[*General Distribution.*]

Circular No. 23.

FROM

THE DIRECTOR GENERAL OF RAILWAYS,

TO

THE DIRECTOR, NORTH-WESTERN RAILWAY.
THE MANAGER, OUDH AND ROHILKHAND STATE RAILWAY.
THE ENGINEER-IN-CHIEF, CHAMAN EXTENSION.
THE ENGINEER-IN-CHIEF, MOGULSERAI HOWRAH RAILWAY SURVEY.
THE PORT STOREKEEPER, STATE RAILWAY DEPARTMENT, CALCUTTA.

Rate Lists for Class C, Workshop Machinery and Heavy Tools for 1888.

Simla, 5th November, 1889.

SIR,

I have the honour to forward herewith, for information and guidance, a printed statement showing the actual English rates, *free on board* in England, for C Class State Railway Stores, "Workshop Machinery and Heavy Tools"—contracted for by the Stores Department of the India Office during 1888.

I have the honour to be,

SIR,

Your most obedient Servant,

G. F. MATHEW,
for Director General of Railways.

The Secretaries to the Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh, and the Punjab, Public Works Department.
The Secretaries to the Chief Commissioners of the Central Provinces, Burma, Assam, and Coorg, Public Works Department.
The Secretaries to the Residents, Hyderabad and Mysore, Public Works Department.
The Secretaries to the Agents to the Governor General, Rajputana and Central India, and Baluchistan, Public Works Department.
The Superintendent of Port Blair and Chief Commissioner, Andaman and Nicobar Islands.
The Director General of Telegraphs.
The Inspector General of Military Works.
The Accountant General, Public Works Department.
The Comptroller General.
The Accountant General, Bengal.
The Consulting Engineers for Railways, Madras and Bombay.
The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow and Central Division.
The Agent and General Manager, Assam Railways and Trading Company, Limited.

Copy forwarded to the Local Governments, Administrations and Officers noted in the margin, for information.

G. F. MATHEW,
for Director General of Railways.

Documents accompanying.

Rate List Class C.—"Workshop Machinery and Heavy Tools"—for 1888.

Enclosure to Director General of Railways' Circular No. 23 of 1889.

RATE LIST.

CLASS C.

WORKSHOP MACHINERY AND HEAVY TOOLS

FOR 1888.

G. C. Press, Simla.—No. 1146 P. W. D.—16-11-89—1,100.

Enclosure to Director General of Railways' Circular No. 23 of 1889.

RATE LIST.

CLASS C.

WORKSHOP MACHINERY AND HEAVY TOOLS

FOR 1888.

Enclosure to Director General of Railways' Circular No. 23 of 1889.

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS.

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight.					Rate—Free on board.				Remarks.
			Weight.				Unit.	Amount.			Unit.	
			Tons.	cwt.	qr.	lbs.		£	s.	d.		
1178	Anvils ...	Smith or pike and arch	0	3	0	0	Each ...	2	17	0	Each.	
1270	Crucibles ...	Plumbago, Morgan's No. 10	...	...	...	...	...	0	2	6	Each.	
,,		,, ,, ,, 20	...	...	...	...	...	0	5	0	,,	
,,		,, ,, ,, 30	...	...	...	...	...	0	7	6	,,	
,,		,, ,, ,, 40	...	...	...	...	...	0	10	0	,,	
,,		,, ,, ,, 50	...	...	...	...	...	0	12	6	,,	
1267	Ditto ...	,, ,, No. 5 Salamander	...	...	...	...	...	0	1	3	,,	
,,		,, ,, ,, 40 ,, ...	...	...	...	...	...	0	10	0	,,	
,,		,, ,, ,, 80 ,, ...	...	...	...	...	...	1	0	0	,,	
1368	Ditto ...	Plumbago, Morgan's Salamander No. 10	...	...	...	...	...	0	2	6	,,	
,,		,, ,, ,, ,, 20	...	...	...	...	...	0	5	0	,,	
,,		,, ,, ,, ,, 80	...	...	...	...	...	1	0	0	,,	
1071	Ditto ...	Salamander brand No. 40	...	...	...	...	...	0	10	0	,,	
,,		,, ,, 60	...	...	...	...	...	0	15	0	,,	
1071	Ditto stands for—	Plumbago stands	...	...	...	...	...	0	12	6	,,	

