—					
Reciprocating steam engines	160,008	32,829	192,837	185,750	172,086
Steam turbines	9,341	2,674	12,015	1,922	1,585
Gas engines	6,286	547	6,833	6,889	
Petrol and light oil engines	121	197	318		5,654
Heavy oil engines	1,178	156	1,334	504	
Water power	8,219	111	8,330	7,998	10,927*
TOTAL	185,153	36,514	221,667	203,063	190,252
	Kw.	Kw.	Kw.	Kw.	Kw.
ELECTRIC GENERATORS :—					
Driven by—					
Reciprocating steam engines	34,840	9,437	44,277	24,273	12,464
Steam turbines	5,261	1,405	6,666	1,212	1,078
Gas engines	1,828	392	2,220		
Petrol and light oil engines	34	77	111		1,437
Heavy oil engines	705	90	795	17,703	
Water power	2,054	17	2,071		
TOTAL	44,722	11,418	56,140	43,188	14,979

* Includes prime movers, other than water power, of a capacity of 110 H.P.

The capacity of *electric motors* at factories in 1924 and in 1912 was as shown below :—

Electric motors.	1924.			1912.
	Ordinarily in use.	In reserve or idle.	Total.	Total.
	H.P.	H.P.	H.P.	H.P.
Driven by—				
Electricity generated in own works ..	73,254	8,966	82,220	32,602
Purchased electricity	57,836	7,326	65,162	14,721

Corresponding information was not required for 1907. The total number of Board of Trade units of electricity purchased for power and lighting purposes in that year was returned as 4,759,000.

Separate branches of the Textile Finishing Trades.

Degree of specialisation.—The principal categories of textile finishing work, reckoned according to the value recorded for each in 1924, are :—

- (1) Bleaching of cotton piece-goods (£6.7 millions).
- (2) Dyeing of cotton piece-goods (£9 millions);
- (3) Printing of cotton piece-goods (£9.5 millions);
- (4) Finishing of cotton yarns—various processes (£4 millions);
- (5) Finishing of woollen and worsted fabrics (other than knitted fabrics)—various processes (£4.4 millions).

These together account for £33.6 millions out of a total of £43.7 millions for the Textile Finishing Trades as a whole. It is, therefore, of interest to examine each category separately so far as data are available, and it is convenient to include in this examination the process of "finishing only", which accounted for work on cotton piece-goods valued at £1.3 millions in 1924. For the purpose of this enquiry all firms whose work in 1924 or 1912 consisted, to the extent of more than one-half, of some one of the special branches mentioned above have been regarded as predominantly engaged in that branch in the year concerned or in both years, as the case might be; and the following table relates to the work done in those two years by the various groups of firms thus constituted. The table shows, for each kind of work, the ratio of the value of the "dominant" work done by each group to the total value of similar work done by all textile finishing firms. It also shows, for each group of firms, the proportion which was represented by work other than the "dominant" kind.

The figures appear to indicate on the whole some increase in the extent to which the various branches of the textile finishing trades are carried on by specialised firms, though in most of the groups, and in the aggregate of all the groups, the "dominant" work formed a smaller percentage of the total work in 1924 than in 1912.

Finishing work done by the firms mainly engaged in each principal class of work.

Kind of work.	Kind of work specified in first column.		Other work.	
	Value.	Proportion of similar work of all firms.	Value.	Proportion of firms' total work.
	£'000.	Per cent.	£'000.	Per cent.
<i>Cotton piece-goods :-</i>				
Bleaching	{ 1924 5,599	83.0	322	5.4
	{ 1912 3,025	91.1	416	12.1
Dyeing	{ 1924 7,811	86.7	1,399	15.2
	{ 1912 3,680	83.4	364	9.0
Printing	{ 1924 9,051	95.8	1,098	10.8
	{ 1912 4,659	90.6	492	9.6
"Finishing"	{ 1924 1,002	75.1	51	4.8
	{ 1912 499	74.7	67	11.8
<i>Cotton yarns :-</i>				
Bleaching, dyeing, etc. ..	{ 1924 3,300	81.6	247	7.0
	{ 1912 1,458	75.2	33	2.2
<i>Woollen or worsted tissues, flannels and delaines :-</i>				
Stoving, dyeing, etc. ..	{ 1924 4,109	93.0	316	7.1
	{ 1912 1,784	91.1	96	5.1

In the case of the groups of firms mainly engaged in treating cotton piece-goods, the principal kind of *other work* done also related to such goods. For the bleaching group of firms, it was dyeing both in 1924 and in 1912; for the dyeing group, bleaching in 1924 and printing in 1912; and for the printing group, dyeing in

both years. The *other work* of the "finishing" firms included only small amounts of bleaching, dyeing and printing of cotton piece-goods and consisted chiefly of miscellaneous work. The same statement applies to the groups of firms engaged mainly in the processing of cotton yarn and of woollen and worsted tissues.

