IN ORDERING, PLEASE STATE WHAT SERIES OF CATALOGUE.

TWENTY-EIGHTH SERIES.

THOS. ROBINSON & SON'S

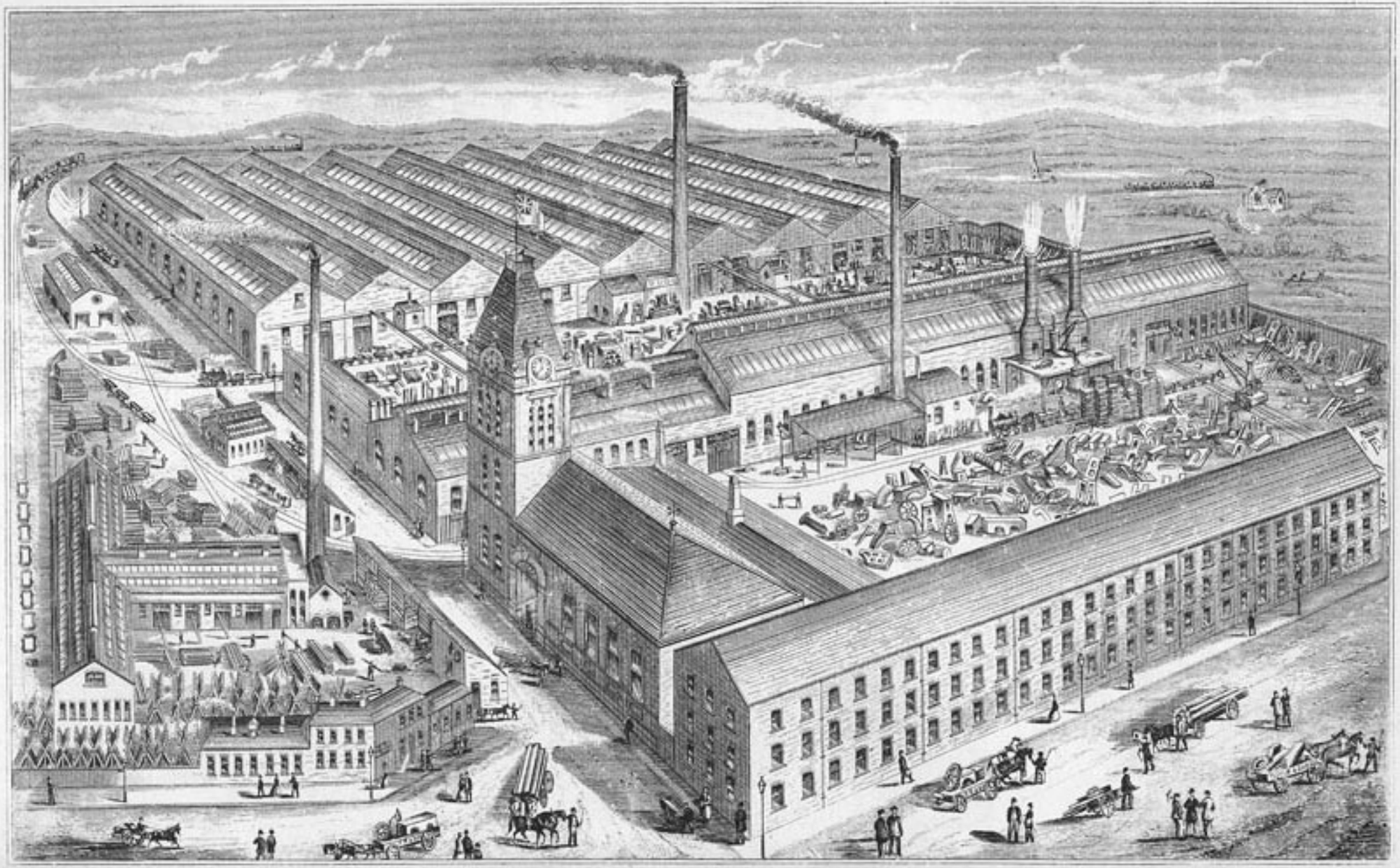
ILLUSTRATED CATALOGUE

OF

WOOD-WORKING MACHINERY.

ROCHDALE, NEAR MANCHESTER.

NOVEMBER 1873.



THOMAS ROBINSON & SON ROCHDALE NEAR MANCHESTER

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THOS. ROBINSON & SON'S

Illustrated Catalogue

OF

WOOD-WORKING

MACHINERY.

Rochdale, near Manchester.

NOVEMBER 1873.

THOMAS ROBINSON & SON, in issuing the Twenty-eighth Series of their Catalogue, beg to inform their numerous customers, both in England and various Foreign countries, that the great demand for their machinery has induced them to double the size of their works during the last four years, covering at the present time not less than 30,000 square yards of ground. The whole of the works are furnished with the most modern tools and appliances, and form one of the most interesting engineering establishments in Lancashire.

The number and varied uses of timber are now so great that the employment of machinery, for the purpose of sawing and working it in different ways, has become a matter of necessity to any person carrying on a business where it is converted, even only to a moderate extent.

T. R. & Son have for above twenty years carried on, in addition to their machine-making business, a large establishment for the sawing up of timber, and working the same in doors, windows, and mouldings, by machinery. This has enabled them to bring their wood-cutting machinery to a greater state of perfection, and greater simplicity of construction, than any other makers in the trade.

T. R. & Son have, in their wood-cutting establishment, always in full operation, and at any time to be seen working, all the machinery they make; this is of great advantage to purchasers, who are thus much better able to decide as to their requirements than from a drawing.

The machinery made by T. R. & Son contains complete sets or plants of—

Machinery for Builders and Contractors.
,, Timber Merchants.
,, Ship Builders.
,, Railway Carriage Builders.
,, Cotton and Woollen Machinists.
,, Making Casks and Barrels.
,, ,, Gunstocks.
,, ,, Packing Cases.
,, Wheel-making.
,, Cutting Wood for Paper Pulp.

They are also prepared to make special tools for any other work.

INDEX.

HORIZONTAL HIGH-PRESSURE STEAM ENGINES AND BOILERS.

The Horizontal form of Steam Engine is coming generally into use; the simplicity of their construction, the working, the less liability to breakdowns, and the very great saving in first cost, must before long cause them completely to supersede the Beam Engine.

Believing that the trade in this form of Steam Engine is capable of much greater development, we have recently built additional Works, and fitted them up with Machinery specially adapted for such work, and we are now prepared to execute orders for Horizontal Engines of any size, either of High Pressure, Condensing, or Compound.

The Horizontal High-Pressure Engine shown on the accompanying drawing is constructed on the most improved principle for the economisation of fuel. It is fitted with pump for supplying water to the boiler, flywheels, governors, equilibrium valve, and stop valve.

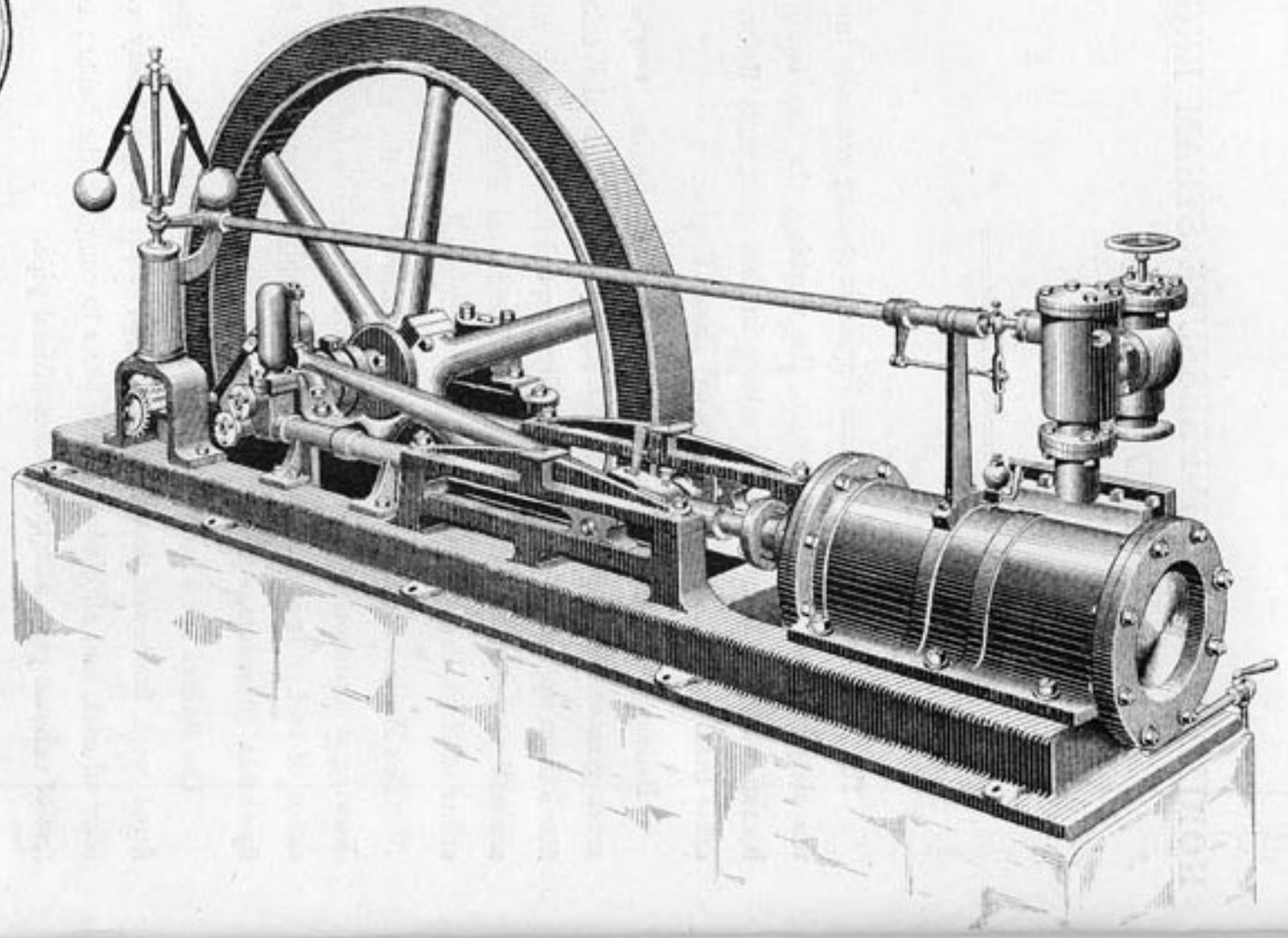
The Boilers are what are known as the "Cornish Boilers," and are fitted with fire-boxes, doors, water gauges, steam gauges, safety valves, blow-off cock, and all other requisite parts to complete the boiler; twelve feet of exhaust pipe, and twelve feet of feed pipe.

THOMAS ROBINSON & SON,

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD - CUTTING MACHINERY.



HIGH PRESSURE STEAM ENGINES AND BOILERS.

HORIZONTAL HIGH-PRESSURE STEAM ENGINES AND BOILERS.

Horse Power.	Diameter of Cylinder.	Length of Stroke.	Diameter of Crank Shaft.	Diameter of Flywheel.	Weight of Flywheel.	Price.	Weight of Engine.	Length & Diam. of Cornish Boilers.	Weight of Boiler & Fixings.	Price.
								Diam. Length.		
4	7 in.	14 in.	2½ in.	4 ft. 0 in.	9 cwt.	£64	1 ton. 5 cwt.	3 ft. 6 in. 8 ft.	2 tons. 10 cwt.	
6	9 „	18 „	3 „	5 „ 0 „	12 „	87	2 „ 0 „	4 „ 0 „ 10 „	3 „ 5 „	
8	10 „	20 „	3½ „	6 „ 0 „	15 „	116	2 „ 15 „	4 „ 0 „ 14 „	4 „ 0 „	
10	11 „	22 „	4 „	7 „ 6 „	24 „	128	3 „ 10 „	5 „ 0 „ 13 „	4 „ 10 „	
12	12 „	24 „	4½ „	7 „ 6 „	30 „	151	4 „ 0 „	5 „ 0 „ 15 „	5 „ 5 „	
14	13 „	24 „	5 „	9 „ 0 „	35 „	174	4 „ 10 „	5 „ 0 „ 16½ „	6 „ 0 „	
16	14 „	24 „	5½ „	9 „ 0 „	42 „	197	5 „ 0 „	5 „ 0 „ 18 „	6 „ 10 „	
18	15 „	30 „	5¾ „	10 „ 6 „	50 „	232	5 „ 10 „	5 „ 6 „ 18 „	7 „ 0 „	
20	16 „	30 „	6 „	10 „ 6 „	60 „	255	6 „ 0 „	5 „ 6 „ 20 „	7 „ 10 „	
22	16¾ „	30 „	6¼ „	10 „ 6 „	80 „	278	6 „ 10 „	6 „ 6 „ 20 „	8 „ 5 „	
24	17¼ „	36 „	6½ „	11 „ 6 „	80 „	307	7 „ 10 „	6 „ 6 „ 21½ „	9 „ 0 „	
26	18 „	36 „	6¾ „	12 „ 6 „	90 „	331	8 „ 5 „	7 „ 0 „ 22 „	10 „ 0 „	
28	18½ „	36 „	6⅞ „	13 „ 0 „	95 „	360	9 „ 0 „	7 „ 0 „ 23½ „	11 „ 0 „	
30	19¼ „	36 „	7 „	13 „ 0 „	100 „	383	10 „ 0 „	7 „ 0 „ 25 „	12 „ 0 „	
35	21 „	36 „	8 „	14 „ 0 „	120 „	447	13 „ 0 „	7 „ 0 „ 28 „	13 „ 10 „	
40	22 „	36 „	8½ „	14 „ 0 „	140 „	510	14 „ 10 „	Two Boilers of 5 „ 6 „ 20 „	15 „ 0 „	

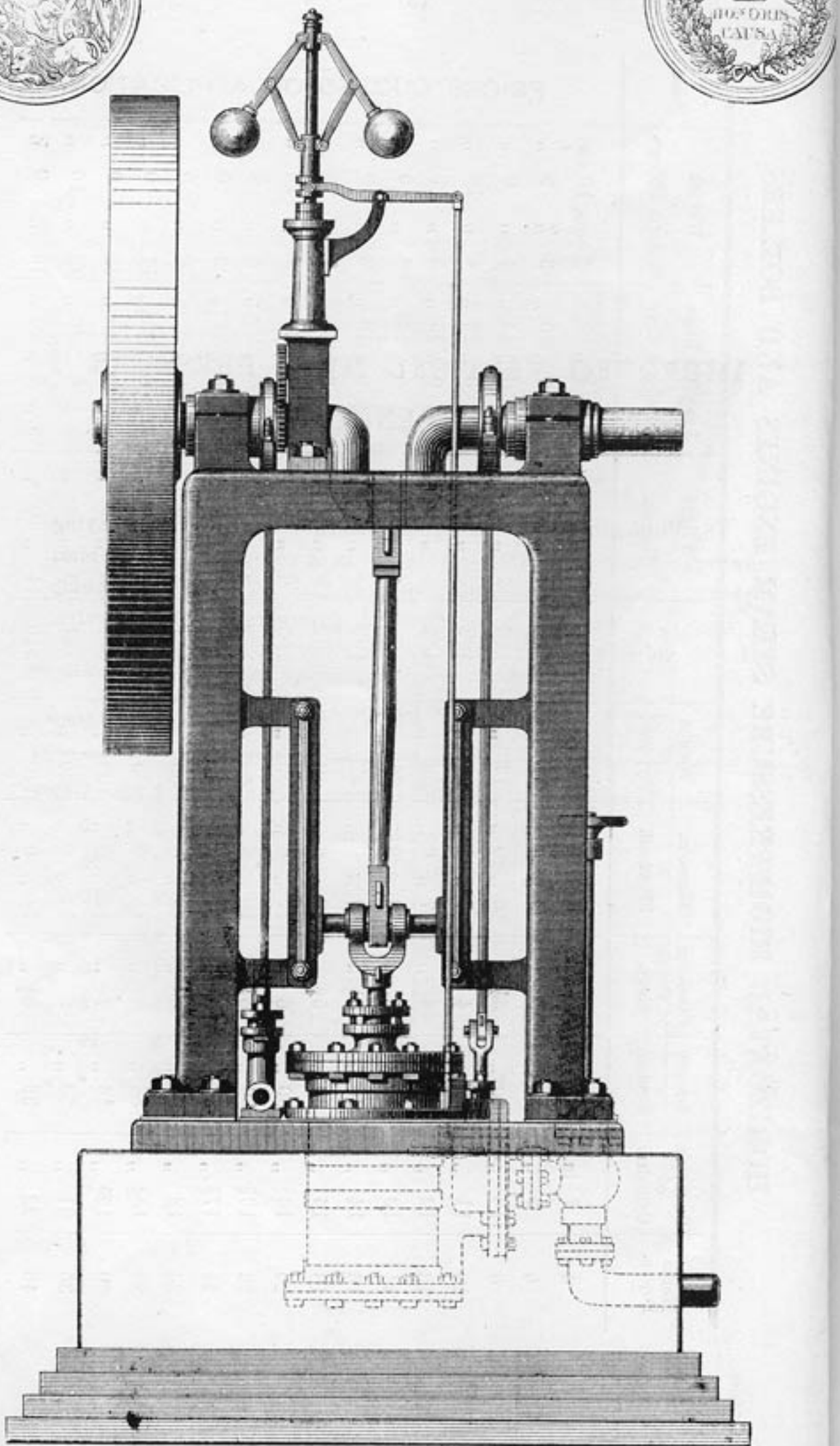
PRICES QUOTED ON APPLICATION.

THOMAS ROBINSON & SON,

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD - CUTTING MACHINERY.



IMPROVED VERTICAL HIGH PRESSURE STEAM ENGINE.

IMPROVED VERTICAL HIGH PRESSURE STEAM ENGINE.

The Vertical form of Steam Engine as shown on the accompanying drawing is coming generally into use. It is constructed on the most improved principle for the economisation of fuel. It is fitted with pump for supplying water to boiler, flywheel, governors, equlibrium valve, and stop valve.

Horse Power.	Diamr. of Cylinder	Length of Stroke.	Diamr. of Crank Shaft.	Diameter of Flywheel.	Weight of Flywheel.	Price.	Weight of Engine.
4	7 in.	14 in.	2½ in.	4 ft. 0 in.	9 cwt.	£64 0 0	1 ton 5 cwt.
6	9 „	18 „	3 „	5 „ 0 „	12 „	87 0 0	2 „ 0 „
8	10 „	20 „	3½ „	6 „ 0 „	15 „	116 0 0	2 „ 15 „
10	11 „	22 „	4 „	7 „ 6 „	24 „	128 0 0	3 „ 10 „
12	12 „	24 „	4½ „	7 „ 6 „	30 „	151 0 0	4 „ 0 „
14	13 „	24 „	5 „	9 „ 0 „	35 „	174 0 0	4 „ 10 „
16	14 „	24 „	5½ „	9 „ 0 „	42 „	197 0 0	5 „ 0 „
18	15 „	30 „	5¾ „	10 „ 6 „	50 „	232 0 0	5 „ 10 „
20	16 „	30 „	6 „	10 „ 6 „	60 „	255 0 0	6 „ 0 „

THOMAS ROBINSON & SON,

ROCHDALE.