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on board. Amount. £	s.	d.	Unit.	Remarks.
1617	Engines, fire, hand ...	To draw water either by its own cistern or by suction. To have two 6″ pumps with 8″ stroke and valves, valve boxes, pistons, &c., complete.	...	...	...	...	...	117	0	0	Each.	
		The internal diameter of suction to be 2¼″, outside 3¼.″ The delivery way to be 2″ internal diameter and 3¼″ outside. It must be fitted in a copper cistern 16 S. W. G. thick not less than 7′ 6″ long, mounted on strong W. I. angle frame.										
		The following to be supplied with each engine :—										
		2 gun metal nozzles ½″										
		2 ditto ¼″										
		1 ditto spreader										
		1 copper branch pipe with gun metal mounting 36″ Patt.										
		1 copper branch pipe with gun metal mounting 15″ Patt.										
		1 copper branch pipe with gun metal strainer (flat) ...										
		2 pairs wrenches for suction and delivery hose ...										
		1 shifting screw driver 300 feet hose canvas delivery										
		26 shifting screw driver 300 feet hose leather suction ...										

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on board. Amount. £	s.	d.	Unit.	Remarks.
1087	Engines, Semi-portable.	Double cylinder high pressure fixed steam engine of 14-H.P. nominal, with a locomotive type tubular boiler, mounted on a wrought-iron framing with duplicate parts, all necessary mountings pipes, valves, bolts, &c. The dimensions of the parts are as follows :—	9	10	0	0	Each.	*360	0	0	Each.	* This includes the price of 3 sets of tracings and 6 photos.
		Diameter of each cylinder ... ... 9″										
		Length of piston stroke ... ... 12″										
		Diameter of crank shaft made of steel ... ... 4″										
		Revolutions per minute 130										
		Length of boiler barrel ... ... 7′ 7½″										
		Diameter of barrel ... ... 3′ 5½″										
		Thickness of plate in barrel ... ... ⅜″										
		Size of fire-box ... ... 3′ 5½″×4′ 3″										
		Thickness of plates in fire-box ... ... ½″										
		Ditto of tube plates ... ... ⅜″										
		External diameter of tubes ... ... 2½″										
		Thickness of tubes ... ... 11 B. W. G.										
		Total heating surface ... 283,948 sq. ft.										
		Working pressure per sq. inch ... ... 90 lbs.										

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on board. Amount. £	s.	d.	Unit.	Remarks.
1071	Furnace ...	Hot air, Fletcher's No. X	...	...	...	...	...	60	0	0	Each.	
		Delivery free on board	...	...	...	...	...	0	18	0	„	
844	Grindstones, complete, with trough.	Best Derbyshire, with cast iron troughs, 4′ diameter, 8″ thick. The trough to be of cast iron and fitted with mud hole door 8″ × 4″ at the bottom, with four spare stones for each trough.	...	...	...	...	...	71	2	0	„	Two tool rests on V slides, water cans, taps, pipes, splash board of wrought-iron, countershaft pulleys, brackets and striking gear are supplied with each trough.
884 *a*	Grindstones, complete, with troughs.	Extra cost of packing	...	...	...	...	...	1	12	0	„	
816	Grindstones; spare stone for—	24″ × 4″, fine, of Robinhood grit, sawn and turned up on the edge, hole 1½″ diameter.	...	...	...	...	...	0	8	5	„	
1480	Ditto ...	Yorkshire medium grit 2½′ diameter × 8″ thick mounted. The spindles to be fitted with screws, nuts and washerplates for securing the stones on the spindles and with fast and loose driving pulleys 12″ diameter.	...	...	...	...	...	5	17	6	„	
1417	Ditto ...	Yorkshire medium grit, India Store Depôt pattern No. $\frac{4667}{D}$ for quality—										

