

THE LIGHT CASTINGS TRADE

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Introductory.*

The tables on pages 84 to 88 are based on returns received from firms in Great Britain and Northern Ireland whose business in 1924 consisted wholly or mainly in the manufacture of heating, ventilating, sanitary, etc., appliances. The number of such separate returns was 479. About 70 firms to which schedules were sent did not furnish returns, but these firms either had very small establishments or had ceased operations before the end of the censal year. On the basis of the information available it is estimated that they did not employ more than 465 persons in all, and that their net output was probably not in excess of £100,000.

Summary of results.—The following table shows the main results of the Censuses of 1924 and 1907, comparisons between the figures for the two years being subject to the qualifications mentioned in the next paragraph; the information received in connexion with the Census of 1912, when details of output were not required from firms employing five persons or less, was not sufficiently complete to warrant its use for purposes of comparison.

Particulars.	Unit.	1924.	1907.
Value of goods made and work done (Gross output)	£'000	17,733	2,916
Cost of materials used	"	6,788	1,306
Paid for work given out to other firms	"	164	43
Net output	"	10,781	1,567
Average number of persons employed	No.	47,912	14,322
Net output per person employed	£	225	109
Mechanical power available :—			
Prime movers	H.P.	8,679	3,497
Electric motors driven by purchased electricity	"	24,635	(not recorded).

Qualifications affecting comparisons.—In considering the above table and the other tables in this report which show figures for 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 Great Britain and the whole of Ireland but that of 1924 applied only to Great Britain and Northern Ireland. Separate particulars relating to the products of the Light Castings Trade were not published in connexion with the Census of Production of 1926 conducted by the Government of the Irish Free State, and it is probable that the exclusion of Southern Ireland in 1924 does not seriously affect the comparability of the figures.

* See also the Notes on pages vii-xv.

(3) In the Census of 1924 manufacturers of cast iron grates, ranges and stoves made returns on the schedule used for the Light Castings Trade, but in 1907 the great bulk of this class of output was returned on the schedule for the Hardware, Hollowware and Bedstead Trades (see page 125). Other cast iron products such as baths, cisterns, sanitary appliances, etc., were to a considerable extent included in general headings on the schedules for the Iron and Steel (Smelting, Rolling and Founding) Trades and the Hardware, etc., Trades in 1907, but in 1924 the firms making such finished goods were grouped to form the present trade. Similarly, firms making gas meters (included in the Finished Brass Trades in 1907) have also been included in this group in 1924. These considerations seriously affect the comparability of the aggregate figures for 1924 and 1907.

Production.

Detailed information relating to the output of the Light Castings Trade in 1924 will be found in Table II on pages 84 and 85.

Principal products.—The following statement shows, for 1924 and 1907, the value of the chief classes of production of the Light Castings Trade, the figures for each year being inclusive of the output of similar products returned on schedules for other trades.

Kind of goods.	1924.		1907.
	Returned on schedules issued to		
	The Light Castings Trade.	All trades.	Total.
	£'000.	£'000.	£'000.
Heating and cooking apparatus	7,455	7,818	2,703
Gas meters and lighting appliances	2,270	2,408	1,711
Ventilating appliances	402	404	275
Sanitary appliances	1,597	1,782	397
Water appliances	1,316	1,524	278
Appliances not separately distinguished	—	—	148
TOTAL	13,040	13,936	5,512

The following items were returned principally on schedules for other trades; they have, therefore, not been included in the output for 1924 shown in the above table but have been included with similar products in the reports on the trades concerned: Electrical heating and cooking apparatus, £566,000 (see page 260); Stoves of sheet metal, £272,000 (see page 132); and Heating and ventilating plant, £706,000 (see page 248).

Further, the sum of £2,703,000, shown above as the value of heating and cooking apparatus in 1907, may include some stoves of sheet metal.