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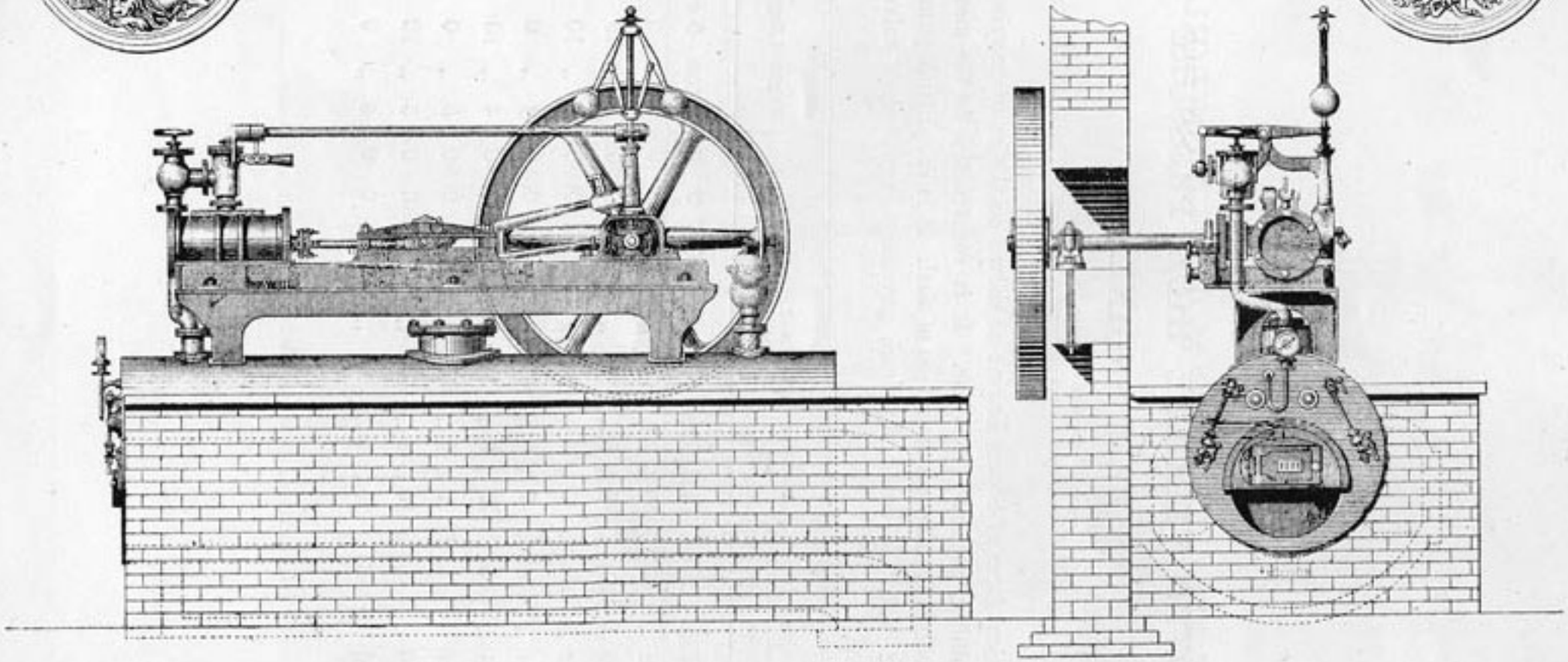
WOOD - CUTTING MACHINERY.



HORIZONTAL HIGH-PRESSURE STEAM ENGINES AND BOILERS.

HORIZONTAL ENGINES MOUNTED ON BOILERS.

This arrangement of motive power is very useful for small Engines, where it is desirable to economise room and avoid expensive foundations.

A frame is fixed on the boilers, to which the Engine bed is bolted down.

They are made of the following dimensions and prices :—

Horse Power.	Diamr. of Cylinder	Length of Stroke.	Diamr. of Crank Shaft.	Diameter of Flywheel.	Length and Diamr. of Cornish Boilers.	Weight.	Price
					Diam. Length.		
4	7in.	14in.	2½in.	4 ft. 0 in.	3 ft. 6 in. 8 ft.	4 tons.	PRICES QUOTED ON APPLICATION.
6	9 „	18 „	3 „	5 „ 0 „	4 „ 0 „ 10 „	5 „ 13 cwt.	
8	10 „	20 „	3½ „	6 „ 0 „	4 „ 0 „ 14 „	7 „ 10 „	
10	11 „	22 „	4 „	7 „ 6 „	5 „ 0 „ 13 „	9 „ 0 „	
12	12 „	24 „	4½ „	8 „ 6 „	5 „ 0 „ 15 „	10 „ 5 „	

IMPROVED VERTICAL STEAM ENGINES, FIXED ON BOILERS.

These Engines are especially arranged for sawing, winding, pumping, and driving any description of machinery.

These Engines embody many important improvements, and are, in design and workmanship, much superior to the usual class of vertical engines.

The cylinder area and boiler capacity are very large for the respective nominal powers, points which are of the greatest importance in comparing the relative capabilities and prices of these Engines with those of other makers.

The governors are direct acting.

Crank shafts of the locomotive form (enabling the power to be given off on either or both sides at once,) are supported in a substantial fixing, which receives both ends of crank shaft.

Force pumps, worked by an eccentric, and fitted with brass valve-boxes and treble valves, are also attached to the plate referred to above, clear of the boiler barrel.

Boilers are of the dome variety, with cross-section Lowmoor tubes, are of extra strength, and are of very large capacity, consequently steam well with inferior fuel. Each is fitted with safety valve, pressure gauge, water gauge, gauge cock, and blow-off cock complete, and is supported upon a strong base plate, forming an ash-pan, which is fitted with a regulator for the draught.

In addition to their unusually large cylinder area and boiler capacity, these Engines embody the most complete equipment and highest finish throughout.

PRICES.

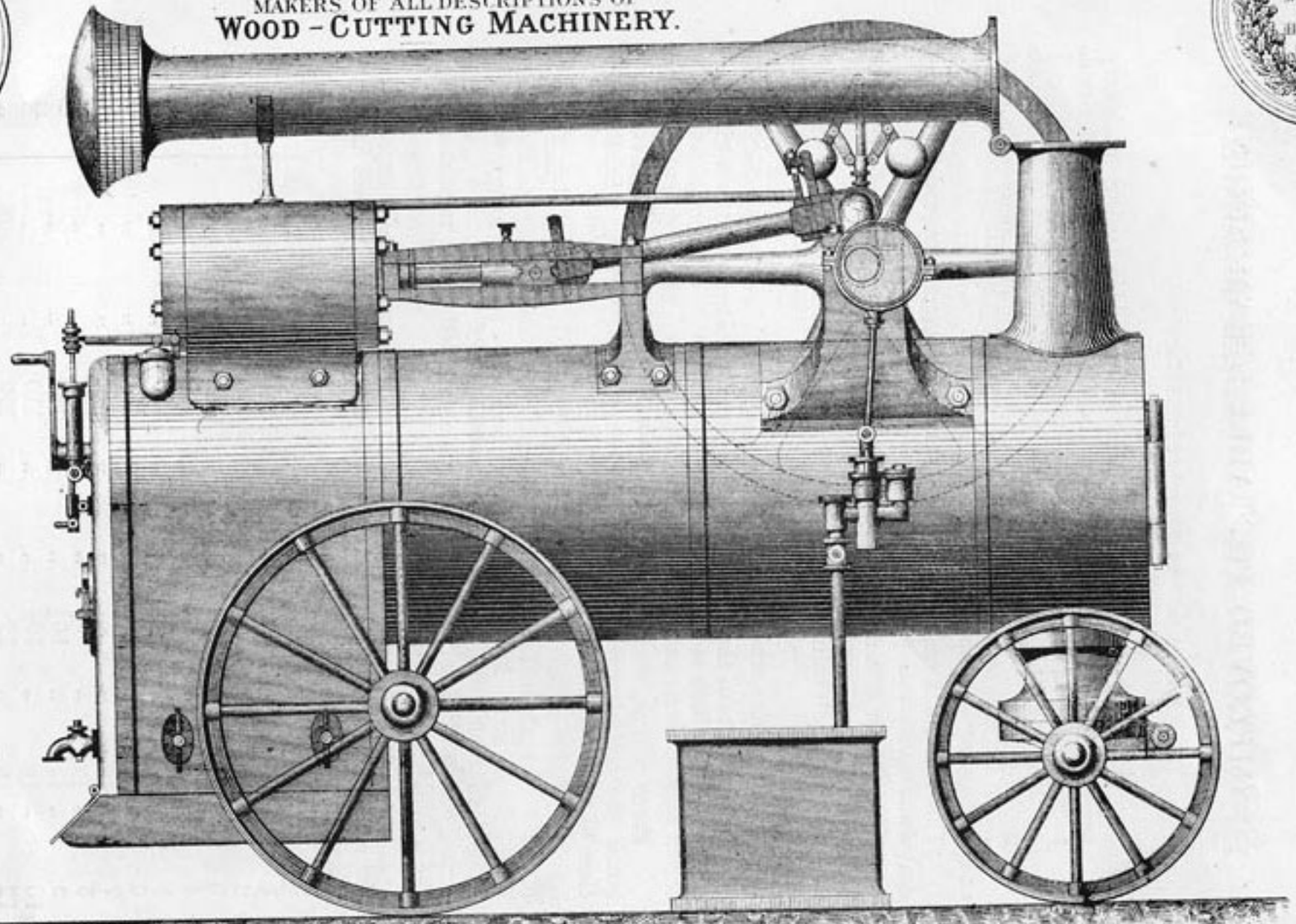
1	horse power,	cylinder	4in.	diameter,	speed	215	revols.	per minute
2	"	"	5	"	"	180	"	"
3	"	"	6½	"	"	180	"	"
4	"	"	6¾	"	"	150	"	"
5	"	"	7½	"	"	125	"	"
6	"	"	8½	"	"	125	"	"
7	"	"	9	"	"	125	"	"
8	"	"	9½	"	"	125	"	"
9	"	"	10¼	"	"	125	"	"
10	"	"	10¾	"	"	110	"	"
12	"	"	12	"	"	110	"	"

PRICES QUOTED ON APPLICATION.

ROCHDALE.

MAKERS OF ALL DESCRIPTIONS OF

WOOD - CUTTING MACHINERY.



IMPROVED PORTABLE STEAM ENGINE.

IMPROVED PORTABLE STEAM ENGINE.

These Engines are especially adapted for driving sawing machinery, pumping, &c., and for contractors and others who do not find it desirable to make a permanent foundation.

They are simple in construction, of the best material, and first-class workmanship throughout, and combine all the most modern improvements to make them as economical as possible.

The following may be considered as some of the advantages :—

For the nominal power there is an unusually large cylinder area and boiler capacity.

The boilers are constructed for burning wood and other fuel where coal is not obtainable.

The cylinders are steam jacketted, the governors direct acting, steel piston-rod and joint pins, crank-shaft and connecting-rod, of best hammered scrap iron, and crank-shaft is made so as to give off power on both sides of Engine at once. The greatest durability is obtained, owing to the strength of parts and the large wearing surface provided in all the gun-metal bearings.

Each Engine is fitted with safety valve, pressure gauge, water gauge, gauge cock, and blow-off cock, &c., complete.

A continuous vertical force pump, worked by an eccentric and fitted with brass valve boxes, is attached to the side of the boiler.

These Engines are made with single or double cylinder, according to size.

PRICES.

Single Cylinder Engines.

2½-horse	power	.....	cylinder	5¼	in.	diameter	.....
3	,,	.....	,,	6¼	,,	,,	.....
4	,,	.....	,,	6¾	,,	,,	.....
5	,,	.....	,,	7⅜	,,	,,	.....
6	,,	.....	,,	8½	,,	,,	.....
7	,,	.....	,,	8⅞	,,	,,	.....
8	,,	.....	,,	9½	,,	,,	.....
9	,,	.....	,,	10⅛	,,	,,	.....
10	,,	.....	,,	10½	,,	,,	.....
12	,,	.....	,,	12	,,	,,	.....

Double Cylinder Engines.

8-horse	power	.....	2 cylinders	6¾	in.	diameter	.....
9	,,	.....	,,	7	,,	,,	.....
10	,,	.....	,,	7⅜	,,	,,	.....
12	,,	.....	,,	8½	,,	,,	.....
14	,,	.....	,,	8⅞	,,	,,	.....
16	,,	.....	,,	9½	,,	,,	.....
18	,,	.....	,,	10	,,	,,	.....
20	,,	.....	,,	10½	,,	,,	.....
25	,,	.....	,,	12	,,	,,	.....
30	,,	.....	,,	13	,,	,,	.....

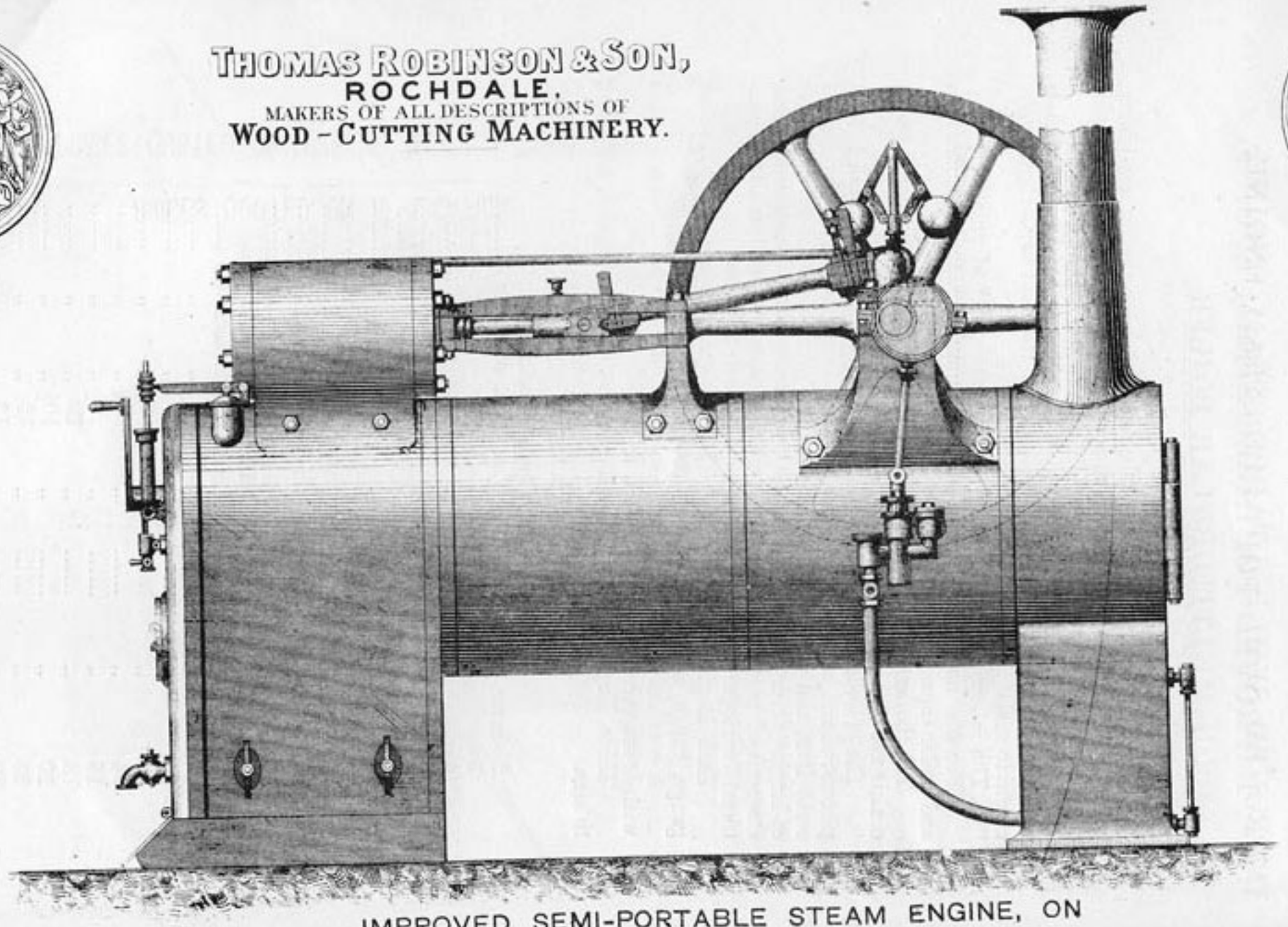
PRICES QUOTED ON APPLICATION.

THOMAS ROBINSON & SON,

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD-CUTTING MACHINERY.



IMPROVED SEMI-PORTABLE STEAM ENGINE, ON

IMPROVED SEMI-PORTABLE STEAM ENGINE, ON MULTITUBULAR BOILER.

These Engines are constructed on precisely the same principles as the Portable Engines, but they are mounted on metal pedestals instead of travelling wheels.

They are admirably adapted for driving Sawing Machinery, pumping, &c., and for Saw Mills, Warehouses, Breweries, Collieries, Manufactories, and other places where stationary fixed engines cannot conveniently be applied.

They are compact and easily set to work, no expensive foundations being required; the fixing under the fire-box forming an ash pan, and the one under the smoke-box constituting a feed water cistern.

The chimneys are made 9 feet long, and can be made longer if required at an extra cost.

PRICES.

Single Cylinder Engines.

2½-horse power	.....	cylinder	5¼	in.	diameter	.....
3	,, ...	,,	6¼	,,	,,	.....
4	,, ...	,,	6¾	,,	,,	.....
5	,, ...	,,	7⅜	,,	,,	.....
6	,, ...	,,	8½	,,	,,	.....
7	,, ...	,,	8⅞	,,	,,	.....
8	,, ...	,,	9½	,,	,,	.....
9	,, ...	,,	10⅛	,,	,,	.....
10	,, ...	,,	10½	,,	,,	.....
12	,, ...	,,	12	,,	,,	.....

Double Cylinder Engines.

8-horse power	.....	2 cylinders,	6¾	in.	diameter each	.....
9	,, ...	,,	7	,,	,,	.....
10	,, ...	,,	7⅜	,,	,,	.....
12	,, ...	,,	8½	,,	,,	.....
14	,, ...	,,	8⅞	,,	,,	.....
16	,, ...	,,	9½	,,	,,	.....
18	,, ...	,,	10	,,	,,	.....
20	,, ...	,,	10½	,,	,,	.....
25	,, ...	,,	12	,,	,,	.....
30	,, ...	,,	13	,,	,,	.....

PRICES QUOTED ON APPLICATION.

