

THE BLACKSMITHING TRADE.

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Introductory.*

The tables on pages 177 to 180 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 horseshoes and fencing material and in general blacksmithing work. The number of such separate returns was 6,859. About 2,300 firms to which schedules were sent did not furnish returns, but the majority of these firms had very small establishments and may have included a number which had ceased operations by the end of the census year. Their aggregate output cannot be estimated with any precision, but it is thought that it was probably between 10 and 20 per cent. of the total.

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 obtained 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.

* See also the notes on pp. vii to xv.

Particulars.	Unit.	1924.	1907.
Value of goods made and work done (Gross output)	£'000	4,161	2,466
Cost of materials used	"	1,567	988
Net output	"	2,594	1,478
Average number of persons employed	No.	17,515	20,889
Net output per person employed	£	148	71
Mechanical power available :—			
Prime movers	H.P.	4,222	4,113
Electric motors driven by purchased electricity	"	4,436	(not recorded).

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

(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 Census of 1907 covered Great Britain and the whole of Ireland, but that of 1924 applied only to Great Britain and Northern Ireland. The exclusion of Southern Ireland in 1924 does not seriously affect the comparability of the figures since, according to the Census of Production taken by the Government of the Irish Free State in respect of the year 1926, the total amount received for horse-shoeing and general smiths' work in that year, as recorded in the report on the Coach and Wagon Building, Blacksmiths' and Farriers' Trades, was returned as £45,000. This output is exclusive of the work done by a number of small concerns from which satisfactory returns were not obtained, but the aggregate output of such firms was thought to have been quite small.

Neither in 1924 nor in 1907 were returns received from all blacksmiths, but the exact extent of the omission in either year cannot be precisely determined, nor can it be said whether the omitted number was greater or less in 1924 than in 1907.

Value of output and cost of materials.—The figures in the above table representing the value of goods made and work done and the cost of materials used, are the aggregates of the figures recorded by the firms that made returns, and, for the reasons explained in paragraphs (i) and (ii) on pages xii and xiii, they overstate the value of the output of, and the cost of the materials used by, the Blacksmithing Trade considered as a whole. The matter is discussed on page 174, where it is estimated that in 1924 the value, free from duplication, of the output of this trade was about £4,038,000, and the cost of materials purchased from sources outside the trade and worked up into its products was about £1,444,000.

Production.

Detailed information as to the output of the Blacksmithing Trade in 1924 will be found in Table II on page 177.

In addition to the goods dealt with in this report, an output of horseshoes and general jobbing work valued, on a cost basis, at £31,000, was returned in 1924 by Railway Companies, etc.* The corresponding figure for 1907 was £28,000.

Principal products.—The following statement shows, for the years 1924 and 1907, the value and (where recorded) the quantity of the principal classes of goods made and work done in the Blacksmithing Trade, including not only the output of firms that made their returns on schedules for that trade but also the output of similarly described goods returned on schedules for other trades.

Kind of goods.	1924.			1907.
	Returned on schedules for the Blacksmithing Trade.	Returned on schedules for other trades.	Total.	Total.
	Selling value.	Selling value.	Selling value.	Selling value.
Fencing material of cast or wrought iron :—	£'000	£'000	£'000	£'000
Standards	85	17	102	490
(tons)	(4,370)	(860)	(5,230)	
Other sorts (gates, grilles, fences, trellis, etc.)	336	521	857	92
(tons)	(15,110)	(19,980)	(35,090)	
Ornamental ironwork	155	19	174	106
Horse shoes and horse shoeing	673	47	720	
General and jobbing work (including repair work and also shoeing when this has not been included with horse shoes above)	2,388†	283†	2,671†	1,733†
TOTAL VALUE	3,637	887	4,524	2,421

† Amount received for work done.

In addition, an output of builders' ironmongery valued, in 1924, at £185,000 and, in 1907, at £106,000 was returned on schedules for the Blacksmithing Trade.