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on board. Amount. £	s.	d.	Unit.	Remarks.
1417	Grindstone; spare stones for—*concld.*	6″ thickness × 4′ diameter	0	7	0	0	Each.	2	16	9	Each.	
		8″ „ × 4′ „	...	...	...	...	...	3	5	0	„	
		12″ „ × 4′ „	...	...	...	...	...	3	19	9	„	
		Centre hole square 3½″ × 3½″...	...	...	...	...	...	...	...	...		
1583	Ditto	5′ × 10″; Newcastle Port, coarse	...	...	...	...	...	4	9	10	„	
		The centre hole to be 3½″ diameter.										
1605	Ditto	Best Newcastle Port 60″ × 8″ centre hole to be 3½″ in diameter.	...	...	...	...	...	4	13	6	„	
1463	Hammer, steam, (Massey's.)	2 cwt. double acting, with pipes and duplicate parts complete. Suitable for work up to 3″ diameter, anvil block separate on separate foundation, with removable anvil piece stroke 16″.	...	...	...	...	...	96	0	0	Each.	
978	Hammer, steam ...	5 cwt., double acting, with pipes and duplicate parts complete as supplied on Contract C. 124 of 1880.	...	...	...	...	...	196	5	6	„	Without tracings.
1125	Hearth ...	Smiths', each 3′ 6″ × 2′ 8″, the forges are to be of cast iron with hoods, air valves, pipes, water tanks, coal troughs, tuyeres, fire bricks, and 20′ of vertical W. I. chimney.	...	...	...	...	...	15	19	6	Each.	

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on board. Amount. £	s.	d.	Unit.	Remarks.
1102	Lathe, power, self-acting, gap, screw cutting and surfacing.	6″ centre self-acting gap with plain gap cast in the bed. To take between centres 5′. The sliding and surfacing motions being worked from a back shaft, the guide screw being used for screw cutting only cast, headstock to have a base of about 19″ long and 8″ wide, and to be double geared. The cone to be four speeded, each step being 1¾″ wide, and of the following diameters 8¼″, 6¾″, 5¼″, and 3¾″. The bed is of sufficient length to take in 5 feet between the centres, 12″ wide over the V's and 8″ deep, the gap to admit work up to 24″ diameter and 6″ wide. The lathe is complete in every respect, and to be supplied with a complete set of change wheels for cutting screws, &c.	1	10	0	0	Each.	172	7	6	Each.	
		Tracings	...	...	...	...	...	5	0	0	Set.	
		Photos.	...	...	...	...	...		3	0	Copy.	
1102	Lathe, power; self-acting, gap, screw cutting and surfacing.	8″ centres. To take between centres 6 feet. The fast head stock to have a base about 26″ long and 10½″ wide and to be double geared. The cone to be four speeded, each step being 2¼″ wide and of the following diameters 11, 9, 7, and 5 inches. The loose head stock is to have a base of about 12″ long and 9″ wide.	3	0	0	0	Each	229	15	6	Each.	