THOMAS ROBINSON & SON,

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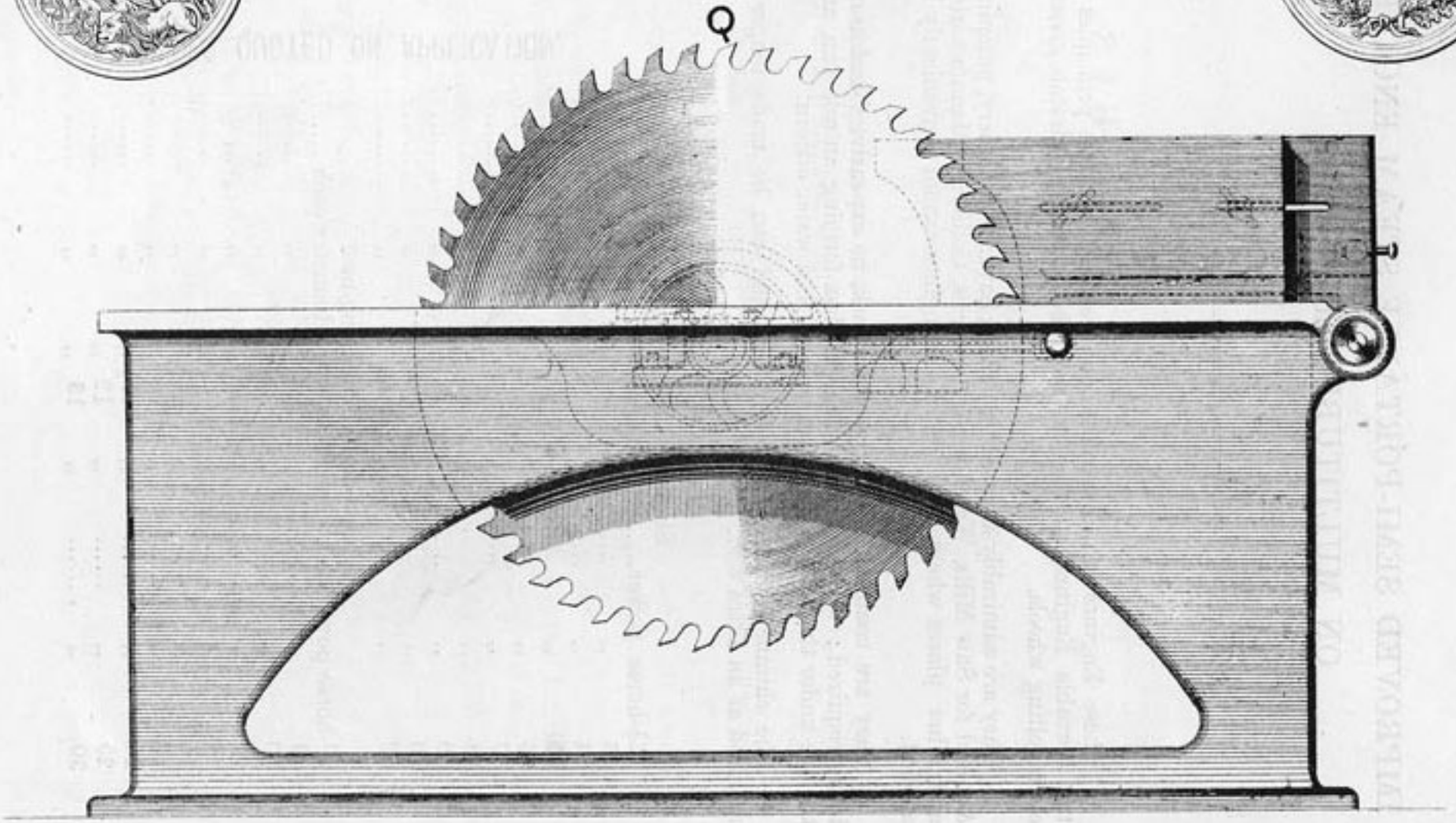
MAKERS OF ALL DESCRIPTIONS OF

WOOD - CUTTING MACHINERY.



PLAIN SAW BENCHES

PLAIN SAW BENCHES.

The framework of these Benches is in one casting, and has the top wholly and truly planed, with strong spindle and pulley, and improved fence.

They are made of the following sizes :—

No. 1, with top 8 feet long by 3 feet wide, takes in a saw of any size up to 48 inches diameter. Will cut 21 inches deep. Weight, 2 tons. Power required, 4-horse.

No. 2, with top 6 feet long by 3 feet wide, takes in a saw of any size up to 42 inches diameter. Will cut 18 inches deep. Weight, 1½ tons. Power required, 3-horse.

No. 3, with top 6 feet long by 2 feet 6 inches wide, takes in a saw of any size up to 36 inches diameter. Will cut 15 inches deep. Weight, 1 ton. Power required, 3-horse.

No. 4, with top 5 feet 6 inches long by 2 feet 9 inches wide, will take in a saw of any diameter up to 30 inches. Will cut 12 inches deep. Weight, 1 ton. Power required, 3-horse.

No. 5, with top 4 feet long by 2 feet wide, takes in a saw of any diameter up to 24 inches. Will cut 9 inches deep. Weight, 12 cwt. Power required, 2-horse.

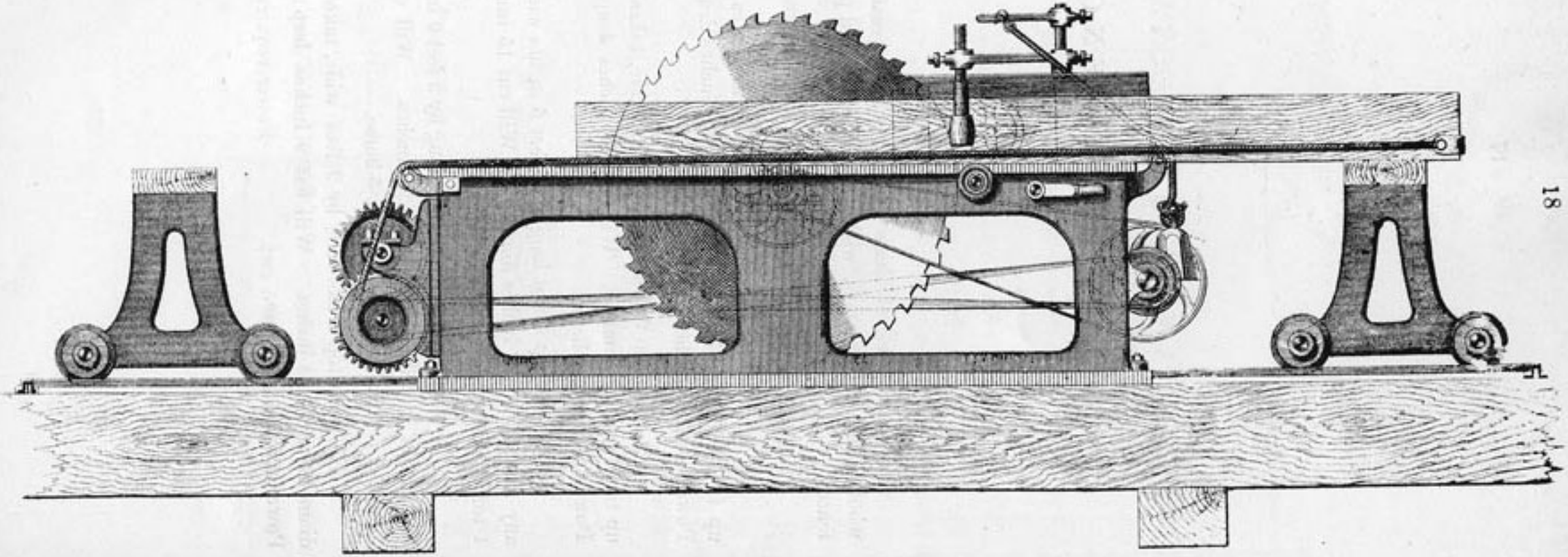
THOMAS ROBINSON & SON,

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD-CUTTING MACHINERY.

A



SAW BENCH FOR LOGS AND DEALS

A

SELF-ACTING SAW BENCH FOR LOGS AND DEALS.

This Bench is useful for the purpose of cutting logs, planks, or battens into boards or scantlings, at a speed of from 15 to 60 feet per minute; its top surface is wholly and truly planed, and fitted with a strong parallel fence, to which is attached lever and pressure roller, for the purpose of keeping the plank or batten to the fence whilst being sawn into boards, &c., together with an improved self-acting motion for drawing forward the timber whilst being sawn.

This Bench has just been greatly improved by making the whole framework in one casting, the result of which is they work much steadier.

The Saw spindle is very strong, and has the pulley fixed either between the bearings, or a fast and loose pulley outside, as required.

If required, this Bench may be fitted up with two small carriages, as shown, to run on rails, one at each end of the Bench, for the purpose of cutting trees or irregular timber. *(See Price List.)*

They are made of the following sizes :—

No. 1 size, 8 feet long and 3 feet wide, carrying a saw 48 inches diameter, cutting 21 inches deep.

No. 2 size, 6 feet long and 3 feet wide, carrying a saw 42 inches diameter, cutting 18 inches deep.

The Bench will cut at a speed of from 15 to 60 feet per minute.

No. 1, Weight,	2 tons 5 cwt.	Power required,	4-horse.
No. 2, „	2 tons.	„ „	3-horse.

THOMAS ROBINSON & SON,
ROCHDALE,
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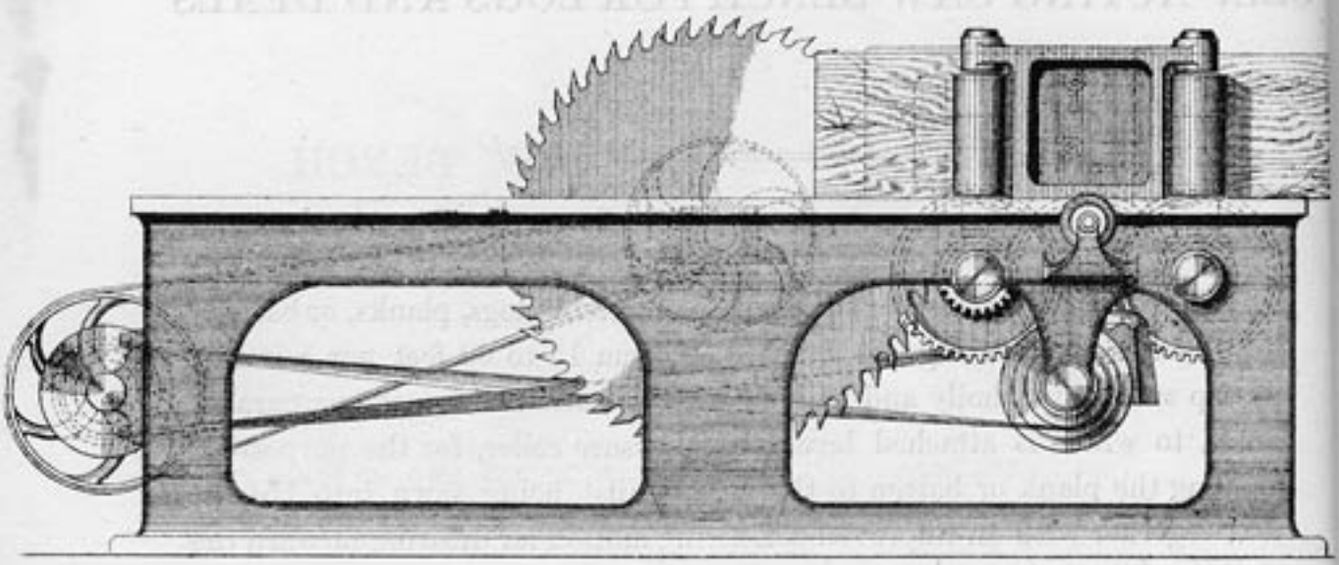
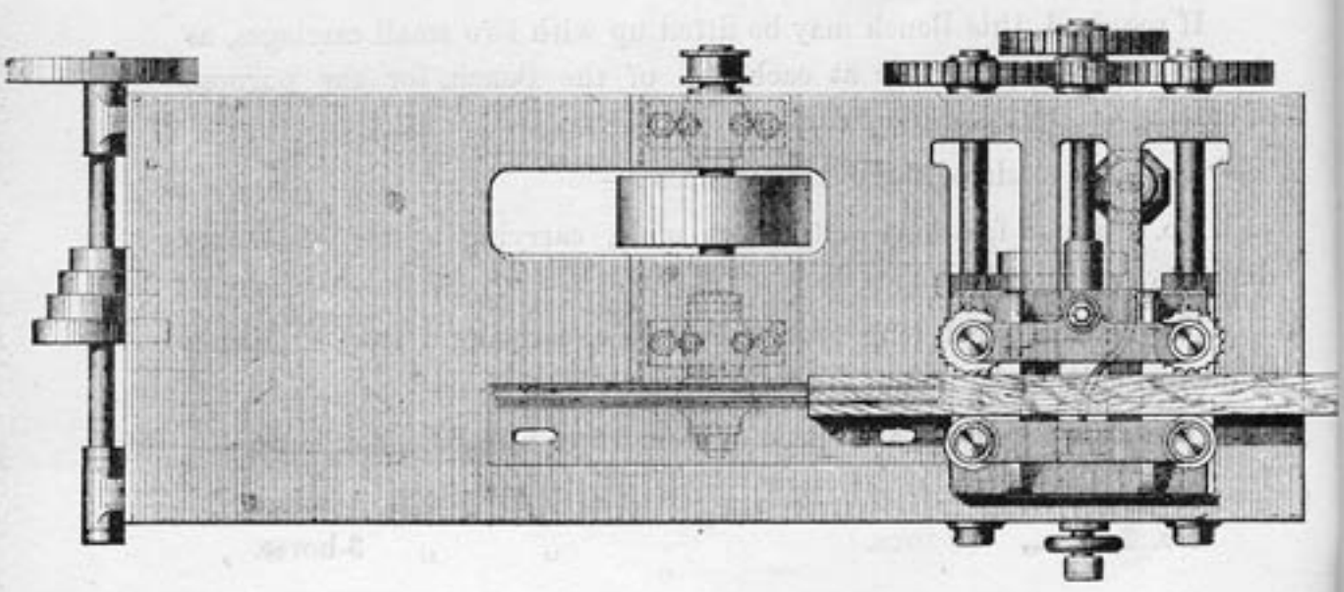
WOOD-CUTTING MACHINERY.



W W



ROLLER-FEEDING SAW BENCH.

WW

ROLLER-FEEDING SAW BENCH.

This Bench is specially made for sawing one, two, or three cuts in a deal or batten at one time, which operation is performed by mounting the requisite number of saws on the spindle, with washers of the thickness of the boards between, the deals or battens being fed to the saws by vertical rollers driven by spur wheels.

The Framework is all of one casting, and finished in every respect like the one as per Drawing A.

No. 1. The Bench is 8ft. long, 3ft. wide, and takes in saws 36in. diameter, cutting 15 inches deep.

No. 2. The Bench is 6ft. long, 3ft. wide, and takes in saws 30in. diameter, cutting 12 inches deep.

One of these Benches is capable of cutting 16,000 feet of sawing per day of ten hours.

No. 2. Weight, 2 tons. Power required, 9-horse.

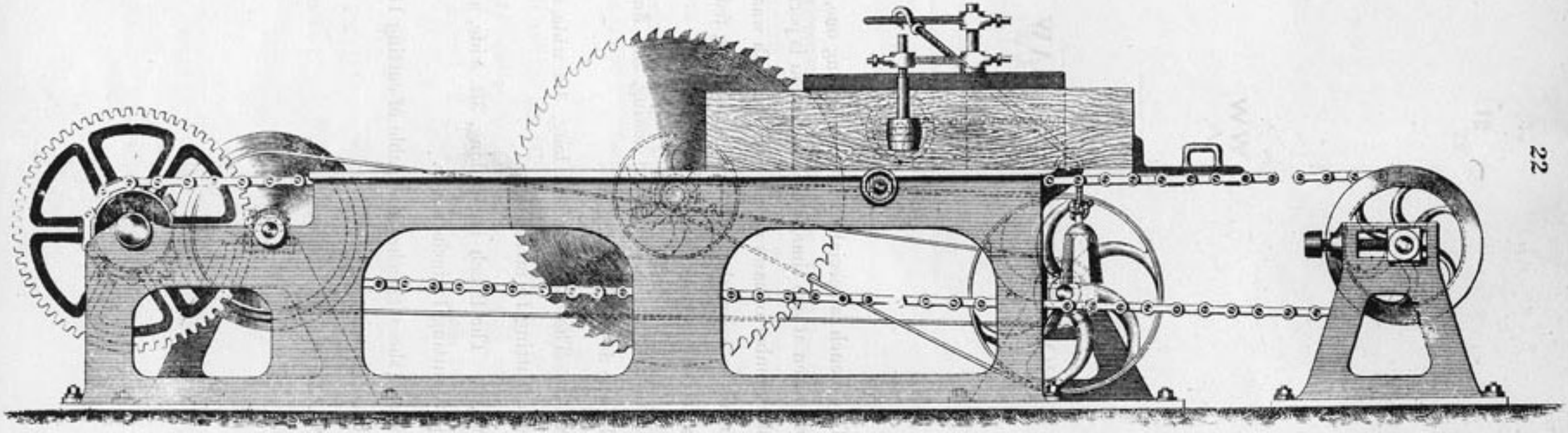
THOMAS ROBINSON & SON,

ROCHDALE.

MAKERS OF ALL DESCRIPTIONS OF

WOOD - CUTTING MACHINERY.

A A



SLEEPER-CUTTING SAW BENCH.

AA

SLEEPER-CUTTING SAW BENCH.