Numbers employed, mechanical power, etc.—The following table contains some further data relating to the work of the same groups of firms as are dealt with in the preceding table. In comparing the figures as between one branch and another, or as between one year and another for the same branch, the percentage figures given in the previous table should be kept in mind. For example, the table below shows that the average number of persons employed by the group of firms mainly engaged in bleaching cotton piece-goods decreased from 18,827 in 1912, to 15,862 in 1924; and the previous table shows (1) that 12.1 per cent. of the value of all the work done by the group of firms included in 1912 consisted of work other than the bleaching of cotton piece-goods, while the corresponding percentage in 1924 was 5.4, and (2) that the firms included in 1912 represented 91.1 per cent. of the value of all bleaching work done on cotton piece-goods, and those included in 1924 represented 83 per cent. It is not suggested that these percentages could properly be used to calculate figures representing the number of persons actually employed in the bleaching of cotton piece-goods in the two years. They serve, however, to indicate that allowance must be made for the variations in the completeness of the survey represented by the figures for each year.

Particulars relating to firms mainly engaged in each principal class of finishing work.

Main kinds of work done.	Total value of all work done.	Average number of persons employed.	Net output* per person.	Capacity of	
				Prime movers.	Electric motors driven by purchased electricity.
	£'000.	No.	£	H.P.	H.P.
<i>Cotton piece-goods :-</i>					
Bleaching	{ 1924 5,921	15,862	280.7	52,169	9,045
	{ 1912 3,441	18,827	124.1	63,345	1,753
Dyeing	{ 1924 9,210	20,379	269.8	45,134	14,503
	{ 1912 4,044	19,571	125.9	38,244	4,333
Printing	{ 1924 10,149	24,972	252.7	54,178	14,613
	{ 1912 5,151	26,982	114.3	53,006	3,744
"Finishing"	{ 1924 1,053	3,693	209.3	5,828	5,548
	{ 1912 566	4,228	91.8	6,506	1,034
<i>Cotton yarn :-</i>					
Bleaching, dyeing, etc. ..	{ 1924 3,547	9,858	206.0	11,437	5,765
	{ 1912 1,491	8,265	99.6	7,644	948
<i>Woollen and worsted tissues, flannels and delaines :-</i>					
Stoving, dyeing, etc. ..	{ 1924 4,425	11,605	284.9	16,331	5,829
	{ 1912 1,880	10,665	114.0	10,595	1,421

* For an explanation of *net output* see page 196.

TABLES.

I.—Summary of results.

Particulars.	Unit.	England and Wales.	Scotland.	Great Britain.	Northern Ireland.
Value of work done and goods made (Gross output) ..	£'000	36,790	4,816	41,606	2,064
Cost of materials used ..	"	12,376	1,649	14,025	624
Paid for work given out to other firms	"	348	30	378	39
Net output	"	24,066	3,137	27,203	1,401
Average number of persons employed	No.	94,708	14,258	108,966	6,440
Net output per person employed	£	254	220	250	218
Mechanical power available :—					
Prime movers	H.P.	177,765	25,982	203,747	17,920
Electric motors driven by purchased electricity ..	"	55,061	10,051	65,112	50

II.—Production.

Kind of goods handled and work done.	Unit.	England and Wales.	Scotland.	Great Britain.	Northern Ireland.
<i>I.—Raw materials and yarns.</i>					
Raw cotton (dyed, etc.) ..	<i>Th. lb.</i>	2,639	—	2,639	—
	£'000	44	—	44	—
Cotton waste (dyed, etc.) ..	<i>Th. lb.</i>	13,467	—	13,467	—
	£'000	182	—	182	—
Cotton yarns (bleached, dyed, etc.) ..	<i>Th. lb.</i>	135,971	48,286	184,257	826
	£'000	3,334	690	4,024	16
Raw wool (bleached, dyed, etc.) ..	<i>Th. lb.</i>	37,250	1,960	39,210	—
	£'000	725	53	778	—
Woollen and worsted yarns (pure or mixed), alpaca, mohair and other yarns (stoved, dyed, finished, etc.) ..	<i>Th. lb.</i>	19,362	8,888	28,250	—
	£'000	410	280	690	—
Thrown silk (bleached, dyed, etc.) ..	<i>Th. lb.</i>	*	*	459	—
	£'000	*	*	90	—
Spun silk yarn (bleached, dyed, etc.) ..	<i>Th. lb.</i>	936	—	936	—
	£'000	97	—	97	—
Artificial silk and yarn, threads and filaments (bleached, dyed, etc.) ..	<i>Th. lb.</i>	7,753	387	8,140	—
	£'000	327	30	357	—
Linen yarns (bleached, dyed, etc.) ..	<i>Th. lb.</i>	411	26,415	26,826	24,608
	£'000	4	224	228	258
Jute yarns (bleached and dyed) ..	<i>Th. lb.</i>	50	9,364	9,414	280
	£'000	1	90	91	5