In 1907 the output of fencing material returned on schedules for the Blacksmithing Trade was valued at £381,000, and that returned on schedules for other trades at £109,000. Thus, in 1924 a much greater proportion of the total output of the products characteristic of this trade was returned on schedules for other trades than in 1907. As there has been a decline in the number of country blacksmiths, it would appear that some part of the demand for fencing material has been transferred to firms in other trades. On the other hand, it is probable that the identified output of fencing material in 1907 did not represent the total output, and that some firms in

* Such production falls within the scope of the Report on Public Utility Services, which forms part of a separate volume.

other trades entered their output of these goods under general descriptions which did not enable their exact nature to be identified.

The great bulk of the output of blacksmiths was returned as *general and jobbing work*; where firms both made horse-shoes and shod horses they were allowed either to include the value of the shoeing with the value of the horse-shoes sold, or to return it separately as general and jobbing work. The amount shown for horse shoes and horse-shoeing, therefore, probably covers only a part of the total sum received for shoeing, and, to make a fair comparison between 1907 and 1924, the amounts returned under this heading and under that of general and jobbing work should be added together. The combined sum showed an increase from £1,839,000 in 1907 to £3,391,000 in 1924, or an increase in value of 84 per cent.

Other products.—In addition to the output shown in the preceding table, firms that made their returns on schedules for the Blacksmithing Trade returned the following goods, which, being of kinds mainly produced by other trades, are dealt with in the reports on those trades:—

Kind of goods.	1924.	1907.
	Selling value.	Selling value.
	£'000	£'000
Structural ironwork	204	85
Agricultural implements and tools	13	5
Other ironwork	103	97
Other goods made and work done	19	7
TOTAL	339	194

Value of output free from duplication.—The aggregate gross output in 1924 of the firms that made their returns on schedules for the Blacksmithing Trade was £4,161,000. Certain firms made horse shoes on a wholesale scale for sale to blacksmiths and the duplication so caused is estimated to have been about £123,000. The value of the output, free from duplication, of the Blacksmithing Trade in 1924 would thus be about £4,038,000. The corresponding figure for 1907, calculated on the same basis, lay between £2,374,000 and £2,466,000.

Cost of materials.—The cost of materials used by firms that made their returns on schedules for the Blacksmithing Trade was returned as £1,567,000, a sum which, by the exclusion of goods purchased from other firms in that trade, is reduced to about £1,444,000. The corresponding net figure for 1907 was estimated to lie between £896,000 and £988,000.

Net output.—The net output in 1924 of the firms that made their returns on schedules for the Blacksmithing Trade (whose gross output was valued at £4,161,000) was £2,594,000, 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.

The net output per head of persons employed in the censal year 1924 was £148, as compared with £71 in 1907.

Exports and imports.—Of the various classes of goods made in the Blacksmithing Trade, only fencing material is specified in the Import and Export List. The imports in 1924 were negligible, but exports were 1,163 tons of standards and 3,033 tons of gates, fences, trellis, etc., or about 22 per cent. of the standards and less than 9 per cent. of the other fencing material returned as made.

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 Blacksmithing 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, 1,616 operatives, or 16 per cent. of the total of 10,346 operatives for the trade as a whole, and their net output totalled £349,000, or 13 per cent. of the aggregate net output of £2,594,000 for the trade as a whole. The total wage-bill of these firms, as returned to the Ministry of Labour, was £211,000, representing about 60 per cent. of their aggregate net output.

Employment.

The detailed information relating to employment in 1924 is summarised in Table III on pages 178 and 179. The following table sets out certain particulars for that year together with those relating to 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	2,008	10,152	24	121	2,032	10,273
Administrative, etc.	32	7,116	26	126	58	7,242
TOTAL	2,040	17,268	50	247	2,090	17,515
1907.						
Wage earners	2,953	17,008	18	183	2,971	17,191
Salaried	72	3,632	6	66	78	3,698
TOTAL	3,025	20,640	24	249	3,049	20,889

The numbers of operatives recorded month by month in 1924 ranged from 88 above the average, in November, to 112 below the average, in January (see Table IIIB, page 179).