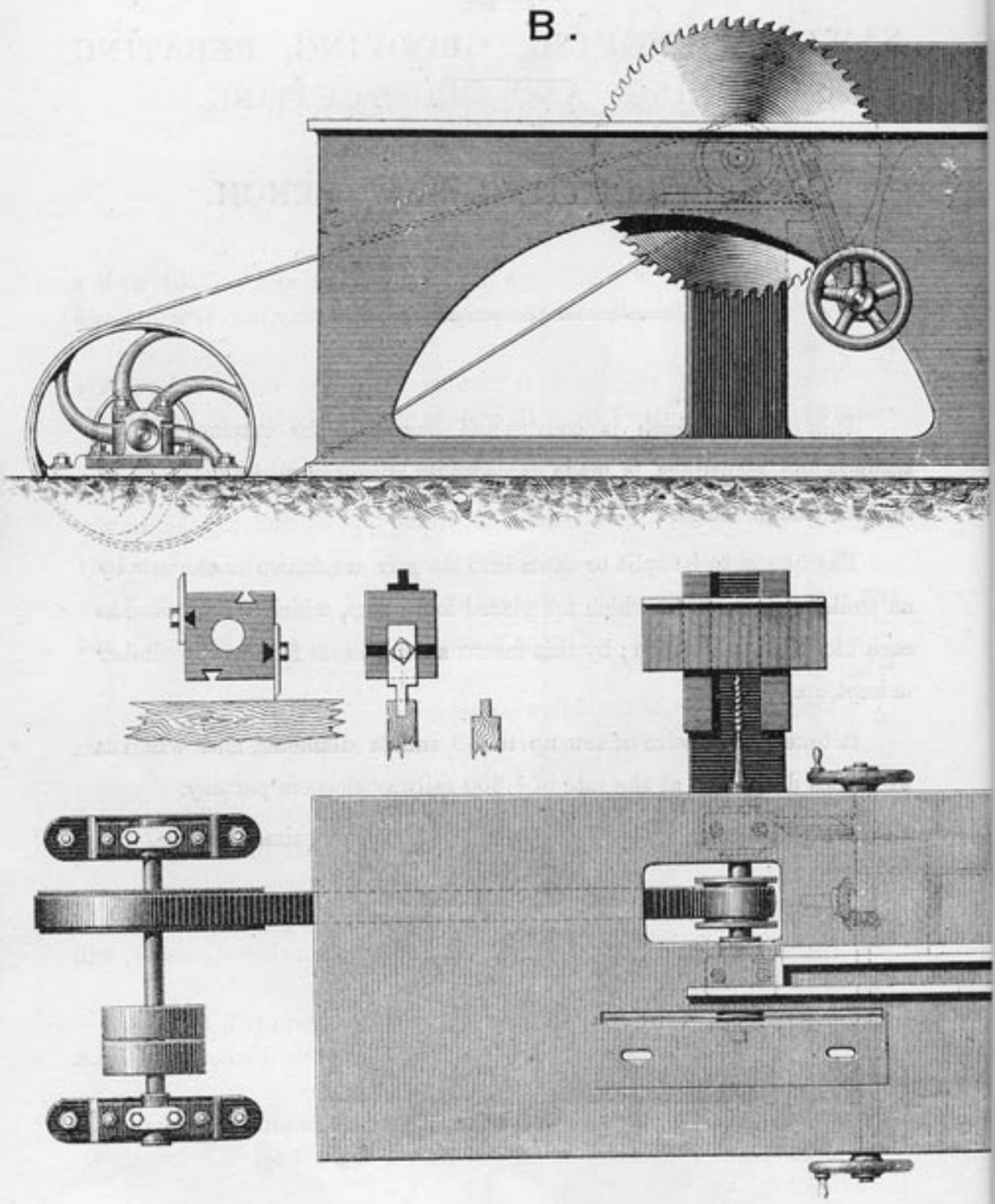
This Bench, which is constructed purposely for cutting railway sleepers and scantlings, is made exceedingly strong in all its parts, so as to bear rough usage.

The blocks to be split or sawn into sleepers are drawn to the saw by an endless chain, on to which are placed loose dogs, which are removed as each block is cut through; by this means a continuous feed of the timber is kept up.

It takes in any size of saw up to 48 inches diameter, and will cut 21 inches deep, and at the rate of 1,200 railway sleepers per day.

Weight, 3 tons. Power required, 6-horse.

B.



BENCH FOR SAWING, TONGUING, GROOVING, REBATING, BORING, AND CROSS-CUTTING.

B

BENCH

FOR

SAWING, TONGUING, GROOVING, REBATING, BORING, AND CROSS-CUTTING.

The Framework of this Bench is of one casting, and is fitted with a rising and falling spindle, for the purpose of adjusting, for rebating and grooving.

The saw end of spindle is so arranged that the saw can be easily removed, and a circular block, with cutters, put in its place, to be used for grooving and tonguing.

The other end of spindle is arranged to receive an auger, for the purpose of boring, having a stand, with sliding top, for carrying the timber.

The parallel fence is made to cut at any angle, and can be easily removed for the purpose of cross-cutting.

The Bench is capable of doing a great variety of work in joinery and cabinet work.

They are made of the following sizes :—

No. 1, 4ft. by 2ft., carrying a saw 20 inches diameter, will cut 7 inches deep.

Weight, 10 cwt. Power required, 2-horse.

No. 2, 5ft. by 2ft. 6in., carrying a saw 24 inches diameter, will cut 9 inches deep.

Weight, 15 cwt. Power required, 2-horse.

No. 3, 5ft. 6in. by 2ft. 9in., carrying a saw 30 inches diameter, will cut 12 inches deep.

Weight, 1 ton. Power required, 3-horse.

No. 4, 6ft. by 2ft. 6in., carrying a saw 36 inches diameter, will cut 15 inches deep.

Weight, 1 ton 5 cwt. Power required, 3-horse.

Two speeds on the saw spindle of Nos. 3 and 4 sizes.

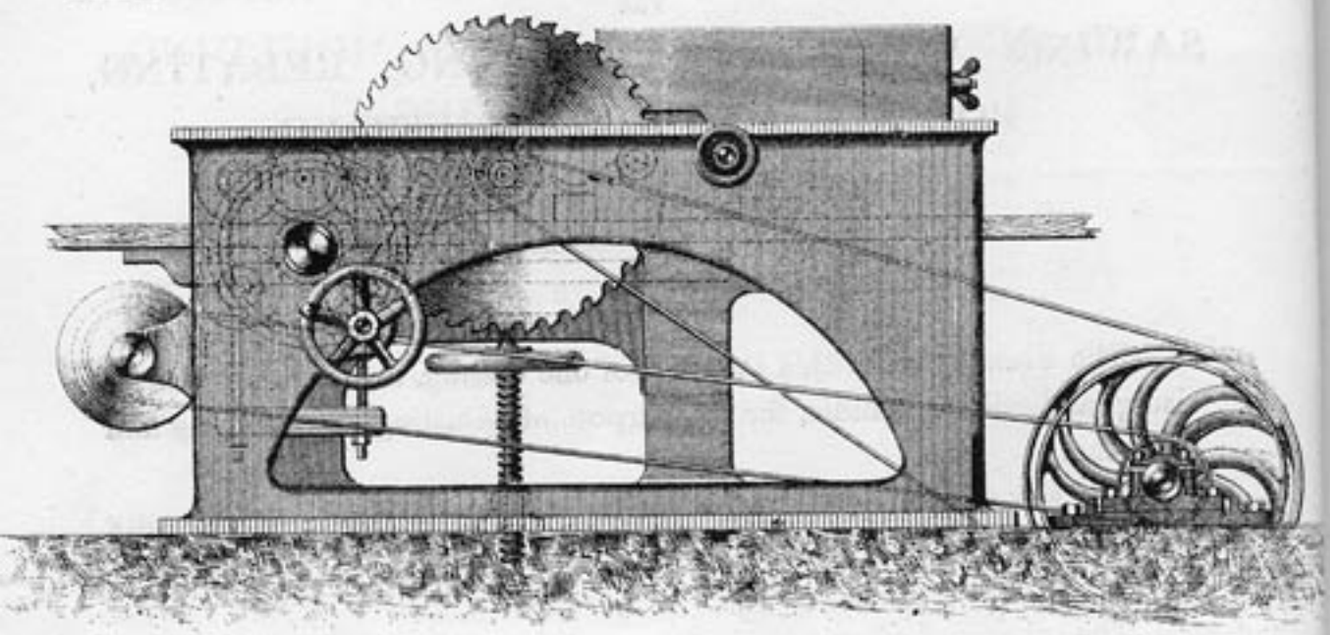
THOMAS ROBINSON & SON,

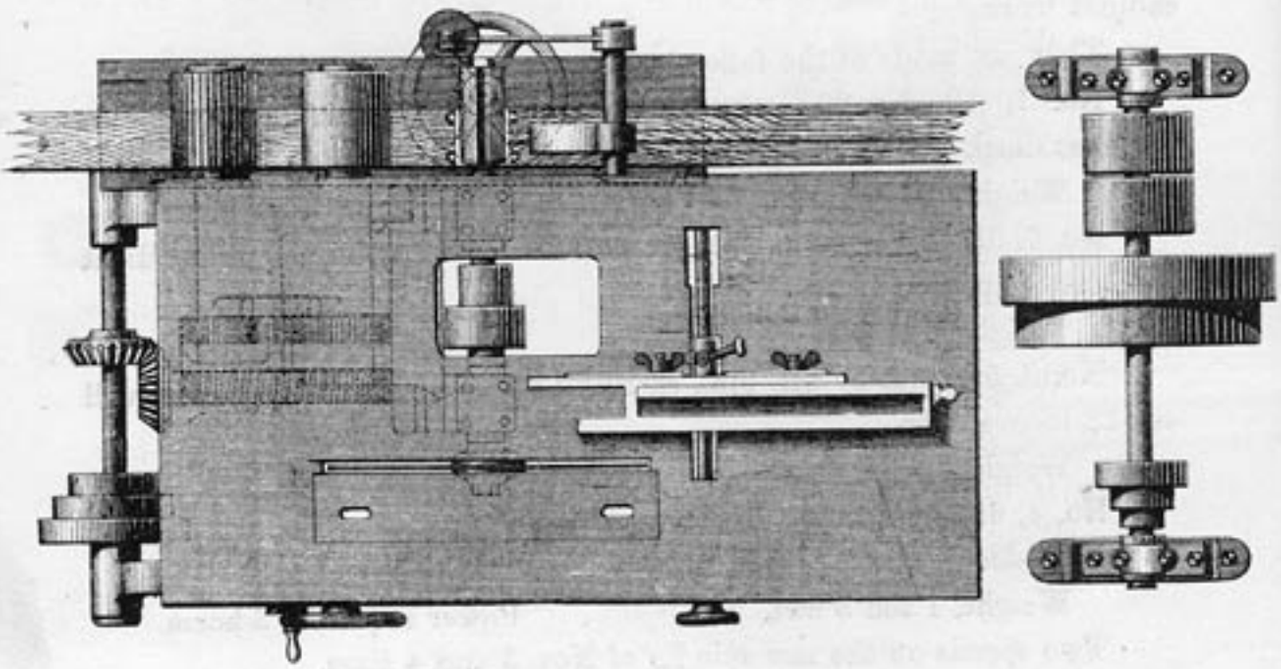
ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD-CUTTING MACHINERY.

JJJ





GENERAL JOINER, FOR SAWING, TONGUING AND GROOVING, PLANING AND MOULDING, AND CROSS-CUTTING.

JJJ

GENERAL JOINER, FOR SAWING, TONGUING AND GROOVING, PLANING AND MOULDING, AND CROSS-CUTTING.

This Machine consists of a strong cast-iron Saw Bench, with planed top, one end of the spindle, as shown, being fitted with a cutter block, on which are placed plane irons or moulding irons, as required; the timber for moulding or planing being fed with calender rollers.

The saw end of the spindle is so arranged that the saw can be easily removed, and a cutter block, with cutters, put in its place for tonguing and grooving.

The parallel fence is made to cut at any angle, and can easily be removed for cross-cutting.

They are made of the following sizes :—

No. 1, 4 feet by 2 feet, carrying a saw 20 inches diameter, sawing 7 inches deep, will plane or mould any size up to 4in. by 2in.

Weight, 12 cwt. Power required, 2-horse.

No. 2, 5 feet by 2 feet 6 inches, carrying a saw 24 inches diameter, sawing 9 inches deep, will plane or mould any size up to 5in. by 2½in.

Weight, 15 cwt. Power required, 2-horse.

No. 3, 5 feet 6 inches by 2 feet 9 inches, carrying a saw 30 inches diameter, sawing 12 inches deep, will plane or mould any size up to 7in. by 3in.

Weight, 1 ton. Power required, 3-horse.

No. 4, 6 feet by 2 feet 6 inches, carrying a saw 36 inches diameter, sawing 15 inches deep, will plane or mould any size up to 9in. by 3in.

Weight, 1 ton 5 cwt. Power required, 3-horse.

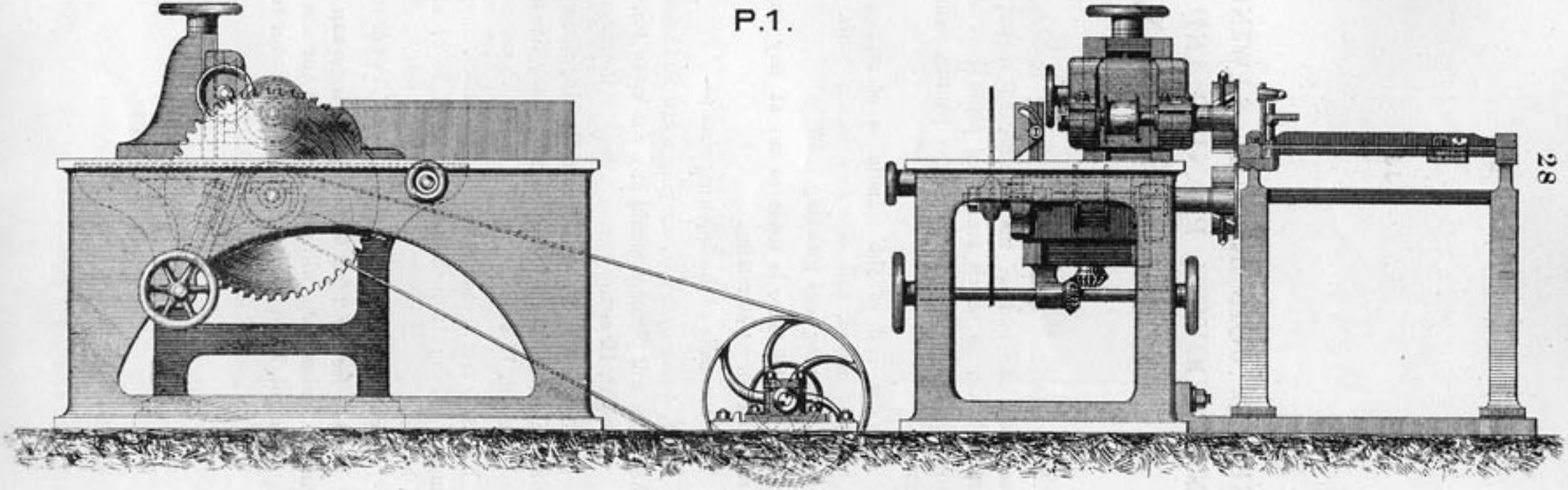
THOMAS ROBINSON & SON,

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD-CUTTING MACHINERY.

P.1.



28

BENCH FOR SAWING, TONGUING, GROOVING, REBATING,

AND CROSS-CUTTING.

P 1

BENCH FOR SAWING, TONGUING, GROOVING, REBATING, AND CROSS CUTTING.

Size of Bench, 5ft. 0in. × 2ft. 6in.

FITTED WITH COMPLETE APPARATUS FOR TENONING.

The framework of this Bench is of one casting, and is fitted with a rising and falling spindle, for the purpose of adjusting for rebating and grooving, &c., and is arranged to carry a saw of any size up to 24 inches diameter. The saw spindle is so arranged that the saw can easily be removed and replaced with a cutter block, with cutters for tonguing and grooving, &c.

The other side of the Bench is arranged with a complete apparatus for tenoning, as shown on the adjoining drawing. The Cutter heads are adjustable for various sizes. The sliding carriage is so arranged that the timber requires no setting.

Weight, 15 cwt. Power required, 2-horse.

THOMAS ROBINSON & SON,

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MAKERS OF ALL DESCRIPTIONS OF

WOOD-CUTTING MACHINERY.

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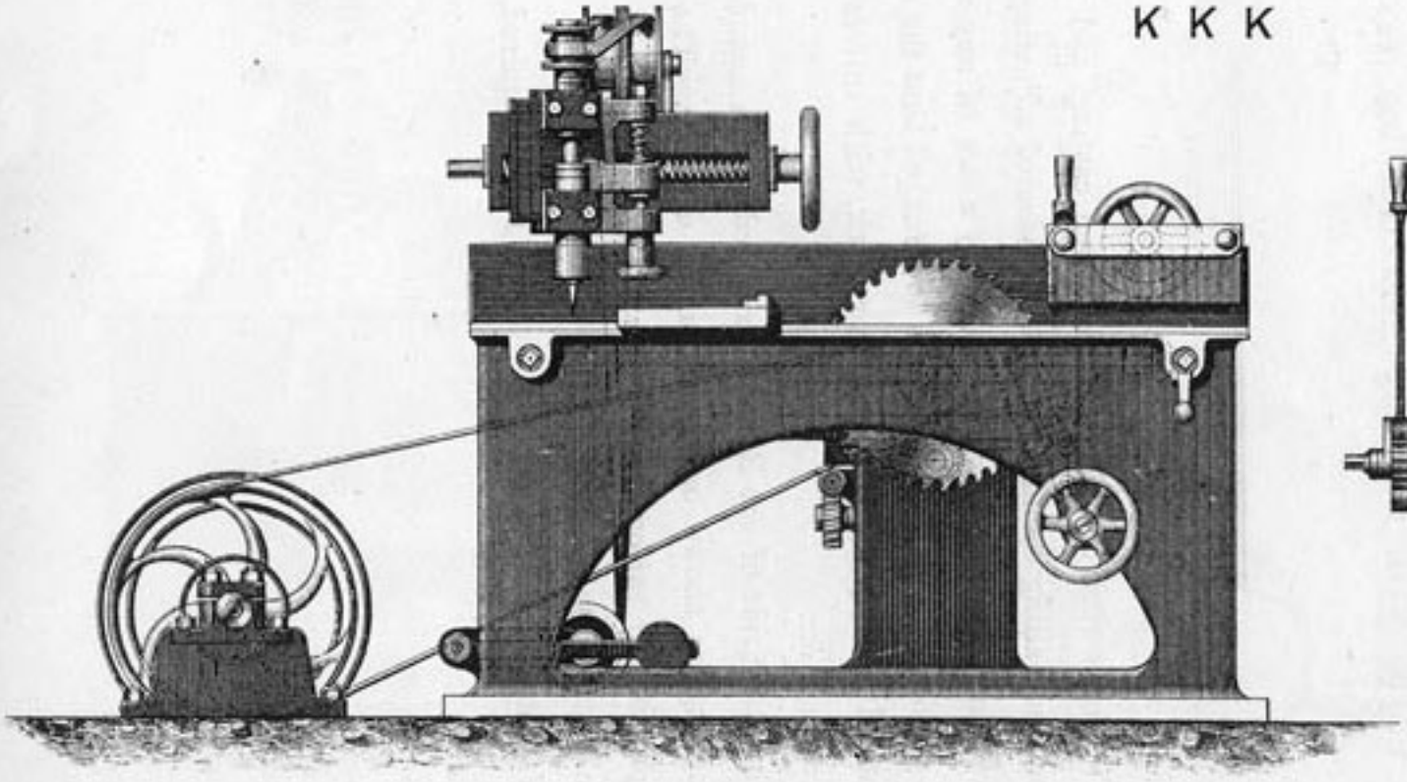
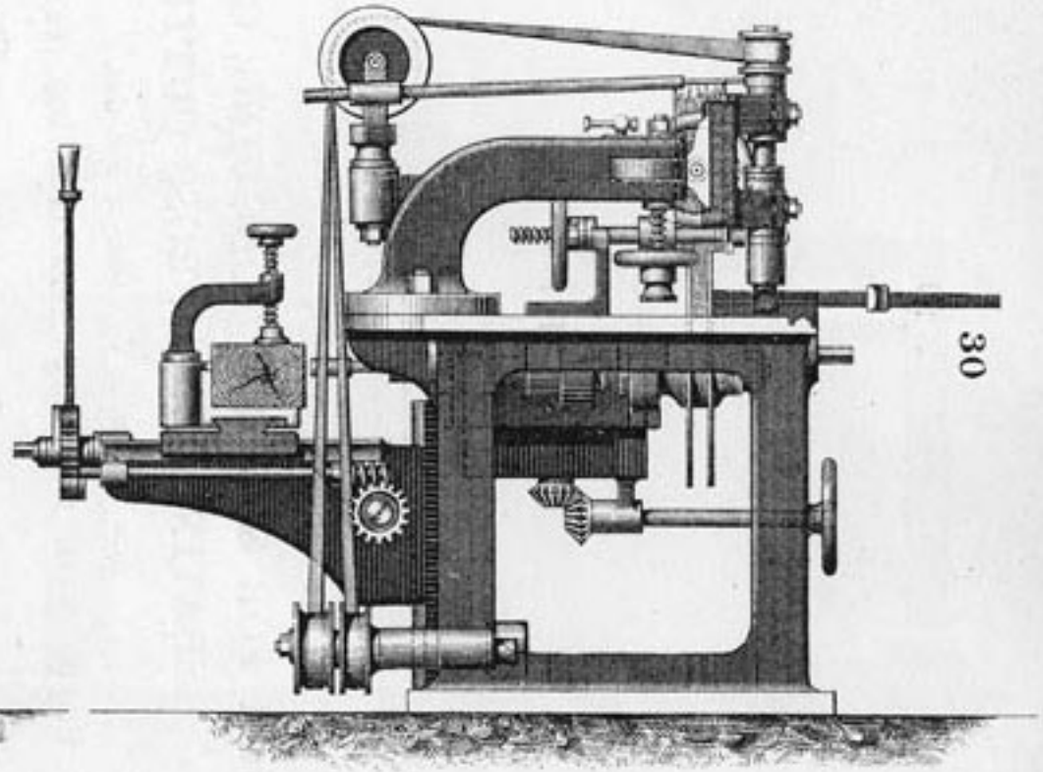




30

IMPROVED GENERAL JOINER.