* In order to avoid the possible disclosure of information relating to individual firms, figures can only be given for Great Britain as a whole.

II.—Production—continued.

Kind of goods handled and work done.	Unit.	England and Wales.	Scotland.	Great Britain.	Northern Ireland.	
<i>II.—Piece-goods.</i>						
Of cotton :—						
Bleached, but not dyed or printed.	<i>Th. lin. yds.</i>	1,729,738	68,038	1,797,776	54,566	
	<i>Th. sq. yds.</i>	1,771,794	81,056	1,852,850	61,758	
	£'000	6,120	393	6,513	233	
Dyed, but not printed ..	<i>Th. lin. yds.</i>	874,516	82,924	957,440	23,400	
	<i>Th. sq. yds.</i>	865,797	88,315	954,112	26,943	
	£'000	8,123	669	8,792	217	
Printed, whether dyed or not	<i>Th. lin. yds.</i>	651,549	139,290	790,839	9,088	
	<i>Th. sq. yds.</i>	669,076	154,701	823,777	10,077	
	£'000	7,782	1,563	9,345	106	
Finished only	<i>Th. lin. yds.</i>	650,067	61,798	711,865	6,262	
	<i>Th. sq. yds.</i>	611,399	56,050	667,449	4,758	
	£'000	1,179	134	1,313	21	
Of wool :—						
Woollen and worsted tissues (pure or mixed) (stoved, dyed, finished, etc.) ..	<i>Th. lin. yds.</i>	200,986†	18,051	219,037†	†	
	<i>Th. sq. yds.</i>	283,035†	16,926	299,961†	†	
	£'000	4,076†	142	4,218†	†	
Flannels and delaines (stoved, dyed, finished, etc.) ..	<i>Th. lin. yds.</i>	20,901	—	20,901	—	
	<i>Th. sq. yds.</i>	18,698	—	18,698	—	
	£'000	199	—	199	—	
Of silk (pure or mixed) :—						
Bleached, dyed, etc. ..	<i>Th. lin. yds.</i>	24,199†	—	24,199†	†	
	<i>Th. sq. yds.</i>	23,100†	—	23,100†	†	
	£'000	550†	—	550†	†	
Of artificial silk :—						
Dyed, printed, etc. ..	<i>Th. lin. yds.</i>	*	*	46,734	—	
	<i>Th. sq. yds.</i>	*	*	49,063	—	
	£'000	*	*	411	—	
Of linen (pure or mixed) :—						
Bleached and finished ..	<i>Th. lin. yds.</i>	*	*	11,256	97,532	
	<i>Th. sq. yds.</i>	*	*	15,656	98,078	
	£'000	*	*	226	800	
Dyed and printed	<i>Th. lin. yds.</i>	*	*	1,698	38,843	
	<i>Th. sq. yds.</i>	*	*	2,043	36,276	
	£'000	*	*	125	367	
Of jute :—						
Bleached and dyed ..	<i>Th. lin. yds.</i>	*	*	16,786	—	
	<i>Th. sq. yds.</i>	*	*	22,419	—	
	£'000	*	*	99	—	
<i>III.—Other manufactured goods.</i>						
Knitted fabrics (bleached, dyed, etc.) :—						
Of cotton	<i>Th. lb.</i>	1,592	—	1,592	—	
	£'000	34	—	34	—	
	<i>Th. lb.</i>	*	*	5,966	—	
Of wool	£'000	*	*	144	—	
	£'000	25	—	25	—	
	<i>Th. lb.</i>	1,755	—	1,755	—	
Of unclassified textile materials.	£'000	46	—	46	—	
	Hosiery (bleached, dyed, finished, etc.) :—					
	Stockings and socks :—					
Of cotton	<i>Th. doz. prs.</i>	2,068	—	2,068	—	
	£'000	142	—	142	—	
	<i>Th. doz. prs.</i>	*	*	13,330	—	
Of wool	£'000	*	*	1,014	—	
	<i>Th. doz. prs.</i>	4,606	—	4,606	—	
	£'000	414	—	414	—	

* In order to avoid the possible disclosure of information relating to individual firms, figures can only be given for Great Britain as a whole.