More detailed particulars regarding the output of the principal products of this trade in 1924 are given in the following table:—

Kind of goods.	Returned on schedules issued to			
	The Light Castings Trade.		All trades.	
	Quantity.	Selling value.	Quantity.	Selling value.
	Th. tons.	£'000.	Th. tons.	£'000.
Heating and cooking apparatus:—				
Cast iron stoves, grates and ranges—				
For coal and other solid fuel	94.0	3,193	97.3	3,307
For gas	51.7	2,921	56.1	3,154
Cast iron boilers for washing and cooking	5.3	190	5.5	194
Heating appliances not elsewhere specified .. .. .	..	1,151	..	1,163
TOTAL—HEATING AND COOKING APPARATUS .. .. .	..	7,455	..	7,818
Gas appliances:—				
Meters .. .. .	..	1,289	..	1,427
Other appliances (except stoves, pipes, and fittings) .. .. .	..	981	..	981
TOTAL—GAS APPLIANCES .. .. .	..	2,270	..	2,408
Ventilating appliances not elsewhere included .. .. .	..	402	..	404
Sanitary appliances—				
Sanitary cisterns (flushing tanks) of cast-iron	6.8	229	10.1	331
Cast iron baths (porcelain-enamelled, etc.)	16.6	683	18.1	756
Other sanitary cast iron goods (sinks, basins, lavatories, closets, etc.)	7.7	150	7.9	154
Other sanitary appliances .. .. .	..	535	..	541
TOTAL—SANITARY APPLIANCES .. .. .	..	1,597	..	1,782
Water appliances:—				
Gutters, rain-water and soil pipes and fittings .. .. .	..	1,166	..	1,178
Other appliances .. .. .	..	150	..	346
TOTAL—WATER APPLIANCES .. .. .	..	1,316	..	1,524
TOTAL—APPARATUS AND APPLIANCES .. .. .	..	13,040	..	13,936

Examination of the individual returns leads to the conclusion that any duplication which may have arisen from the sale of parts of apparatus by their makers to other manufacturing firms or to repairing firms was quite unimportant.

Other products.—In addition to the above-mentioned classes of goods which formed the principal products of the Light Castings Trade, the firms that made their returns on the schedules for this trade included in their output the following classes of goods which, being of kinds mainly produced by other trades, are dealt with in the reports on those trades :—

	<i>Selling value.</i>
	£'000.
Gas and water pipes of iron and steel	779 (29,800 tons)
Other pipes of iron and steel	423 (23,500 tons)
Fittings for pipes	385
Iron castings, not elsewhere specified	610
Hardware and hollow-ware of iron and steel	238
Other iron and steel goods and engineering work	206
Manufactures of non-ferrous metals	143
Other goods	102
TOTAL	2,886

The aggregate value of the subsidiary products returned in 1907 was £280,000. The production of cast pipes and heavy iron and steel castings is discussed in the report on the Iron and Steel (Smelting, Rolling and Founding) Trades (see pages 46 to 49).

Repair, jobbing and installation work.—The amount returned as received for repair, jobbing and installation work in 1924 was £1,807,000, to which should be added £74,000 returned for similar work on schedules for other trades; the corresponding total for 1907 was £130,000. These figures are generally exclusive of the value of the appliances, etc., made by the firms carrying out the installation work. Repair and installation work done by gas companies, water companies, and sanitary and plumbing work done by builders are not included in either year.

Cost of materials and work given out.—The cost of materials used by firms that made their returns on schedules for the Light Castings Trade was returned as £6,788,000 in 1924, a sum which does not contain any serious amount of duplication in respect of goods purchased from firms in the same trades. The corresponding figure for 1907 was £1,306,000.

The amount paid to other firms for work given out to them was returned as £164,000 in 1924 and £43,000 in 1907.

Net output.—The net output in 1924 of the firms that made their returns on schedules for the Light Castings Trade (whose gross output was valued at £17,733,000) was £10,781,000, that sum representing, without duplication, the total amount by which the value, as delivered, of the aggregate output exceeded the cost, as purchased, 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 £225, as compared with £109 in 1907.

Quantity of iron and steel used.—Firms were requested to state voluntarily the quantities of pig iron, iron bars, etc., and of steel ingots, blooms, billets, etc., used by them in the year of return. Information was furnished by firms responsible for about three-fifths of the total output of the items for which weights were furnished in the returns and for 47 per cent. of the total value of the apparatus and appliances made for sale (i.e., exclusive of the amount received for repair, jobbing and installation work). The materials used by these firms were :—

	<i>Tons.</i>
Pig iron	203,800
Iron bars, etc.	5,900
Steel ingots, blooms, billets, etc.	1,800

Exports and imports.—The following table, relating to the year 1924, shows the production of certain classes of heating and sanitary appliances together with the exports and imports of similarly described goods. Similar information is not available for 1907 as the exports and imports of these goods were not shown separately in that year.