KKK

IMPROVED GENERAL JOINER.

A machine has been lately brought out by several makers, under the name of the "General Joiner," professing to do most of the work required in a joiner's shop, but it is very incomplete in some of the more detailed requirements in wood-working. The machine represented in the accompanying drawing is now offered as a more complete tool, and is, in reality, capable of performing a great variety of joiner's work. It is well known in the joinery trade to be very desirable to cut out the housings in knotch boards for stairs, cut the trenches for shelving, and work mouldings in circles and irregular shapes. These are among some of the improvements introduced in the machine. The general purposes it can be used for are as follows:—Sawing, planing, and thicknessing; morticing, tenoning (single or double), cross-cutting, and squaring up; grooving, tonguing, rabetting, moulding, and beading; chamfering, wedge-cutting, boring, trenching, and cross-grooving; circular moulding, and a great variety of other operations. A very material improvement in the construction is the arrangement by which the movements of the cutter spindles and other parts are effected, without having to raise or lower the main bed of the machine, so that the whole is perfectly solid and steady whilst at work. The rising and lowering of the spindle is effected in such a way that the belt is always tight. The fence is adjustable, and arranged to cant to any angle. The tenoning slide will take in wood of any size up to eight inches by ten inches, and is fitted with a ready means of holding the stuff so as to be fixed or released immediately. The boring apparatus will take in augers of any size up to two inches diameter, and twelve inches deep. The machine is specially useful for the following trades, viz.:—Joiners, builders, carpenters, cabinet makers, shipbuilders, carriage and wagon builders, engineers, machinists, and any other trade working in wood.

Average power required, about 2 horse. Diameter of driving pulleys, 4 and 6 inches. Speed of driving pulleys, 1,400 to 2,000 revolutions per minute.

INSTRUCTIONS FOR WORKING.

SAWING.—The "Improved General Joiner" will saw a piece of wood up to seven inches thick. When used for sawing, the false fence is fixed on the long fence, the front of the false fence being about even with the front edge of the saw.

PLANING AND THICKNESSING.—With the addition of the planing disc, and set of plane irons, the "Improved General Joiner" will plane and thickness stuff up to six inches square. When used for this purpose the disc is fixed on the spindle in place of a saw, the cutting edges of the irons towards the fence. The fence is then adjusted to the distance required, and the stuff to be planed is to pass between it and the disc, the cutters reducing it to an uniform thickness and giving it a planed surface.

MORTISING.—By an apparatus frequently attached to the "Improved General Joiner" it can be used to great advantage for making Mortices from $\frac{1}{8}$ inch to 1 inch wide, and of any required length in any kind of timber. The timber is cramped upon a planed cast-iron table, which has a lever motion for making it traverse in front of a revolving cutter, and is fitted with a stop for regulating the length of the mortice. A self-acting arrangement is added, by which the timber is fed up to the cutter at each stroke of the lever. The great advantage of this plan of mortising is that the tool completes the mortice without previous boring, and the core is removed by the action of the cutter.

TENONING.—When used for tenoning, fix two saws of the same diameter upon the spindle, with a collar the required thickness of the tenon between them, and raise the spindle until the saws appear only the required length of the tenon above it. Then fix the wood to be operated upon in the tenoning slide, as shown on the machine in the engraving, and pass the slide along the top of the long fence. The wood being thus passed over the two saws, the two cheeks or flat sides of the tenon are cut simultaneously. For cutting the shoulders of the tenons put in a small saw and remove the tenoning slide from off the long fence, place the cross-cutting plate upon the table, the V on the under side of the plate working in the corresponding groove in the table; lay the piece of wood to be tenoned upon the sliding plate, keeping the edge of it against the fence on the slide plate, and raise or lower the spindle until the saw is just enough above it to meet the former cuts, then pass the piece over the saw, and thus finish one side of the tenon; turn the wood over and repeat the operation, when the tenon will be completed.

SQUARING UP.—Place the cross-cutting slide plate upon the table as when used for cutting the shoulders of tenons, and lay the piece of wood to be squared upon it, taking care to keep one edge held against the fence on the slide plate, and move the plate past the saw. One side being thus got perfectly true, the others can be worked true by it.

GROOVING.—Put the grooving saw upon the saw spindle, adjust the fence to the required distance from the saw, and pass the stuff to be operated upon over it, taking care to press it well down to the table, and also to keep it close to the fence.

TONGUING.—Fix upon the cutter block four tonguing irons, two being right-handed and two left-handed, and so arrange them as that, when revolving, there is a space left between them the width of the thickness of the tongue required; then pass the piece to be acted upon over the cutters, having first adjusted the fence so as to guide it in the required position.

RABETTING.—This operation differs from that of tonguing, last described, only in having the cutters so placed on the block as to recess one side only.

MOULDING.—For cutting mouldings the machine is arranged in precisely the same manner as for tonguing and rabetting, except that the cutters on the block are different, these being of the reverse form of the moulding to be struck. The bracket is screwed to the face of the long fence, and has a piece of wood screwed to its under side, to assist in holding down and guiding the moulding after leaving the cutters.

CHAMFERING.—Fix four plain cutters, one on each side of the block, taking care that they are so fixed as to follow one another exactly, and set the false fence at an angle of 45 degrees; then pass the piece to be chamfered over the cutters, keeping the timber firmly held to the bevil fence.

BORING.—This operation is so simple as not to require any explanation.

CUTTING HOUSINGS IN KNOTCH BOARDS OF STAIRS, AND TRENCHING.—Lay the boards on the Bench top, with one edge up to the fence; turn the arm carrying the cutter to the proper angle, and traverse the cutter along the proper distance by the wheel and screw shown. For Trenching, place the board on the Bench top at such an angle that the line of the cutter will traverse at right angles to the board.

CIRCULAR MOULDINGS, IN CIRCLES OR OTHER SHAPES.—Fix a cutter of right form in the traversing tool above described, and let the tool-holder remain stationary, and, as the cutter revolves, pass the circles and irregular-shaped timber round it.

Beside the above operations, the "Improved General Joiner" is capable of being put to a great variety of others, such as cutting sash bars by passing the piece twice over the same cutters and doing one side at a time; squaring up scantlings, sawing octagon forms, mitering. and a great variety of bevil work, &c., &c.

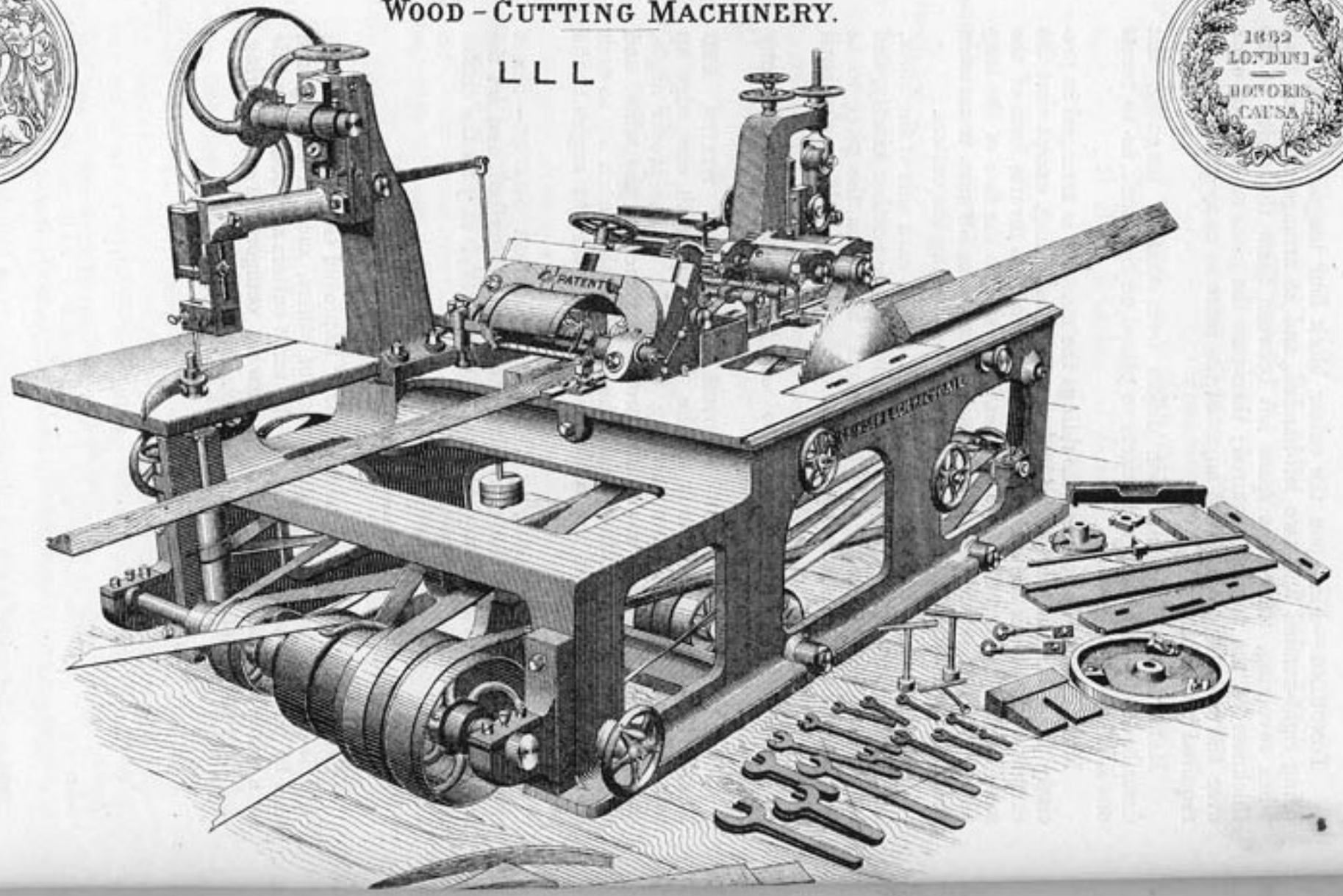
THOMAS ROBINSON & SON,

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD - CUTTING MACHINERY.

LLL



LLL

GENERAL JOINER.

The General Joiner, as shown in the drawing, contains improvements which have never yet been introduced in the machine of any other makers; the principal of which are that few changes are required in doing different kinds of work.

In the first place the circular saw can be used for cutting the timber into such scantlings as may be required. After this has been done the saw can be replaced by a circular cutter disc for squaring and planing up the timber, and whilst a workman is performing this operation a second one can be engaged on that portion of the machine for moulding, and can be working mouldings, skirtings, and sash bars of any size up to three inches thick by seven inches wide.

A third man can also be engaged at the same time working the tenoning portion of the machine, cutting tenons for either doors or sashes, and when he has done sufficient of this he can insert a boring tool into the tenoning portion of the machine, and do any boring that may be required.

A fourth man can also be working the band sawing part of the machine, cutting out curves of such forms as may be required, and after removing the saw from the pulleys and using what is attached to the band saw table, viz., a circular moulding apparatus for moulding circular heads of sashes, rails, or anything of an irregular shape.

All these parts are entirely independent of each other, and can be stopped and started when required. This feature is a special novelty in the machine, and entirely obviates the objection that has been generally entertained against the General Joiner, in the loss of time required in changing the various parts.

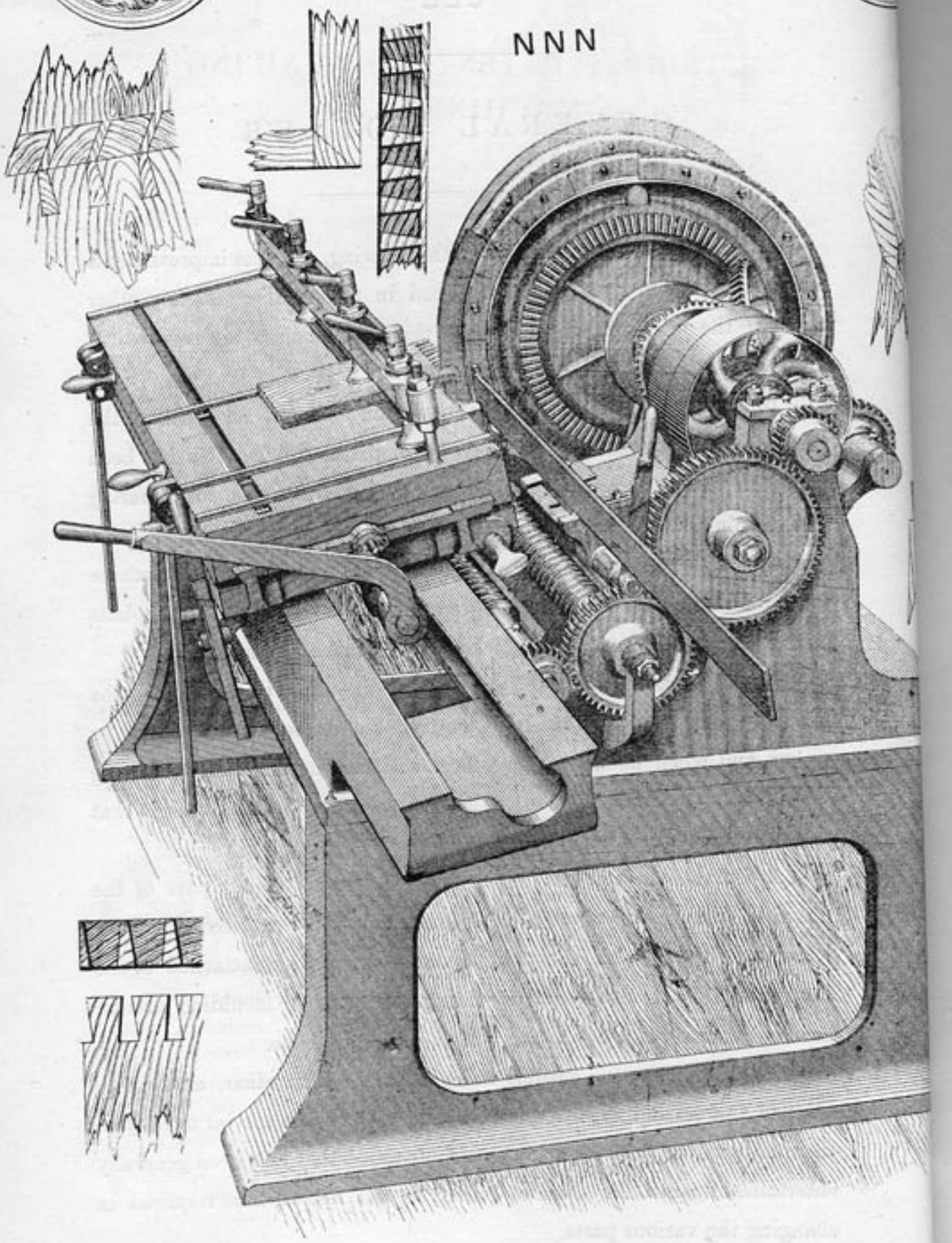
Weight, 6 tons. Power, 4-horse.

THOMAS ROBINSON & SON,

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD - CUTTING MACHINERY.



ARMSTRONG'S PATENT DOVETAILING MACHINE.

NNN

ARMSTRONG'S PATENT DOVETAILING MACHINE.

Among the many arrangements for the saving of labour by the introduction of machinery in the working of wood, nothing has presented so many difficulties as dovetailing. Numbers of machines have been introduced, but have failed, either from the roughness of the working, or through the great complexity of the machine employed, and the consequent great loss of any work done.

The American Dovetailing Machine here shown was exhibited working at the International Exhibition at Paris, and has been acknowledged by all the leading members of the mechanical body as the most perfect machine of its kind ever produced.

The want of such a machine has long been felt, particularly in box-making, the expense of dovetailing by hand being so costly that nearly all the packing boxes have hitherto been put together with nails. The production of this machine is so great that boxes and cases can now be dovetailed together cheaper than by nailing.

Each machine is arranged for cutting ordinary dovetails, dovetails on the angle, and blind dovetails.

It is quite easy to work. The discs being set to the proper angle, the board is placed on the table, being held fast by a cramp, and on motion being given to the machine it travels along the front of the saw, and the dovetail holes are cut clean at the rate of twenty feet of board end per minute.

For cutting the pins to fit in the dovetailed holes it only requires to give half a turn to the handle for partially reversing the disc, and the Machine is ready for that portion of the work. It is now in use by some of the largest packing case makers, cabinet makers, and builders in the country.

They are made of different sizes, as under, to suit various trades, but all to dovetail any thickness from $\frac{1}{4}$in. to $1\frac{1}{4}$in. thick.

Size to dovetail any width of board up to 15ins., including one set of saws, Weight, 1 ton; power required, $\frac{1}{4}$-horse.

Size to dovetail any width of board up to 24ins., including one set of saws, Weight, $1\frac{1}{2}$ tons; power required, $\frac{1}{4}$-horse.

Size to dovetail any width of board up to 36ins., including one set of saws, Weight, 2 tons; power required, $\frac{1}{2}$-horse.

P

RACK BENCH OR SAW BENCH, WITH SELF-ACTING TOP.