† In order to avoid the possible disclosure of information relating to individual firms in Northern Ireland, the small Irish output has been included with that for England and Wales and for Great Britain.

II.—Production—continued.

Kind of goods handled and work done.	Unit.	England and Wales.	Scotland.	Great Britain.	Northern Ireland.
III.—Other manufactured goods—continued.					
Hosiery (bleached, dyed, finished, etc.)—continued:—					
Under-garments and fancy hosiery:—					
Of cotton	Th. doz.	260	—	260	—
	£'000	22	—	22	—
Of wool	Th. doz.	*	*	829	—
	£'000	*	*	84	—
Of cotton or wool, not separately distinguished.	Th. doz.	184	—	184	—
	£'000	26	—	26	—
Artificial silk goods other than piece-goods (dyed, etc.) ..	£'000	178	—	178	—
Other and unclassified cotton manufactures:—					
Bleached	"	221	—	221	—
Dyed	"	1	—	1	—
Printed	"	18	—	18	—
Finished	"	26	5	31	—
Other and unclassified wool manufactures:—					
Bleached, dyed, etc. ..	"	*	*	45	—
Other and unclassified textile manufactures:—					
Bleached and dyed	"	65	10	75	—
Printed and finished	"	117	5	122	1
IV.—Other work done.					
Engraving for calico printers ..	"	275†	37	312†	†
Packing (including making-up)	"	9	35	44	—
Work on textile goods (other than bleaching, dyeing, printing and finishing)	"	42	12	54	—
Other work	"	39	2	41	21
V.—Goods made for sale.					
Cotton yarns reeled and wound	"	32	—	32	—
Other products	"	11	111	122	6
TOTAL VALUE OF WORK DONE AND GOODS MADE (GROSS OUTPUT)	£'000	36,790	4,816	41,606	2,064

* In order to avoid the possible disclosure of information relating to individual firms, figures can only be given for Great Britain as a whole.

† In order to avoid the possible disclosure of information relating to individual firms in Northern Ireland, the small Irish output has been included with that for England and Wales and for Great Britain.

III.—Employment.

A.—NUMBERS EMPLOYED IN WEEK ENDED 18TH OCTOBER, 1924.

Kind of staff.	Males.		Females.		Males and females.	
	Under 18.	All ages.	Under 18.	All ages.	Under 18.	All ages.
<i>England and Wales:—</i>						
Operatives	7,299	70,048	3,374	16,449	10,673	86,497
Administrative, etc.* ..	561	7,278	334	1,797	895	9,075
TOTAL	7,860	77,326	3,708	18,246	11,568	95,572
<i>Scotland:—</i>						
Operatives	925	8,245	1,086	4,754	2,011	12,999
Administrative, etc.* ..	57	895	77	382	134	1,277
TOTAL	982	9,140	1,163	5,136	2,145	14,276
<i>Great Britain:—</i>						
Operatives	8,224	78,293	4,460	21,203	12,684	99,496
Administrative, etc.* ..	618	8,173	411	2,179	1,029	10,352
TOTAL	8,842	86,466	4,871	23,382	13,713	109,848
<i>Northern Ireland:—</i>						
Operatives	563	4,704	294	1,396	857	6,100
Administrative, etc.* ..	25	359	14	94	39	453
TOTAL	588	5,063	308	1,490	896	6,553
<i>United Kingdom:—</i>						
TOTAL	9,430	91,529	5,179	24,872	14,609	116,401

* Administrative, technical and clerical staff.

B.—OPERATIVES EMPLOYED IN ONE WEEK IN EACH MONTH OF 1924.

England & Wales. (Annual average : Males, 69,368 ; Females, 16,265 ; Total, 85,633.)

Week ended	Males.	Females.	Total.	Week ended	Males	Females.	Total.
Jan. 12th ..	68,772	15,894	84,666	July 19th ..	69,617	16,377	85,994
Feb. 16th ..	68,780	15,952	84,732	Aug. 16th ..	69,346	16,335	85,681
March 15th ..	68,685	16,085	84,770	Sept. 13th ..	69,604	16,275	85,879
April 12th ..	68,885	16,055	84,940	Oct. 18th ..	70,048	16,449	86,497
May 17th ..	69,357	16,326	85,683	Nov. 15th ..	70,049	16,557	86,606
June 21st ..	69,209	16,257	85,466	Dec. 13th ..	70,068	16,613	86,681

Scotland. (Annual average : Males, 8,248 ; Females, 4,733 ; Total, 12,981.)