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Ton.	cwt.	qr.	lbs.	Unit.	Rate—Free on board. Amount. £	s.	d.	Unit.	Remarks.
		The bed is to be of sufficient length to take in 6′ between the centres, 15″ wide over the V's. and 10″ deep. The gap is to be made to admit work up to 32″ diameter and 8″ wide. The lathe is to be complete in every respect and is to be supplied with a complete set of change wheels for cutting screws, &c.										
		Tracings	...	...	...	...	...	5	0	0	Set.	
		Photos.	...	...	...	..	...	0	3	0	Copy.	
1447	Lathe gap, self-acting sliding, surfacing and screw cutting.	Height of centres 8″ length of bed between centres 8 feet to admit in gap a diameter of 3 feet and a width of 1 foot diameter of large face plate 2′ Ditto face plate with Clement's driver } 18″ The lathe is complete in every respect and is supplied with 100 feet of best leather belting. The countershafts are made suitable for bolting to a wall 2′ 6″ thick.	...	...	...	...	...	247	0	0	Each.	
1098	Lathe, power; self-acting, gap screw cutting and surfacing.	14″ with gap as supplied under Contract C137 of 1880, but to be fitted as gap lathes. The bed is to be of sufficient length to take in 15 feet between the centres, 20 inches wide, 16 inches deep, and is supported on three C. I. standards, 13 inches high, 9 inches wide, and 3 feet across the base. The guide screw is 3″ diameter, one face plate 20″ diameter and one 28″ with 4 steel dogs. One dozen right and one dozen left hand tools, one dozen sliding tools and one dozen screw cutting tools of 16 steel 1½″ × 1½″ × 16″ long to be supplied; also 100 feet of Scandinavia cotton belting.	8	15	0	0	Each.	438	5	0	„	1 set of tracings and 6 photos:—£ 5-18-0.

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on board. Amount. £	s.	d.	Unit.	Remarks.
1094	Lathe, power; self-acting.	One 14 inch wood turning lathe, with cast iron bed 13 feet long, to take in 8 feet between the centres; the bed supported on 3 C. I. standards. Is provided with the following:—Countershaft; brackets and bolts; and fast and loose pulleys; one set of wrought-iron case hardened black finished spanners. One Kaye's corrugated tin oil can, of approved size; 100 feet of "Scandinavia." Cotton belting 4 inches broad; one single belt 25 feet long and 3 inches broad. Six laces of approved quality and with bolts, nuts and washers.	2*	0	0	0	Each.	58	0	0	Each.	*Net.
1103	Lathe, power; self-acting and surfacing break.	18″ centre treble-geared, with loose bed 12 feet long to admit 5′ 9″ diameter, 3′ 2″ wide in break when open; 5′ 0″ and 3′ 0″ diameter faceplates, 4 chuck jaws travelling and fixed stays, &c., also 4 dozen steel tools, 100 feet belting and fittings, &c.	13	10	0	0	,,	450	0	0	,,	
1101	Lathe, power; self-acting wheel.	3′ to turn a pair of wheels varying from 21″ to 3′ diameter on the tread on their own axle, on axles from 3′ to 5′ 6″ long. The bed to be not less than 13′ long and 12″ deep. To be provided with spindles of Siemens-Martin or Bessemer steel having parallel necks of a diameter of not less than 5″ and 6¼″ at the small and long ends respectively. The face plates to have a diameter of not less than 3′ 6″.										

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HAEVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on Board. Amount. £	s.	d.	Unit.	Remarks.
		The lathe to be complete in every respect and to be provided with a set of spare centres, one dozen ratchet levers one dozen round nosed tools, one dozen right hand tools, one dozen left hand tools, one dozen strong boring tools of steel 2¼″ × 2″ and 20″ long and 2 forged steel bars each 30″ long and 3″ square with 24 steel cutters.	13	0	0	0	Each	390	0	0	Each.	
		Tracings	...	...	...	...	...	3	0	0	Set.	
		Photos.	...	...	...	...	...	0	1	0	Copy.	
1101	Lathes wheel ...	4′ 6″ to be adapted to turn a pair of wheels from 2′ to 4′ 6″ diameter on the tread on their own axle, on axles from 3′ 9″ to 8′ 6″ long. The bed is not to be less than 18′ long and 15″ deep and of a breadth of not less than 3′ 6,″ and two face plates of a diameter of not less than 5′ 6″ are to be provided. The lathe is to be complete in every respect and is to be supplied with one set of spare centres, one dozen ratchet levers, one dozen round-nosed tools, one dozen right hand tools, one dozen left hand tools and one dozen boring tools of steel 24″ long by 2¼″ by 2″ and 2 forged steel bars each 36″ long and 4″ square with 24″ steel cutters	22	0	0	0	Each.	570	0	0	Each.	
		Tracings	...	...	...	...	...	3	0	0	Set	
		Photos.	...	...	...	...	...	0	1	0	Copy.	