This Bench is for the purpose of cutting trees, logs, or irregular shaped timber into beams or scantling, and is more particularly useful for ship builders, railway carriage builders, or any business where few cuts are required in the log; it has a strong cast-iron bed, for carrying saw spindle, and adjustable fence, over which travel the two tables forming the Bench top; under the one at the front side of the saw is fixed an iron rack, worked by a pinion, and fitted with a quick return motion for running the table back after each cut. Parallel with the travelling top, and on the same level, are a series of rollers, for shifting about of timber before and after being sawn.

This Bench has been greatly improved by making the travelling top of cast iron, and planing it true on both sides, so that cuts can be made with as great accuracy as the ordinary hand Bench.

Speed of sawing, 10 to 40 feet per minute. They are made the following sizes :—

No. 1, with travelling top 40 feet long, and capable of working a saw 72 inches diameter, cutting 32 inches deep.

Weight, 10 tons. Power required, 10-horse.

No. 2, with travelling top 30 feet long, and capable of working with a saw 60 inches diameter, cutting 26 inches deep.

Weight, 7 tons. Power required, 7-horse.

No. 3, with travelling top 25 feet long, and capable of working with a saw 48 inches diameter, cutting 20 inches deep.

Weight, 4 tons. Power required, 4-horse.

No. 4, with travelling top 20 feet long, and capable of working with a saw 42 inches diameter, cutting 18 inches deep.

Weight, 3½ tons. Power required, 3-horse.

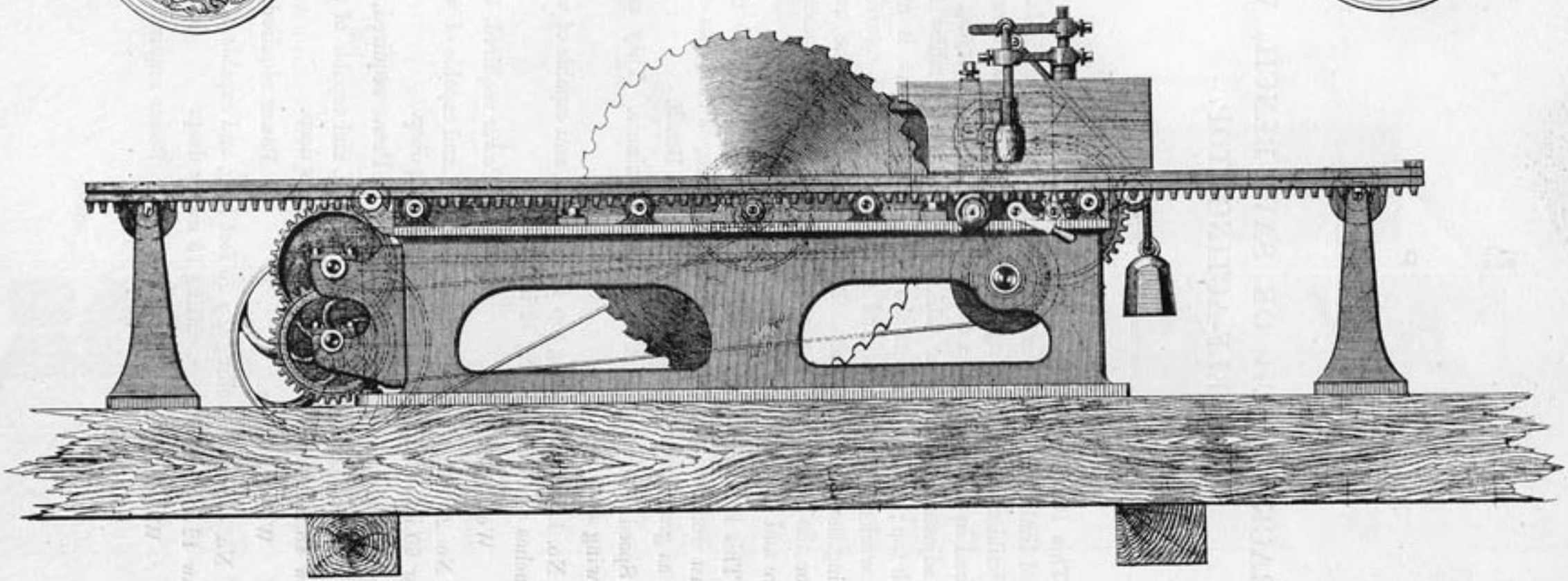
THOMAS ROBINSON & SON,

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD-CUTTING MACHINERY.

VVV



COMBINED RACK AND ORDINARY SAW BENCH.

VVV

COMBINED RACK AND ORDINARY SAW BENCH.

This Bench is for the purpose of performing all the operations usually done by the rack saw bench, and the ordinary saw bench.

The main bed, which is in one casting, carrying the saw bench, is similar to an ordinary self-acting saw bench, having all the necessary feed gear, but with the top arranged for a travelling table 25 feet long to pass over, as in the rack bench, which table is planed perfectly true, and used for opening logs and cutting large scantling, cutting any depth of log up to 21 inches.

When used as an ordinary self-feeding bench, the table is kept stationary, and the timber drawn forward with a drag rope, worked as shown.

Weight, 4 tons. Power required, 4-horse.

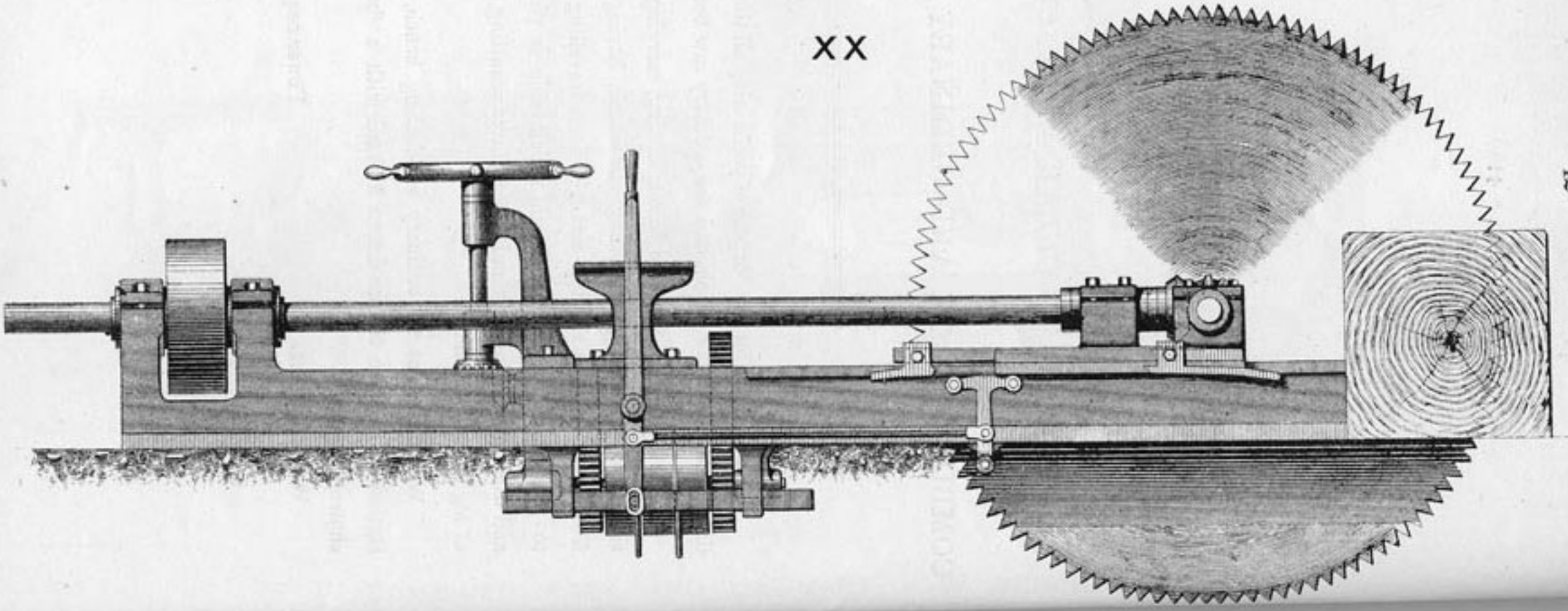
THOMAS ROBINSON & SON,

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD - CUTTING MACHINERY.

XX



XX

LARGE CIRCULAR CROSS-CUT SAW.

This Machine, which is chiefly used for cross-cutting large trees and logs, consists of a strong cast-iron bed, slightly raised above the level of the ground, at the front of which, as shown, is placed the tree or log to be cross-cut.

The Spindle and Saw are mounted on a carriage sliding on the above-named bed, the back and forward motion being given by means of a screw driven by a belt from the main shaft, or if required the driving belt can be dispensed with, and the Saw moved to and fro by a hand wheel.

The Saw is driven by a pair of mitre wheels, set in motion by a shaft, working at right angles to the Saw spindle.

The Machine will take in a saw 6ft. 6in. diameter, cutting through logs 35 inches deep.

Weight, 3 tons. Power required, 4-horse.

MMM

SELF-ACTING CROSS-CUT SAW BENCH.

The Bench consists of a strong cast-iron frame in one casting, with the saw spindle and pedestals mounted on a sliding carriage, which is traversed to and fro by means of a screw. It is fitted with stops, which can be set to travel and stop the saw at any required distance.

This cross-cut is much used in railway carriage and wagon shops, and cabinet works; in the latter with a special saw. Cabinet work can be cut as fine as if worked by a plane.

No. 1 Size, 8ft. by 3ft., to cut 12 inches thick by 16 inches wide.
Weight, 2 tons. Power required, 3-horse.

No. 2 Size, 6ft. by 2ft. 6in., to cut 3 inches thick by 12 inches wide.
Weight, 1 ton. Power required, 2-horse.

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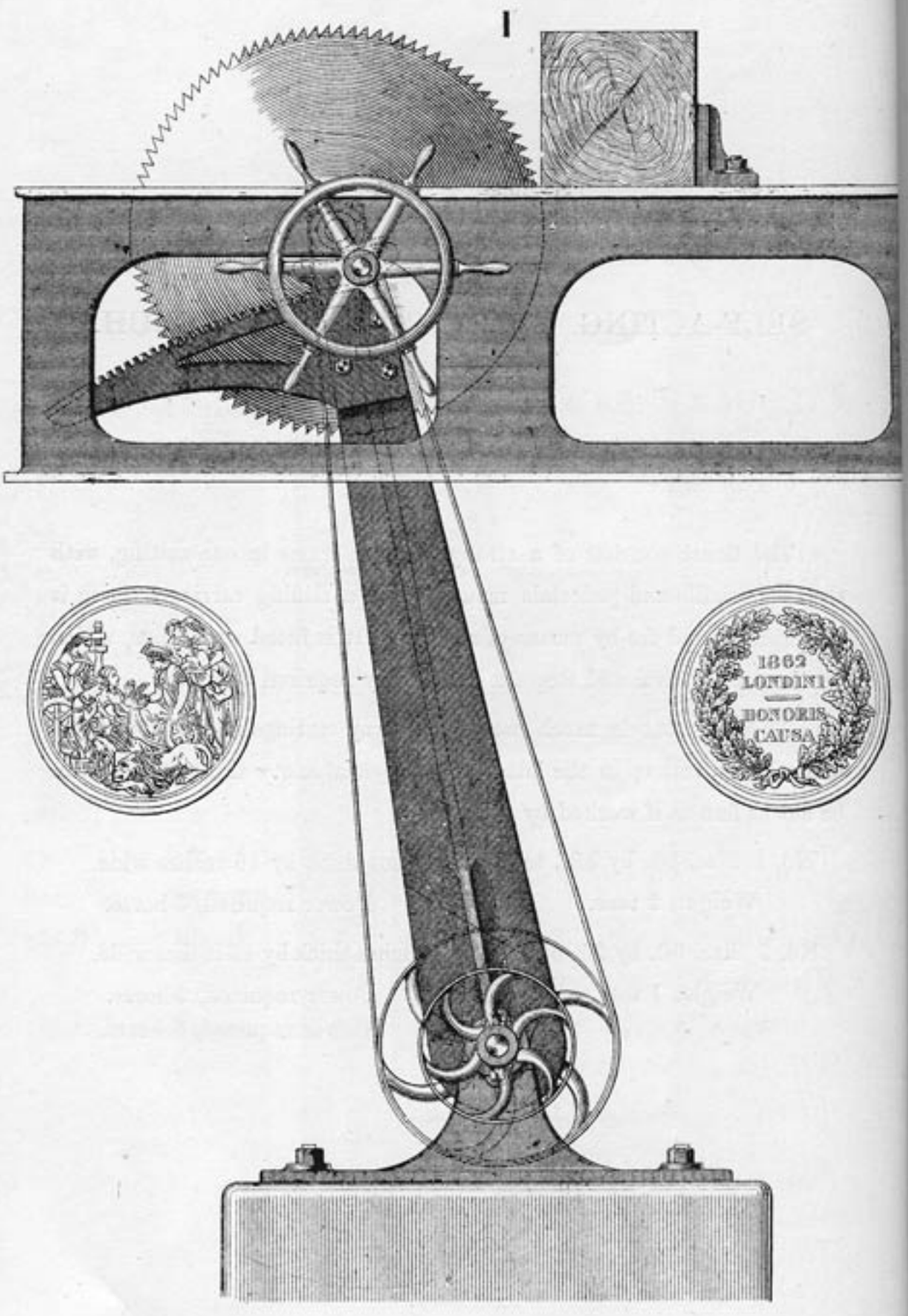
WOOD-CUTTING MACHINERY.



CIRCULAR SAW BENCH
FOR CROSS-CUTTING BY HORIZONTAL
MOVEMENT.

1

CIRCULAR SAW BENCH FOR CROSS-CUTTING BY HORIZONTAL MOVEMENT.

The Saw is fixed, as shown in drawing, at one end of a swing carriage, the other end of which rocks on shaft below the Bench, on which is also the countershaft for driving the saw. The end of the carriage carrying the Saw is moved to and fro for cross-cutting by means of rack and pinion. This Bench, when not required for cross-cutting, can be used for ordinary straight sawing, for which purpose the Saw is arranged to fix stationary, and parallel fence provided, at the extra price of £12. It will cross-cut any size up to 16 inches square.

Weight 3 tons. Power required, 5-horse.

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MAKERS OF ALL DESCRIPTIONS OF

WOOD-CUTTING MACHINERY.

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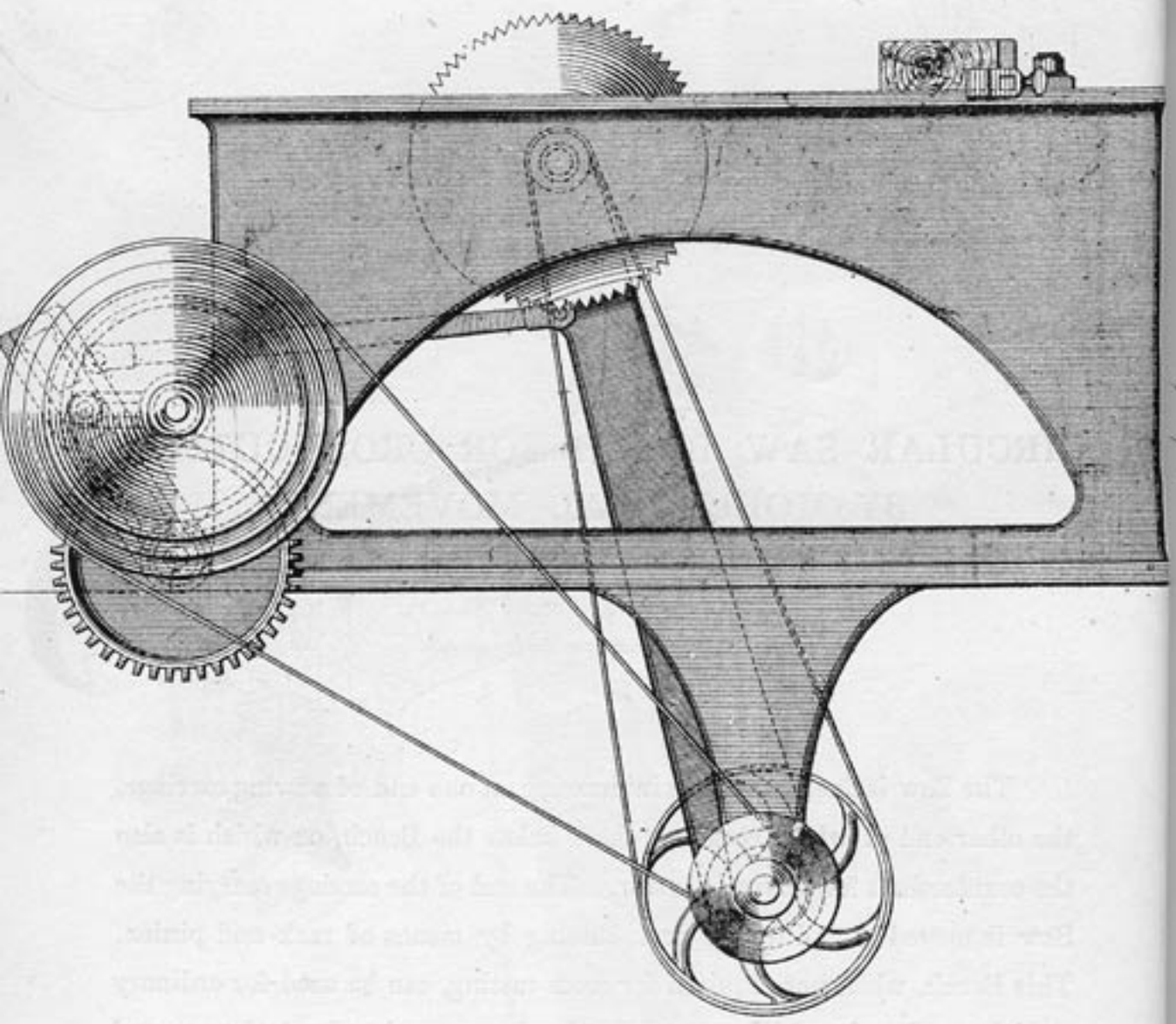


SELF-ACTING CROSS-CUT SAW BENCH.

The accompanying Drawing shows the movement of the Saw when cross-cutting to be self-acting, by means of a connecting rod worked by a crank, arranged for quick return motion.

The to-and-fro motion of Saw is arranged with three speeds, to change for different thicknesses of wood.