Kind of goods.	Production.	Exports.	Net imports.	Available for use in United Kingdom.
	Th. tons.	Th. tons.	Th. tons.	Th. tons.
Stoves, grates and ranges :—				
For coal and other solid fuel	97·3	6·7	0·3	90·9
For gas	56·1*	2·0	†	54·1*
Sanitary cisterns (flushing tanks)	10·1	3·3	†	6·8
Baths, porcelain-enamelled, etc.	18·1	3·1	4·2	19·2
Other sanitary cast iron goods	7·9	0·4	0·1	7·6
Cooking and washing boilers	5·5	0·5	0·1	5·1

* Not including stoves of sheet iron, valued at £272,000.

† Under 50 tons.

British manufacturers practically monopolise the home market in all these classes of goods except cast iron baths with porcelain-enamel, or other finish; about 22 per cent. of the available supply of these baths in the United Kingdom was of foreign origin.

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 Light Castings Trade 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, 22,662 operatives, or 52 per cent. of the total of 43,555 operatives for the trade as a whole, and their net output totalled £5,454,000, or 51 per cent. of the aggregate net output of £10,781,000 for the trade as a whole. The total wage-bill of these firms, as returned to the Ministry of Labour, was £3,026,000, representing about 55·5 per cent. of their aggregate net output.

Employment.

The detailed information relating to employment in 1924 is summarised in Table III on pages 86 and 87. The following table sets out certain particulars for that year together with those obtained at the 1907 Census. 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 proportions 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	5,647	39,138	972	3,166	6,619	42,304
Administrative, etc. ..	489	4,271	185	1,337	674	5,608
TOTAL	6,136	43,409	1,157	4,503	7,293	47,912
1907.						
Wage earners	1,215	10,288	466	2,326	1,681	12,614
Salaried	147	1,516	34	192	181	1,708
TOTAL	1,362	11,804	500	2,518	1,862	14,322

The considerable reduction in the proportion of female to male operatives may be related to the changed scope of the schedule.

The numbers of operatives recorded month by month in 1924 ranged from 2,028 above the average, in December, to 1,363 below the average, in January (see Table IIIB, page 87). Except for a slight recession in July and August the monthly totals increased throughout the year.

Mechanical Power.

The detailed information relating to mechanical power in 1924 is summarised in Table IV on page 88. The following table sets out the particulars for 1924 and 1907 relating to the capacity and kinds of *prime movers* and the capacity of *electric generators* installed.

Power equipment.	1924.			1907.
	Ordinarily in use.	In reserve or idle.	Total.	Total.
PRIME MOVERS:—				
Reciprocating steam engines ..	2,224	235	2,459	1,452
Steam turbines	27	—	27	—
Gas engines	5,054	667	5,721	} 2,045
Petrol and light oil engines ..	84	40	124	
Heavy oil engines	303	—	303	
Water power	25	20	45	
TOTAL	7,717	962	8,679	3,497
ELECTRIC GENERATORS:—				
Driven by—				
Reciprocating steam engines ..	581	10	591	375
Steam turbines	20	—	20	—
Gas engines	957	109	1,066	} 174
Petrol and light oil engines ..	—	—	—	
Heavy oil engines	135	60	195	
Water power	6	15	21	
TOTAL	1,699	194	1,893	549

The capacity of *electric motors* recorded in 1924 was as shown below:—

Electric motors.	1924.		
	Ordinarily in use.	In reserve or idle.	Total.
Driven by—			
Electricity generated in own works	1,435	127	1,562
Purchased electricity	21,614	3,021	24,635

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 851,000.

In addition to the power generated at firms' own works, or purchased as electrical energy, some establishments were operated partly or wholly by *rented power*. For 1924, such establishments in the Light Castings Trade returned 0·06 per cent. of the total value of output reported, and employed 0·08 per cent. of the total of persons employed in that trade. The proportion of output in 1907 reported by firms renting all the power they used was 2·6 per cent.

TABLES.

I.—Summary of results.

Particulars.	Unit.	England and Wales.	Scotland.	Great Britain.	Northern Ireland.
Value of goods made and work done (Gross output)	£'000	12,626	5,088	17,714	19
Cost of materials used	"	4,824	1,956	6,780	8
Paid for work given out to other firms	"	127	37	164	—
Net output	"	7,675	3,095	10,770	11
Average number of persons employed	No.	32,644	15,192	47,836	76
Net output per person employed ..	£	235	204	225	145
Mechanical power available :—					
Prime movers	H.P.	6,428*	2,251	8,679*	*
Electric motors driven by purchased electricity	"	14,811*	9,824	24,635*	*

* In order to avoid the possible disclosure of information relating to individual firms, the figures for Northern Ireland have been included with those for England and Wales and for Great Britain.