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on board. Amount. £	s.	d.	Unit.	Remarks.
1400	Lubricators' needle ...	No. 1 round of the description known as Lieuvain's patent	0	0	0	0	...	0	0	4	Each.	
1103	Machine— Drilling, vertical, self-acting.	To drill 1½ inch holes, double geared with 1¾″ steel spindles to admit 39″ diameter 30″ deep on table, with self-acting feed motions, 15″ deep, provided with 4 sockets for Morse drills from $\frac{3}{16}$″ to 1½″ diameter and a set of Morse twist drills, with 100 feet of belting and fittings.	2	2	0	0	Each.	78	0	0	Each.	
1103	Machine— Drilling, vertical, double geared.	To drill 2 inch holes, double geared with 2¼″ steel spindle to admit 48″ diameter, 32″ deep on table with self-acting feed motion 16″ deep. These must also be provided with 4 sockets ⅜″ to 2″ rising by $\frac{1}{16}$″ with 100 feet of belting and fittings.	2	5	0	0	,,	105	0	0	,,	
1086	Machine—Drilling for wheel tyres.	Adapted for drilling holes from the inside of the rim in the tyres of wheels when on their axles; it will drill holes up to 1″ diameter and 3″ deep. The feed is arranged so that it can be worked by hand or by self acting motion at will. A complete set of steel drills of the following sizes ½″, $\frac{9}{16}$″, ⅝″, $\frac{11}{16}$″, ¾″, $\frac{13}{16}$″, ⅞″, $\frac{15}{16}$″, and 1″ must be supplied.	...	...	...	...	...	53	0	0	,,	
1226	Machine—Emery grinding.	Twist drill complete with 6 emery discs for grinding drills $\frac{5}{16}$″ to ½″ advancing by 32 seconds from $\frac{9}{16}$″ to 2″ advancing by 16ths similar to that supplied under Contract C 59 of 1876.	0	7	3	0	Net.	62	6	0	,,	Less 10 per cent. discount = £ 56-1-5.
			0	12	2	0	Gross.					
835	Machine—Emery grinding, spare discs for—	Wheels, emery for, 8″ diameter by 1″ thick ...	...	...	...	...	...	0	7	0	,,	Less 10 per cent. discount— £ 3-12-8 on the whole amount £ 36-7-0.
		,, ,, 8″ ,, 1½″ ,, ...	...	...	...	...	...	0	9	6	,,	

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on board. Amount. £	s.	d.	Unit.	Remarks.
	Machine—Emery grinding, spare discs for—	Wheels, emery for, 14″ diameter by 1½″ thick ...	...	...	...	...	...	1	6	0	Each.	
		,, 20″ ,, ,, 1″ ,, ...	...	...	...	...	...	1	13	4	,,	
		,, 20″ ,, ,, 2″ ,, ...	...	...	...	...	...	3	2	8	,,	
1371	Machine—Milling ...	Patent size No. 1 for articles ⅛″ to 1½″ diameter 7½″ long.	...	...	...	...	...	5	10	0	,,	
		Ditto size No. 2 for articles from ¼″ to 2″ diameter, 17½″ long.	...	...	..	...	...	9	10	0	,,	
		The machines are suitable for cutting straight and spiral (right and left) grooves, such as twist drills, rimers, taps, &c. They should be capable of being fixed to any lathe fitted with compound slide rests without alteration of any kind.										
820	Machine—Milling—cutters, for—	Milling cutters, round edged for making twist drills in sets ½″ to 1″ rising by $\frac{1}{16}$″ for Smith and Coventry's Milling Machine.	...	...	...	...	...	6	18	5	Set.	
	Ditto	Milling cutters spiral 3½″ long × 4″ diameter Smith and Coventry's Milling Machine No. 3387.	...	...	...	...	...	2	1	1	Each.	
782	Ditto	Cutters, steel, for making cutters for Milling machine No. 3387 (Smith and Coventry's).	...	...	...	...	...	0	15	0	,,	
782 (*a*)	Ditto	Ditto ditto ditto ..	...	...	...	...	...	0	15	0	,,	
1603	Machine—Rivet and bolt making.	Suitable for making rivets or bolts up to 8″ long in iron or steel, to be complete in every respect and to be supplied with the following :—	...	...	...	...	...	...	...	...		