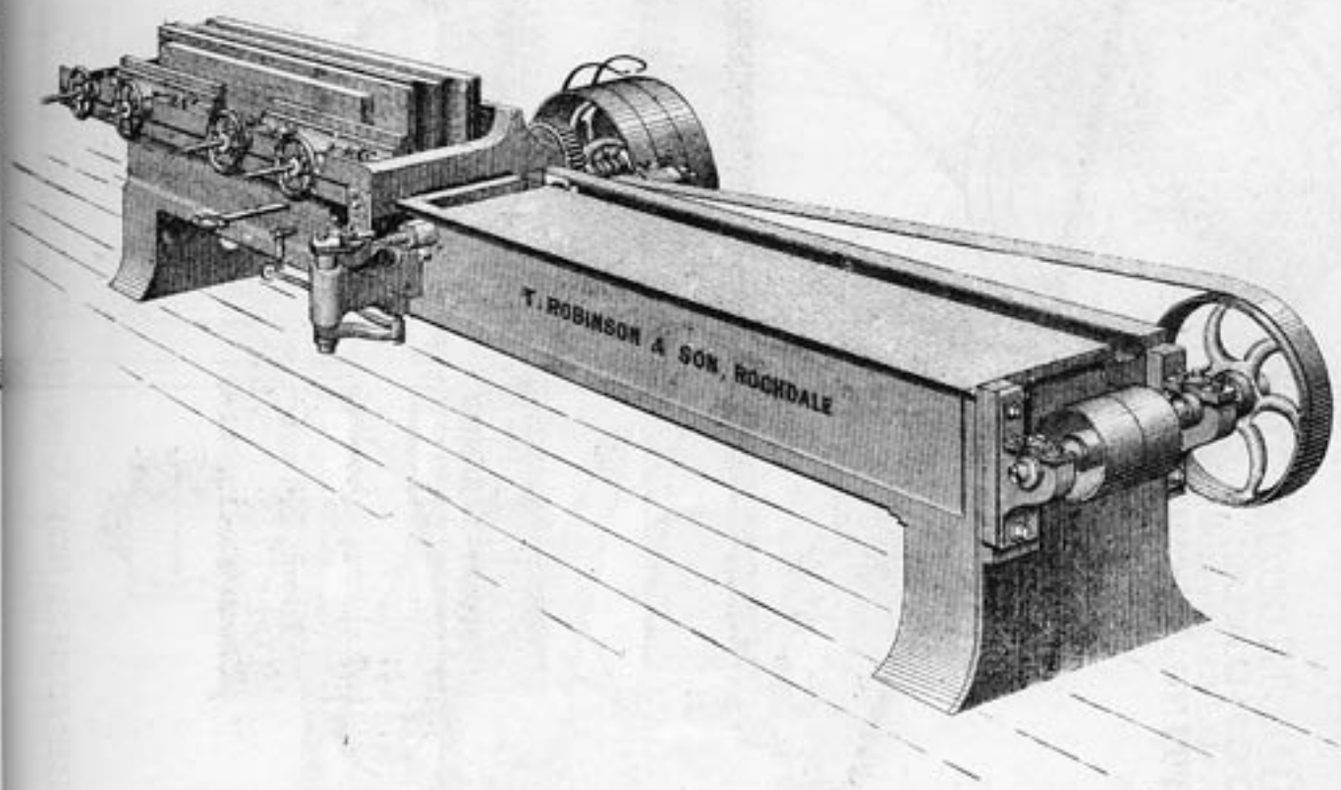
No. 1 will cut 3in. by 12in.

Weight, 1 ton 5 cwt. Power required, 1-horse.

No. 2 will cut 5in. by 16in.

Weight, 2 tons. Power required, 2-horse.

RRR



JOINTING MACHINE FOR PACKING-CASE MAKING

Boards used by packing-case makers being of many various widths, it is most convenient to joint only one edge at once. In the Machine here shown, a number of boards are placed in a carriage and screwed tight together, their edges touching the bed of the Machine, in which bed revolves a block at a high speed, fitted with cutters for jointing; the carriage containing the boards is traversed over the cutters, and the boards are edged at a great speed, and the boards afterwards turned over, and the same operation repeated; the jointing can be done by the carriage moving either way. Will take in seven feet long and twelve inches wide.

Weight, 2½ tons. Power required, 2-horse.

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WOOD-CUTTING MACHINERY.

U

CIRCULAR SAW BENCHES FOR CROSS-CUTTING BY VERTICAL MOTION

CIRCULAR SAW BENCHES FOR CROSS-CUTTING BY VERTICAL MOTION.

In this Machine, the swing carriage to which the Saw is attached is, as shown, in a horizontal position, having a balance weight at the tail end to keep up the Saw until required to be depressed for cross-cutting, which is done by pulling down the handle shown.

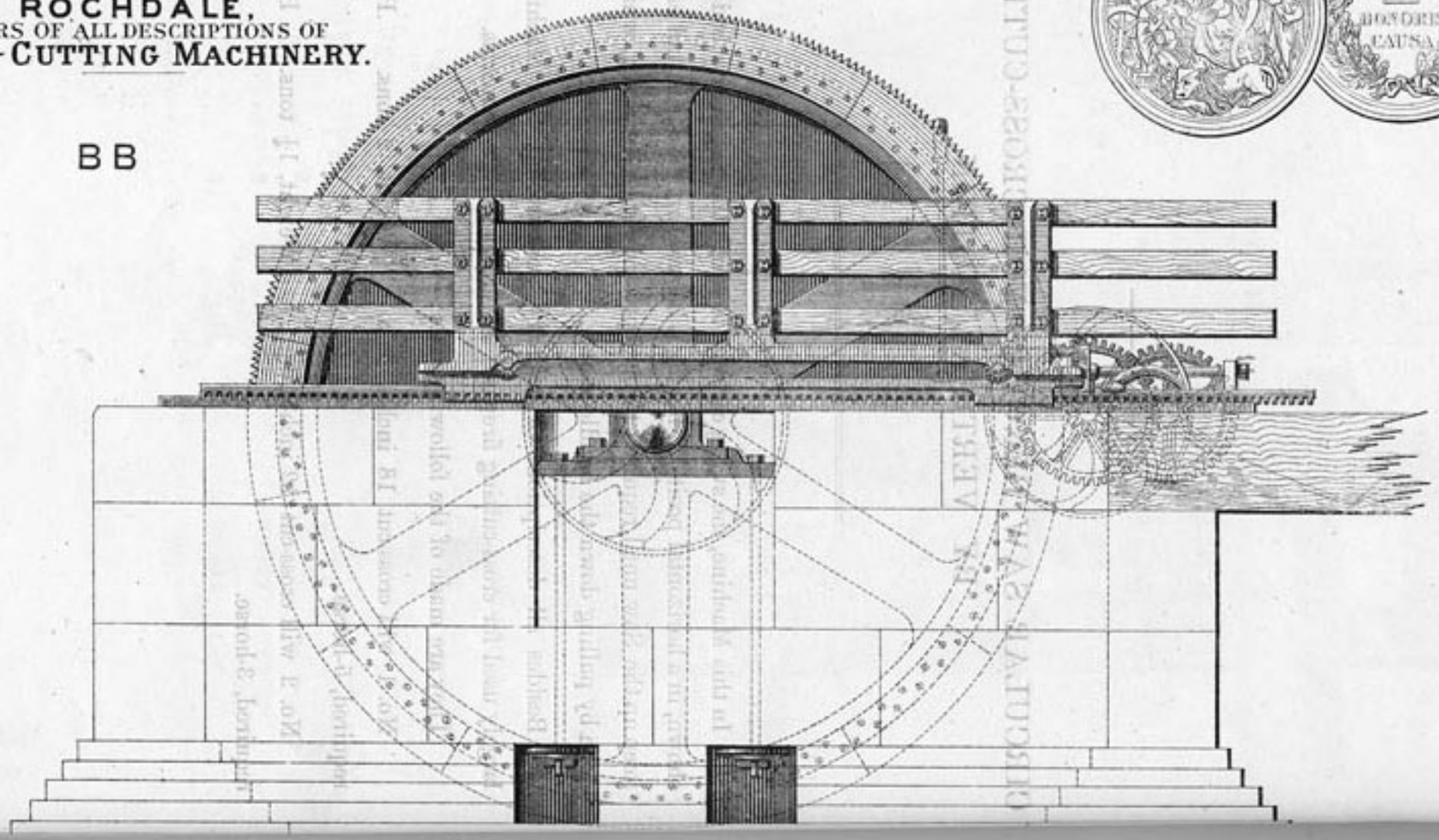
Besides all descriptions of ordinary cross-cutting, this Machine is largely used for cross-cutting firewood in various foreign countries.

They are made of the following sizes :—

No. 1 will cross-cut 18 inches deep. Weight, 2 tons. Power required, 5-horse.

No. 2 will cross-cut 12 inches deep. Weight, 1¼ tons. Power required, 3-horse.

BB



BB

VENEER SAWING MACHINE.

This Machine is for the purpose of cutting various kinds of hard and fancy woods into slices or veneers.

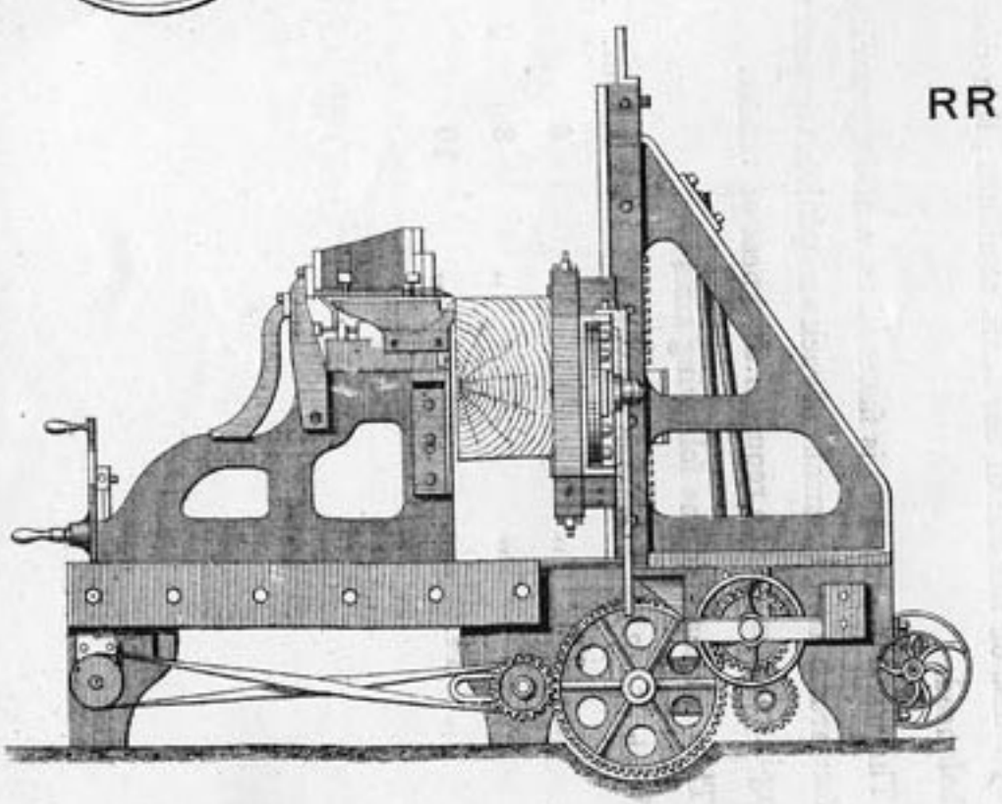
The Saws, which are extremely thin, are attached in segments to a cast-iron disc on the end of the shaft, as shown; this disc is truly turned and balanced.

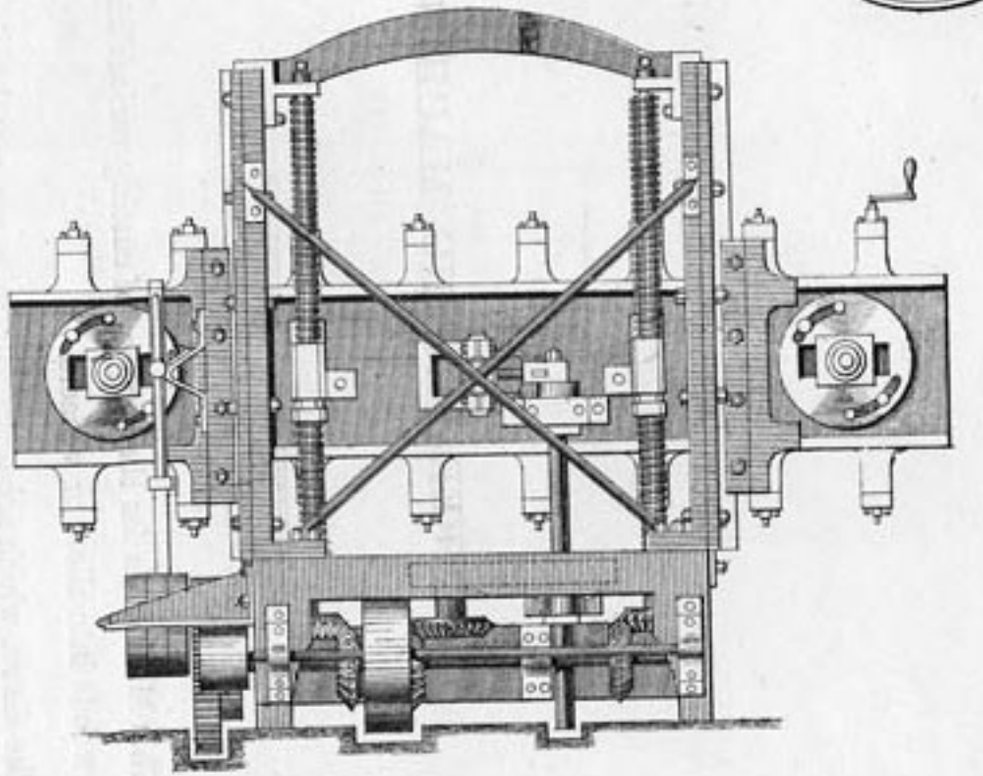
The wood to be sawn is fastened to a sliding carriage, having back and forward motion, by means of rack and pinion, together with self-acting setting-in motion for the required thickness of veneer.

They are made of the following sizes :—

With disc	8	feet	diameter.	Average weight,	4	tons.	Power, 4-horse.
,,	10	,,		,,	6	,,	6 ,,
,,	12	,,		,,	8	,,	7 ,,
,,	14	,,		,,	10	,,	8 ,,

RR





PATENT VENEER KNIFE MACHINE

RR

PATENT VENEER KNIFE MACHINE.

The Machine represented in the Drawing is the invention of Mr. L. R. Hawes, of the United States of America, and patented in this country.

It has been in successful working operation for two years, at one of the largest Veneer Mills in London.

It will cut veneers from mahogany, walnut, maple, oak, and almost any description of wood.

The production is at the rate of from 40 to 60 square feet per minute, and 32 veneers can be cut from one inch of wood, which is more than double the number that can be produced of the same thickness by sawing, because with the knife there is no waste of wood, it being merely divided.

All its working arrangements are exceedingly simple and accurate, and an intelligent joiner or cabinet maker will be able to work it with two weeks' teaching.

The knife which cuts the veneer is stationary, and the wood is fixed to a sliding frame, having an upward and downward motion, together with an oscillating movement longitudinally, which gives a cleanness to the cut.

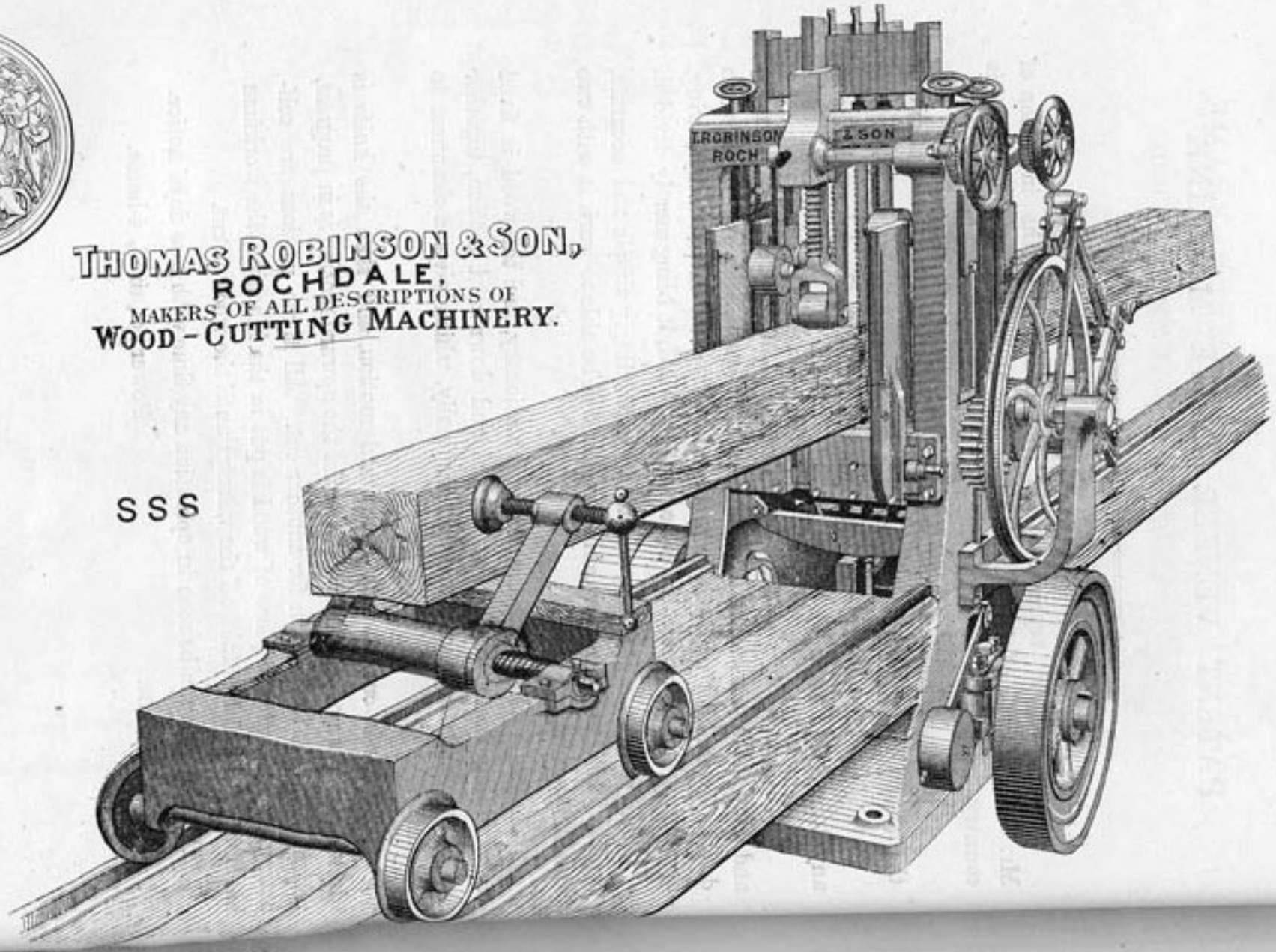
A veneer is cut at each downward motion, and then the knife is drawn clear away from the wood, whilst the upward motion is in progress, returning again to position for another cut. All these motions are self-acting, so that, after a piece of wood is put in the Machine, the workman has nothing to do but take off the veneers until the wood is cut.

The Machine can be seen in operation any time with two days' notice.

Weight, 10 tons. Power required, 4-horse.

THOMAS ROBINSON & SON,
ROCHDALE,
MAKERS OF ALL DESCRIPTIONS OF
WOOD-CUTTING MACHINERY.

SSS



SSS

PATENT IMPROVED TIMBER FRAME,

With Deal-Cutting Apparatus when required.