Mechanical Power.

The detailed information relating to mechanical power in 1924 is summarised in Table IV on page 180. The following table sets out the particulars for that year and for 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.
	H.P.	H.P.	H.P.	H.P.
PRIME MOVERS :—				
Reciprocating steam engines	422	57	479	1,626
Steam turbines	12	—	12	—
Gas engines	2,289	233	2,522	} 2,399
Petrol and light oil engines	996	54	1,050	
Heavy oil engines	118	—	118	
Water power	41	—	41	88
TOTAL	3,878	344	4,222	4,113
	Kw.	Kw.	Kw.	Kw.
ELECTRIC GENERATORS :—				
Driven by—				
Reciprocating steam engines	—	—	—	57
Gas engines	13	—	13	} 3*
Petrol and light oil engines	7	—	7	
TOTAL	20	—	20	60

* Returned as driven by *other prime movers*.

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

Electric motors.	1924.		
	Ordinarily in use.	In reserve or idle.	Total.
	H.P.	H.P.	H.P.
Driven by—			
Electricity generated in own works	38	1	39
Purchased electricity	4,194	242	4,436

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 186,000.

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	3,210	902	4,112	49
Cost of materials used	"	1,160	385	1,545	22
Net output	"	2,050	517	2,567	27
Average number of persons employed	No.	13,901	3,414	17,315	200
Net output per person employed ..	£	147	152	148	135
Mechanical power available :—					
Prime movers	H.P.	3,088	1,058	4,146	76
Electric motors driven by purchased electricity	"	3,011	1,420	4,431	5

II.—Production.

Goods sold or added to stock.	England and Wales and Northern Ireland.*	Scotland.	United Kingdom.
	Selling value.	Selling value.	Selling value.
	£'000	£'000	£'000
Fencing material of cast or wrought iron :—			
Standards	15	70	85
Other sorts (gates, grilles, fences, trellis, etc.)	(920) 231	(3,450) 105	(4,370) 336
	(10,140) (tons)	(4,970)	(15,110)
Ornamental ironwork	140	15	155
Horse shoes and horse shoeing	558	115	673
Builders' ironmongery	178	7	185
Structural ironwork	163	41	204
Agricultural implements and tools	6	7	13
Other ironwork	87	16	103
Other goods made and work done	15	4	19
TOTAL VALUE OF GOODS MADE	1,393	380	1,773
General and jobbing work (including repair work and also shoeing when this has not been included with horse shoes above)	1,866†	522†	2,388†
TOTAL VALUE OF GOODS MADE AND WORK DONE (GROSS OUTPUT)	3,259	902	4,161

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

† 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	1,548	7,976	22	113	1,570	8,089
Administrative, etc.*	25	5,752	17	83	42	5,835
TOTAL	1,573	13,728	39	196	1,612	13,924
<i>Scotland</i> :—						
Operatives	451	2,122	1	5	452	2,127
Administrative, etc.*	6	1,290	8	41	14	1,331
TOTAL	457	3,412	9	46	466	3,458
<i>Great Britain</i> :—						
Operatives	1,999	10,098	23	118	2,022	10,216
Administrative, etc.*	31	7,042	25	124	56	7,166
TOTAL	2,030	17,140	48	242	2,078	17,382
<i>Northern Ireland</i> :—						
Operatives	24	130	—	—	24	130
Administrative, etc.*	1	74	1	2	2	76
TOTAL	25	204	1	2	26	206
<i>United Kingdom</i> :—						
TOTAL	2,055	17,344	49	244	2,104	17,588

* Administrative, technical and clerical staff.