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS.

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate Gross Weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on Board. Amount. £	s.	d.	Unit.	Remarks.
		One pair of tools for cup head rivets, one pair ditto for countersunk head ditto, one pair ditto, hexagon head bolts, one pair ditto, for square head bolts, one frazing tool with holder and rest, one pair of steel cutters, one set W. I. spanners, oil can and bolts, nuts and washer plates for fixing each machine to a foundation 4 feet deep	...	...	...	...	...	400	0	0	Each	
1066	Machine—Sawing.	Cold for cutting steel rails of the Vignole's section weighing 75 lbs per yard.						41	10	0	„	
		The machine is fitted with a drilling arrangement and six spare drills and with a compound slide rest.										
		Spare saws for above						1	15	0	„	
1094	Ditto ...	With table 5′ 6″ long, 2′ 9″ wide for 36 inch saws suitable for sawing planks, logs, &c.	0	*17	0	0	Each	78	0	0	„	* Net.
		To be provided with the following:—Two strong iron carriages for supporting the ends of the planks, &c., S—15 feet lengths of wrought-iron bridge rails of light section with all necessary screws, &c., for fixing them.										
		One best cast steel circular saw 36 inches diameter and four ditto—*viz.*, one each 36 inches, 30 inches, 24 inches, and 20 inches diameter, 100 feet of Scandinavia cotton belting 4½″ broad, one single belt 8 feet long and 3 inches wide, one single belt 15 feet long and 2 inches wide, one Kayes corrugated tinloil can, of approved size, six laces; one set of wrought-iron case hardened black finished spanners. Bolts, nuts, and washer plates.										Photos.-£0-2-6 per copy.

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CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate Gross Weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on Board. Amount. £	s.	d.	Unit.	Remarks.
1094	Machine, sawing, circular, Bench.	One Circular Saw Bench for cross cutting with table 6′ long × 2′ 6″ wide for cutting timber up to 6″ × 12″. To be supplied with the following:—	1	5	0	0	Each	83	15	0	Each.	Tracings-£ 3-15-0 per set.
		Countershaft; three best cast steel circular saws each 30 inches diameter; 100 feet of Scandinavia cotton belting 4½″ broad; one single belt 25′ long and 6″ broad, six laces, one Kaye's, one single belt 20′ long and 2″ broad; corrugated tin oil can, one set of wrought-iron case hardened black finished spanners. Bolts, nuts and washer plates.										
1266	Machine—Saw sharpening discs, emery, spare for—	12″ diameter by ¼″ thick, diameter of spindle ¾″ ...						0	3	2	„	
1344	Ditto ...	Discs for 12″ × ⅜″						0	3	9	„	
1568	Ditto ...	Emery, discs, crown brand for:—										
		12″ diameter ¾″ thick ½″ hole						0	9	0	„	
		12″ „ ⅝″ „ ¾″ „						0	7	6	„	
		12″ „ ½″ „ ¾″ „						0	6	0	„	Less 10 per cent. discount.
		12″ „ ⅜″ „ ¾″ „						0	4	6	„	
		12″ „ ¼″ „ ¾″ „						0	3	0	„	