II.—Production.

Goods sold or added to stock.	Unit.	England and Wales and Northern Ireland.†	Scotland.	United Kingdom.
		Quantity and selling value.		
Cast iron stoves, grates and ranges for domestic cooking and heating :—				
For coal and other solid fuel ..	{ Th. tons £'000	48 1,752	46 1,441	94 3,193
For gas	{ Th. tons £'000	47 2,650	5 271	52 2,921
Cooking and washing boilers of cast iron	{ Th. tons £'000	1 75	4 115	5 190
Heating appliances, not elsewhere specified	£'000	1,101	50	1,151
Gas appliances :—				
†Meters	"	1,105	184	1,289
Other sorts (excluding pipes and fittings)	"	906	75	981
Sanitary cast iron goods (such as sinks, basins, lavatories, closets, etc.), not included elsewhere ..	{ Th. tons £'000	7 110	1 40	8 150
Sanitary appliances, not included elsewhere	£'000	318	217	535
†Ventilating appliances, not included elsewhere	"	327	75	402
Water appliances	"	139	11	150
Sanitary cisterns (flushing tanks) of cast iron	{ Th. tons £'000	3 99	4 130	7 229

† See footnote to Table I, the items affected are also marked, thus (†).

II.—Production—continued.

Goods sold or added to stock.	Unit.	England and Wales and Northern Ireland.†	Scotland.	United Kingdom.
		Quantity and selling value.		
Cast iron baths (porcelain-enamelled or other finish)	{ Th. tons £'000	1 277	10 406	17 683
Rain water and soil pipes, gutters and fittings	£'000	509	657	1,166
Gas and water pipes of iron or steel	{ Th. tons £'000	19 586	11 193	30 779
Other pipes of iron or steel	{ Th. tons £'000	4 86	19 337	23 423
Fittings for gas, water or other pipes	{ Weight stated .. £'000 Weight not stated .. £'000	1 49 155	5 181 ‡	6 230 155
Iron castings (mainly light foundry) of all sorts, not elsewhere specified	"	330	280	610
Electric lighting accessories and fittings	"	*	*	65
Hardware and hollow-ware of iron or steel	"	83	155	238
Other iron or steel manufactures and engineering	"	141	65	206
Other manufactures of metals other than iron or steel :—				
†Brass	"	*	*	55
Other non-ferrous metals	"	23	—	23
Non-metal products :—				
Manufactures of wood	"	35	—	35
Slate, tile and marble work	"	42	—	42
Other kinds	"	25	—	25
TOTAL VALUE OF GOODS MADE	£'000	11,013	4,913	15,926
Repair, jobbing and installation work for customers	£'000	1,632§	175§	807§
TOTAL VALUE OF GOODS MADE AND WORK DONE (GROSS OUTPUT)	£'000	12,645	5,088	17,733

* In order to avoid the possible disclosure of information relating to individual firms, figures are given only for the United Kingdom as a whole.

† See footnote to Table I, the items affected are also marked thus (†).

‡ Less than £500.

§ Amount received for work done.

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	4,169	27,312	769	2,463	4,938	29,775
Administrative, etc.*	307	2,881	123	894	430	3,775
TOTAL	4,476	30,193	892	3,357	5,368	33,550
<i>Scotland</i> :—						
Operatives	1,640	12,943	225	776	1,865	13,719
Administrative, etc.*	181	1,382	61	440	242	1,822
TOTAL	1,821	14,325	286	1,216	2,107	15,541
<i>Great Britain</i> :—						
Operatives	5,809	40,255	994	3,239	6,803	43,494
Administrative, etc.*	488	4,263	184	1,334	672	5,597
TOTAL	6,297	44,518	1,178	4,573	7,475	49,091
<i>Northern Ireland</i> :—						
Operatives	9	61	—	—	9	61
Administrative, etc.*	1	8	1	3	2	11
TOTAL	10	69	1	3	11	72
<i>United Kingdom</i> :—						
TOTAL	6,307	44,587	1,179	4,576	7,486	49,163

* Administrative, technical and clerical staff.