Jan. 12th ..	8,150	4,717	12,867	July 19th ..	8,182	4,710	12,892
Feb. 16th ..	8,140	4,769	12,909	Aug. 16th ..	8,269	4,721	12,990
March 15th ..	8,267	4,777	13,044	Sept. 13th ..	8,262	4,743	13,005
April 12th ..	8,274	4,710	12,984	Oct. 18th ..	8,245	4,754	12,999
May 17th ..	8,311	4,693	13,004	Nov. 15th ..	8,301	4,773	13,074
June 21st ..	8,252	4,701	12,953	Dec. 13th ..	8,318	4,736	13,054

Great Britain. (Annual average : Males, 77,616 ; Females, 20,998 ; Total, 98,614.)

Jan. 12th ..	76,922	20,611	97,533	July 19th ..	77,799	21,087	98,886
Feb. 16th ..	76,920	20,721	97,641	Aug. 16th ..	77,615	21,056	98,671
March 15th ..	76,952	20,862	97,814	Sept. 13th ..	77,866	21,018	98,884
April 12th ..	77,159	20,765	97,924	Oct. 18th ..	78,293	21,203	99,496
May 17th ..	77,668	21,019	98,687	Nov. 15th ..	78,350	21,330	99,680
June 21st ..	77,461	20,958	98,419	Dec. 13th ..	78,386	21,349	99,735

Northern Ireland. (Annual average : Males, 4,606 ; Females, 1,381 ; Total, 5,987.)

Jan. 12th ..	4,480	1,346	5,826	July 19th ..	4,479	1,331	5,810
Feb. 16th ..	4,521	1,331	5,852	Aug. 16th ..	4,568	1,402	5,970
March 15th ..	4,557	1,356	5,913	Sept. 13th ..	4,622	1,412	6,034
April 12th ..	4,595	1,400	5,995	Oct. 18th ..	4,704	1,396	6,100
May 17th ..	4,592	1,360	5,952	Nov. 15th ..	4,745	1,413	6,158
June 21st ..	4,616	1,384	6,000	Dec. 13th ..	4,790	1,441	6,231

IV.—Mechanical Power.

PARTICULARS OF PRIME MOVERS, ELECTRIC GENERATORS AND ELECTRIC MOTORS.

	(a) Ordinarily in use. (b) In reserve or idle.	England and Wales.	Scotland.	Great Britain.	Northern Ireland.
		H.P.	H.P.	H.P.	H.P.
PRIME MOVERS :—					
Reciprocating steam engines ..	{ (a) 136,948 (b) 24,419	13,990	150,938	9,070	
Steam turbines	{ (a) 7,899 (b) 1,280	1,193	9,092	249	
Gas engines	{ (a) 3,307 (b) 433	2,151	5,458	828	
Petrol and light oil engines ..	{ (a) 116 (b) 119	5	121	—	
Heavy oil engines	{ (a) 706 (b) 116	60	766	412	
Water power	{ (a) 2,386 (b) 36	1,415	3,801	4,418	
TOTAL	{ (a) 151,362 (b) 26,403	18,814	170,176	14,977	
TOTAL OF PRIME MOVERS INSTALLED ..		7,168	33,571	2,943	
		177,765	25,982	203,747	17,920
ELECTRIC GENERATORS :—					
Driven by :—		Kw.	Kw.	Kw.	Kw.
Reciprocating steam engines ..	{ (a) 29,668 (b) 7,472	2,974	32,642	2,198	
Steam turbines	{ (a) 4,418 (b) 368	800	5,218	43	
Gas engines	{ (a) 271 (b) 47	1,358	1,629	199	
Petrol and light oil engines ..	{ (a) 34 (b) 77	—	34	—	
Heavy oil engines	{ (a) 478 (b) 60	27	505	200	
Water power	{ (a) 949 (b) —	132	1,081	973	
TOTAL	{ (a) 35,818 (b) 8,024	5,291	41,109	3,613	
TOTAL OF ELECTRIC GENERATORS INSTALLED		2,555	10,579	839	
		43,842	7,846	51,688	4,452
ELECTRIC MOTORS :—					
Driven by—		H.P.	H.P.	H.P.	H.P.
Electricity generated in own works	{ (a) 54,442 (b) 8,086	13,637	68,079	5,175	
Purchased electricity	{ (a) 50,309 (b) 4,752	7,482	57,791	45	
		2,569	7,321	5	