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

England & Wales. (Annual average : Males, 7,951 ; Females, 115 ; Total, 8,066.)

Week ended.	Males.	Females.	Total.	Week ended.	Males.	Females.	Total.
Jan. 12th ..	7,913	114	8,027	July 19th ..	7,976	117	8,093
Feb. 16th ..	7,911	115	8,026	Aug. 16th ..	7,904	116	8,020
March 15th ..	7,900	115	8,015	Sept. 13th ..	7,911	113	8,024
April 12th ..	7,913	117	8,030	Oct. 18th ..	7,976	113	8,089
May 17th ..	7,989	117	8,106	Nov. 15th ..	8,006	115	8,121
June 21st ..	8,010	116	8,126	Dec. 13th ..	8,002	117	8,119

Scotland. (Annual average : Males, 2,077 ; Females, 6 ; Total, 2,083.)

Jan. 12th ..	2,009	6	2,015	July 19th ..	2,068	6	2,074
Feb. 16th ..	2,032	6	2,038	Aug. 16th ..	2,061	6	2,067
March 15th ..	2,056	6	2,062	Sept. 13th ..	2,114	6	2,120
April 12th ..	2,088	6	2,094	Oct. 18th ..	2,122	5	2,127
May 17th ..	2,076	6	2,082	Nov. 15th ..	2,107	6	2,113
June 21st ..	2,081	6	2,087	Dec. 13th ..	2,105	4	2,109

Great Britain. (Annual average : Males, 10,028 ; Females, 121 ; Total, 10,149.)

Jan. 12th ..	9,922	120	10,042	July 19th ..	10,044	123	10,167
Feb. 16th ..	9,943	121	10,064	Aug. 16th ..	9,965	122	10,087
March 15th ..	9,956	121	10,077	Sept. 13th ..	10,025	119	10,144
April 12th ..	10,001	123	10,124	Oct. 18th ..	10,098	118	10,216
May 17th ..	10,065	123	10,188	Nov. 15th ..	10,113	121	10,234
June 21st ..	10,091	122	10,213	Dec. 13th ..	10,107	121	10,228

Northern Ireland. (Annual average : Males, 124 ; Females, 0 ; Total, 124.)

Jan. 12th ..	119	—	119	July 19th ..	125	—	125
Feb. 16th ..	120	—	120	Aug. 16th ..	127	—	127
March 15th ..	119	—	119	Sept. 13th ..	126	—	126
April 12th ..	121	—	121	Oct. 18th ..	130	—	130
May 17th ..	123	—	123	Nov. 15th ..	127	—	127
June 21st ..	124	—	124	Dec. 13th ..	131	—	131

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) 275	275	147	422	—
{ (b) 57	57	—	57	—
Steam turbines { (a) 2	2	10	12	—
{ (b) 1,697	1,697	516	2,213	76
Gas engines { (a) 220	220	13	233	—
{ (b) 644	644	352	996	—
Petrol and light oil engines .. { (a) 43	43	11	54	—
{ (b) 113	113	5	118	—
Heavy oil engines { (a) 37	37	4	41	—
{ (b) 2,768	2,768	1,034	3,802	76
TOTAL { (a) 320	320	24	344	—
TOTAL OF PRIME MOVERS INSTALLED	3,088	1,058	4,146	76
	Kw.	Kw.	Kw.	Kw.
ELECTRIC GENERATORS :—				
Driven by—				
Gas engines (a) 13	13	—	13	—
Petrol and light oil engines.. (a) 4	4	3	7	—
TOTAL OF ELECTRIC GENERATORS INSTALLED	17	3	20	—
	H.P.	H.P.	H.P.	H.P.
ELECTRIC MOTORS :—				
Driven by—				
Electricity generated in own { (a) 38	38	—	38	—
works { (b) 1	1	—	1	—
Purchased electricity .. { (a) 2,880	2,880	1,309	4,189	5
{ (b) 131	131	111	242	—