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

England and Wales. (Annual average : Males, 26,478 ; Females, 2,391 ; Total, 28,869.)

Week ended.	Males.	Females.	Total.	Week ended.	Males.	Females.	Total.
Jan. 12th ..	25,603	2,395	27,998	July 19th ..	26,241	2,344	28,585
Feb. 16th ..	25,603	2,373	27,976	Aug. 16th ..	26,364	2,360	28,724
March 15th ..	25,785	2,318	28,103	Sept. 13th ..	26,924	2,462	29,386
April 12th ..	25,841	2,371	28,212	Oct. 18th ..	27,312	2,463	29,775
May 17th ..	26,202	2,362	28,564	Nov. 15th ..	27,610	2,469	30,079
June 21st ..	26,427	2,339	28,766	Dec. 13th ..	27,824	2,437	30,261

Scotland. (Annual average : Males, 12,595 ; Females, 775 ; Total, 13,370.)

Jan. 12th ..	12,090	787	12,877	July 19th ..	12,608	771	13,379
Feb. 16th ..	12,312	770	13,082	Aug. 16th ..	12,139	740	12,879
March 15th ..	12,275	779	13,054	Sept. 13th ..	12,761	778	13,539
April 12th ..	12,393	766	13,159	Oct. 18th ..	12,943	776	13,719
May 17th ..	12,566	765	13,331	Nov. 15th ..	13,064	796	13,860
June 21st ..	12,782	770	13,552	Dec. 13th ..	13,205	800	14,005

Great Britain. (Annual average : Males, 39,073 ; Females, 3,166 ; Total, 42,239.)

Jan. 12th ..	37,693	3,182	40,875	July 19th ..	38,849	3,115	41,964
Feb. 16th ..	37,915	3,143	41,058	Aug. 16th ..	38,503	3,100	41,603
March 15th ..	38,060	3,097	41,157	Sept. 13th ..	39,685	3,240	42,925
April 12th ..	38,234	3,137	41,371	Oct. 18th ..	40,255	3,239	43,494
May 17th ..	38,768	3,127	41,895	Nov. 15th ..	40,674	3,265	43,939
June 21st ..	39,209	3,109	42,318	Dec. 13th ..	41,029	3,237	44,266

Northern Ireland. (Annual average : Males, 65 ; Females, — ; Total, 65.)

Jan. 12th ..	66	—	66	July 19th ..	62	—	62
Feb. 16th ..	66	—	66	Aug. 16th ..	62	—	62
March 15th ..	67	—	67	Sept. 13th ..	63	—	63
April 12th ..	69	—	69	Oct. 18th ..	61	—	61
May 17th ..	69	—	69	Nov. 15th ..	62	—	62
June 21st ..	67	—	67	Dec. 13th ..	66	—	66

IV.—Mechanical Power.

PARTICULARS OF PRIME MOVERS, ELECTRIC GENERATORS AND
ELECTRIC MOTORS.

Power equipment.	England and Wales and Northern Ireland.*		Scotland.		United Kingdom.	
	Ordinarily in use.	In reserve or idle.	Ordinarily in use.	In reserve or idle.	Ordinarily in use.	In reserve or idle.
	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
PRIME MOVERS :—						
Reciprocating steam engines	1,284	60	940	175	2,224	235
Steam turbines	—	—	27	—	27	—
Gas engines	4,391	477	663	190	5,054	667
Petrol and light oil engines	84	40	—	—	84	40
Heavy oil engines	47	—	256	—	303	—
Water power	25	20	—	—	25	20
TOTAL	5,831	597	1,886	365	7,717	962
TOTAL OF PRIME MOVERS INSTALLED	6,428		2,251		8,679	
	Kw.	Kw.	Kw.	Kw.	Kw.	Kw.
ELECTRIC GENERATORS :—						
Driven by—						
Reciprocating steam engines	369	10	212	—	581	10
Steam turbines	—	—	20	—	20	—
Gas engines	887	59	70	50	957	109
Heavy oil engines	—	—	135	60	135	60
Water power	6	15	—	—	6	15
TOTAL	1,262	84	437	110	1,699	194
TOTAL OF ELECTRIC GENERATORS IN- STALLED	1,346		547		1,893	
	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
ELECTRIC MOTORS :—						
Driven by—						
Electricity generated in own works	874	7	561	120	1,435	127
Purchased electricity	13,564	1,247	8,050	1,774	21,614	3,021

* See footnote to Table I.