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CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on Board. Amount. £	s.	d.	Unit.	Remarks.
1115	Machine—Screwing	To screw and tap from ¼″ to 2″ rising by ⅛″. Seller's hollow spindle screwing machine to cut screws by once passing through the dies and provided with 15 sets of dies, 15 working taps, 15 master taps, 4 cone rhymers jaws, thimbles and cotton belting.	1	6	0	0	Each.	120	0	0	Each.	
1069	Machine—Shaping	15″ stroke, traverse of table 5′ as supplied on Contract C 120 of 1880; there must also be supplied 100 feet of cotton belting of the description known as "Scandinavia."	7 6	12 18	3 0	0 0	„ „	240	0	0	„	*Net weight.
1070	Ditto.	18″ stroke, traverse of table 7′ 6″ as supplied on Contract C 139. The machine is supplied with 100 feet of cotton belting of the description known as "Scandinavia."	...	...	...	...	„	310	0	0	„	
1229	Machine—Slotting	6″ stroke, the countershaft pulleys to be of suitable size, so that the machine will run at the proper speed when being driven off a drum 3′ diameter, running at 90 revolutions on the main shaft. The counter shaft brackets to have a base of 18″ long by 7″ wide; the machine to be supplied with 100′ of best leather belting and 6″ laces of approved make.	...	...	...	...	„	112	0	0	„	

CLASS OF STORES, C.—WORKSHOP MACHINERY AND HEAVY TOOLS—*contd.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on Board. Amount. £	s.	d	Unit.	Remarks.
...	Machine—Tool, Grinding, Emery discs, sternes, for—	14″ diameter, 2″ thick, 3½″ hole diameter	0	0	0	0	Each.	1	15	0	Each.	Less 10 per cent. discount.
		14″ ditto 2″ ditto 1¾″ ditto	0	0	0	0	„	1	15	0	„	
		20″ ditto 1½″ ditto 10″ ditto	0	0	0	0	„	2	18	0	„	
530	Shafting ...	3″ diameter in lengths of 15′—finished bright Each length with one-half disc coupling keyed on at each end.	0	0	0	0	„	5	3	7	Length.	
897	Shafting ...	Wrought-iron (Lowmoor) fan shaft turned out and finished bright all over with keybeds planed and shaft; packed in case.	0	0	0	0	„	34 or 1	5 16	10 9½	Each.	
1043	Shafting ...	8—21 feet lengths of 3 inches diameter with one-half discs coupling keyed on each end of every length; finished bright. 1—14 feet length of 3 inches diameter with one-half discs coupling keyed on each end of every length; finished bright.	3	10	0	0	Nine lengths.	55	14	6	For nine.	
		2 wall boxes with bearings, &c., complete, and 18 wall brackets, complete.	5	15	0	0	Total.	79	5	9	For twenty.	

CLASS OF STORES, C—WORKSHOP MACHINERY AND HEAVY TOOLS—*concld.*

Contracted for in 1888.

Contract Number.	Articles.	Details.	Approximate gross weight. Weight. Tons.	cwt.	qr.	lbs.	Unit.	Rate—Free on board. Amount. £	s.	d.	Unit.	Remarks.
	Shafting—*concld.*	Main shaft drums 1 foot diameter × 8″ wide—2										
		,, ,, ,, 1′ 6″ ,, × 8″ wide—1										
		,, ,, ,, 1′ 2″ ,, × 1′2″ wide—1										
		,, ,, ,, 2′ ,, × 8″ wide—3										
		,, ,, ,, 2′ 6″ ,, × 8″ wide—1	3	0	0	0	Total.	58	10	11	Total.	Tracings per set, £ 3-3-0.
		,, ,, ,, 2′ 6″ ,, × 2″ wide—1										
		,, ,, ,, 3′ ,, × 10 wide—3										
		,, ,, ,, 3′ ,, × 8″ wide—1										
		,, ,, ,, 4′ ,, × 1′ wide—1										
		,, ,, ,, 4′ ,, × 8″ wide—1										
1007	Surface plates ...	40″ square, but without stands ...	...	...	...	...	...	25	0	0	Each.	
		One 16″ square	...	...	...	...	...	6	0	0	,,	

G. F. MATHEW,

for Director General of Railways.