The Frame shown in the accompanying Drawing is intended to supply a want long felt in log sawing, viz., a handy frame at a moderate cost, and requiring a very slight foundation, strong logs of timber being all that is required. The smaller sizes of Frames have the standards and top and bottom plate all in one casting.

The main shaft, which has a bell-crank for driving, has a flywheel on each side (one of which serves as fast pulley), so that the frame is perfectly balanced.

The deal-cutting apparatus can be supplied or not, according to the purchaser's requirements. The mode of arranging the deal cutting is very much simpler than the ordinary way of attaching the apparatus to log frames.

The skeleton, shafts, holding down parts, and working parts are of the best hammered iron.

The Frames are coming rapidly into use, and give perfect satisfaction. They will carry eight saws to every foot of width of skeleton.

All arranged to cut 30 feet long.

SIZE.	WEIGHT.	POWER REQUIRED.
36in.	9 tons	8-horse.
30in.	7 „	7 „
24in.	6 „	5 „
20in.	5 „	4 „
16in.	4 „	3 „

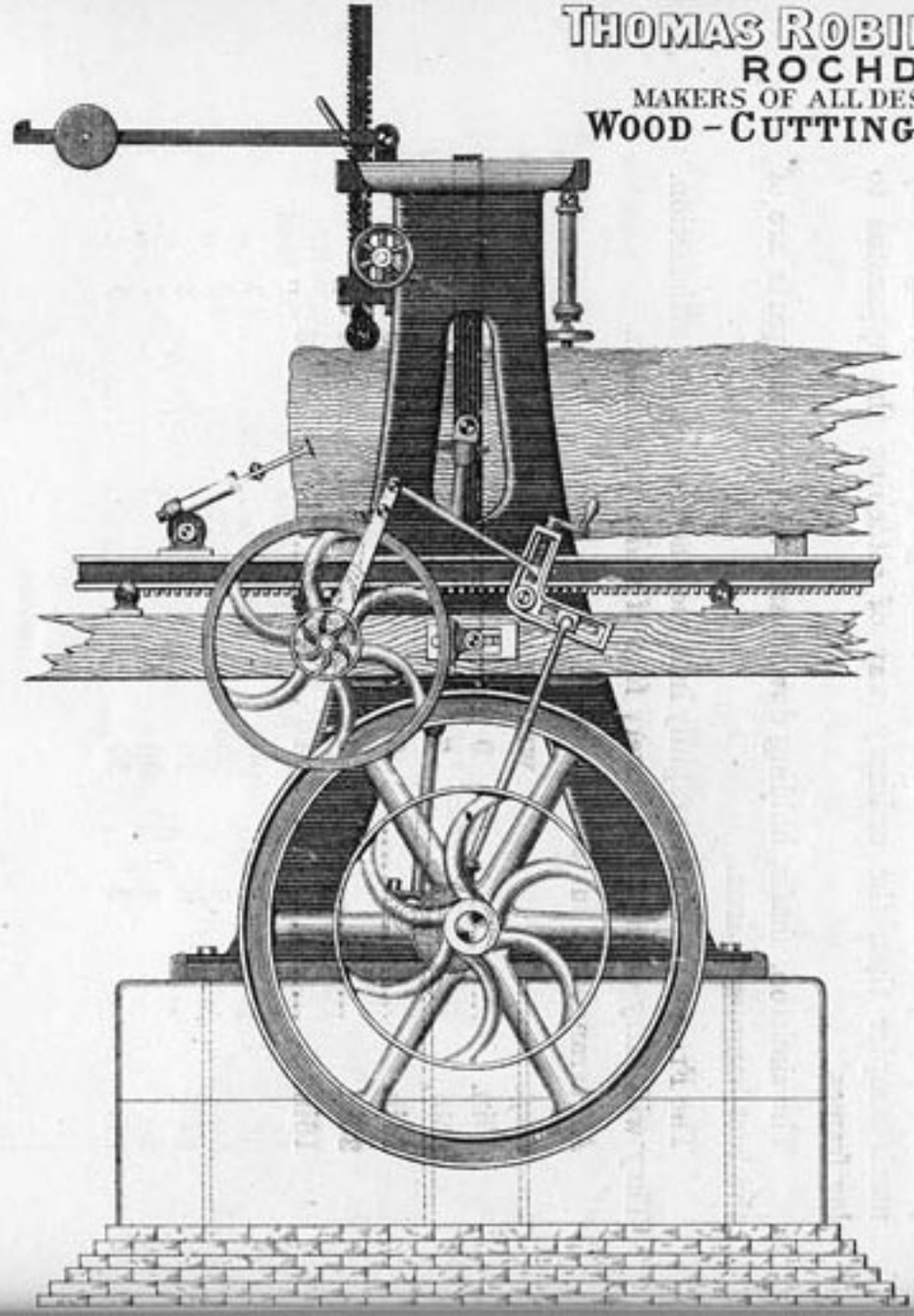
THOMAS ROBINSON & SON,

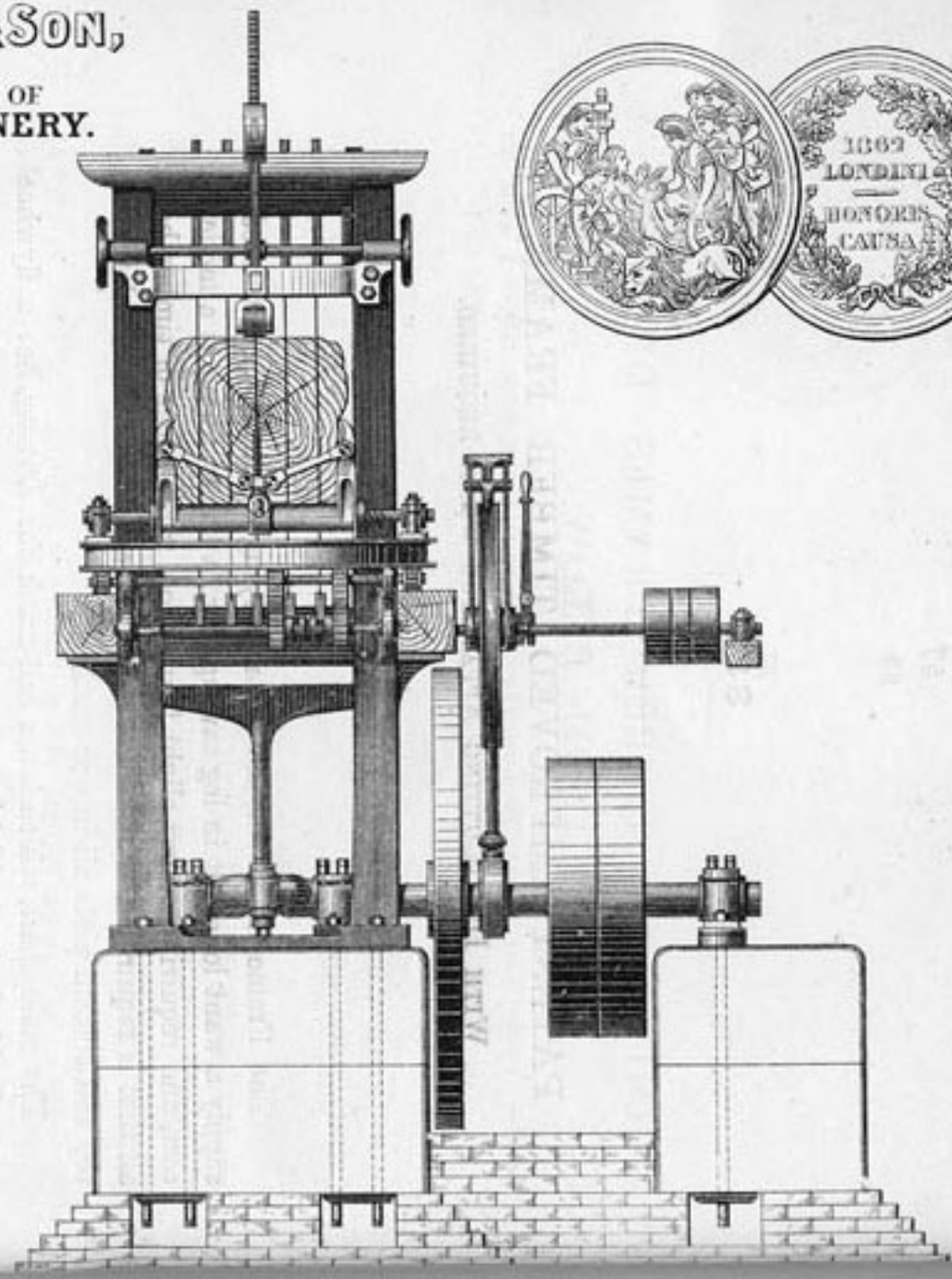
ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD - CUTTING MACHINERY.

F





F

IMPROVED TIMBER FRAMES DRIVEN FROM BELOW,

With the addition of Special Arrangement for Rising and Falling Rollers carrying the Log or Tree.

The Frame here represented is for the purpose of cutting logs or trees into boards, planks, or scantling.

The tree or log to be sawn is placed on a cast-iron rack carriage, worked by a pinion, motion to which is given by an improved feed wheel, the speed of which can be regulated whilst working. Adjustable clips, for holding the timber whilst being sawn, are attached to the carriage, having a lateral motion, for the purpose of following the irregularities of the logs.

An important arrangement for cutting scantlings has been recently patented, and is attached to these frames, by which means work of this description can be cut at double the speed it hitherto has been.

One of the greatest improvements effected in the log frames is the arrangement now introduced for rising and falling the rollers carrying the log or tree whilst being sawn; each roller can be raised or lowered whilst the frame is working, so that the log can always be kept resting on the rollers, and so entirely preventing the liability to break down when cutting logs which are not perfectly straight.

Considerable strength is given to the Frame, and ease in working, by the connecting-rod being so arranged as to take hold of the working frame about the centre of each side instead of at the bottom, as heretofore, by which also less depth of foundation is required.

The timber carriage is fitted with quick motion, for running backward or forward.

The Frames are made sufficiently strong to work with any number of saws up to one to the inch.

A very important improvement is now introduced into these frames by driving them with double or bell crank, which causes them to work much steadier.

All the parts requiring special strength, such as working frame, shafts, connecting-rods, cross-heads, crank, and timber clips, are made of the best wrought iron, the bearings of best brass, and remaining parts of best cast iron.

AVERAGE POWER REQUIRED FOR						WEIGHT.
42 inch	frame,	10-horse,	30	feet	rack	20 tons.
36	,,	8 ,,	30	,,	.....	12 ,,
30	,,	7 ,,	30	,,	.....	10 ,,
24	,,	5 ,,	30	,,	.....	8 ,,
20	,,	4 ,,	30	,,	.....	7 ,,
16	,,	3 ,,	30	,,	.....	5 ,,

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WOOD - CUTTING MACHINERY.

TTT

TTT

IMPROVED TIMBER FRAME DRIVEN FROM BELOW,

With Bogies and Rails.

This Frame is similar to Drawing F, except that instead of rack carriage, the log or tree is carried by a bogie on rails.

42 inch frame, to cut 30 feet long. Power, 10-horse. Weight, 20 tons.

36	„	„	„	8	„	„	12	„
30	„	„	„	7	„	„	10	„
24	„	„	„	5	„	„	8	„
20	„	„	„	4	„	„	7	„
16	„	„	„	3	„	„	5	„

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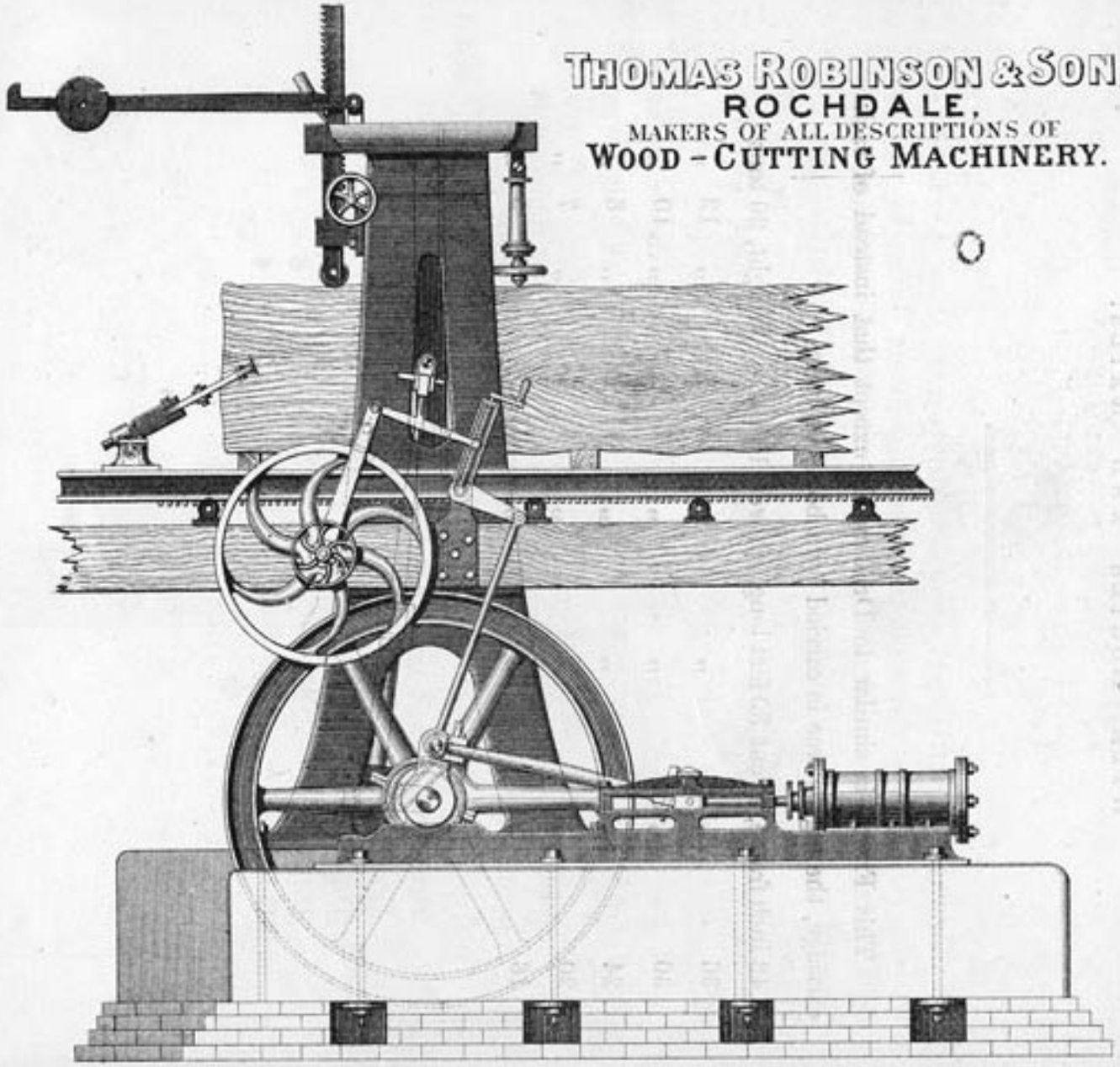

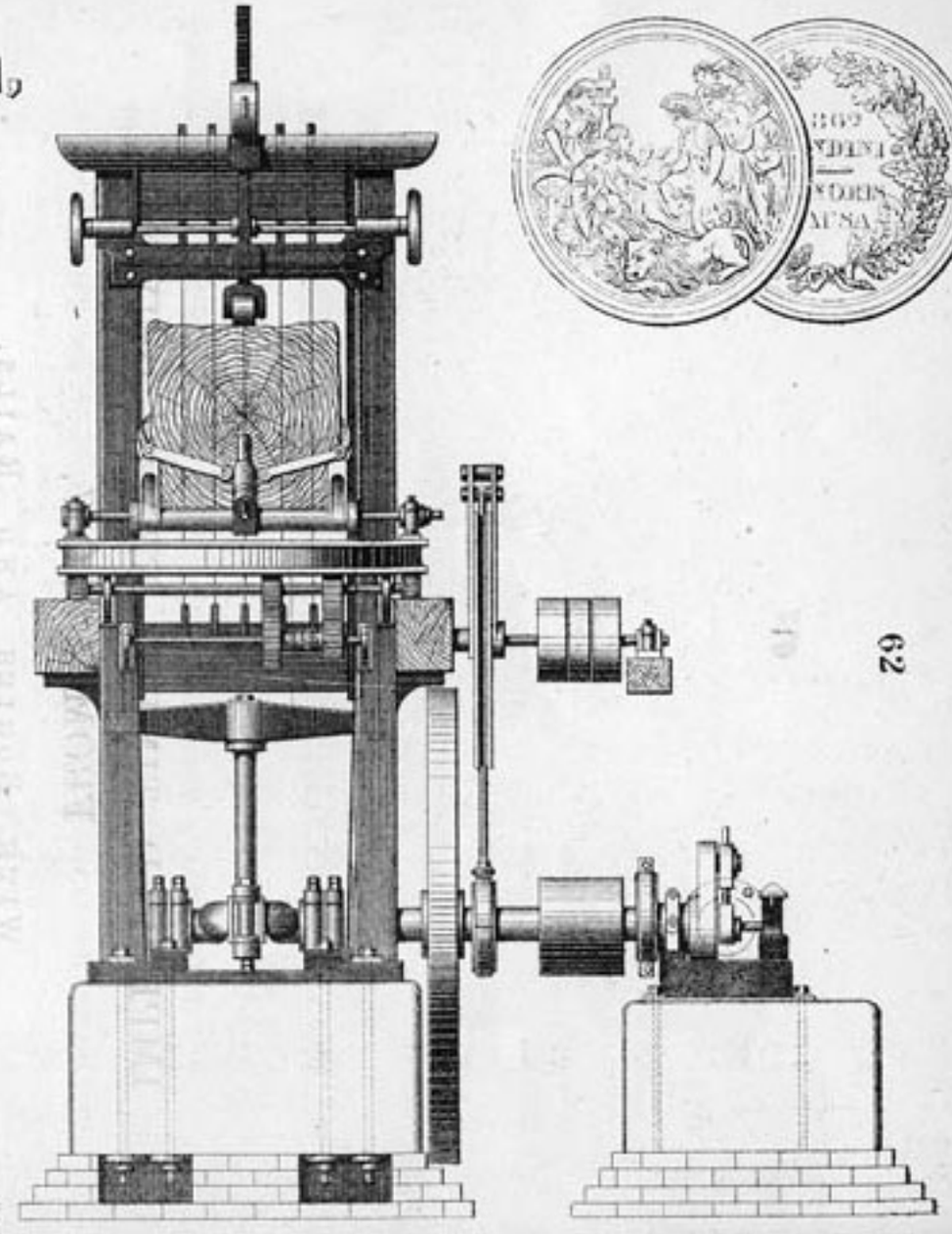

IMPROVED TIMBER FRAMES DRIVEN FROM BELOW WITH

O

IMPROVED TIMBER FRAMES DRIVEN FROM BELOW, WITH STEAM ENGINE DIRECT,

(Arranged to feed with Rack or Bogies as required,)

AND WITH THE ADDITION OF SPECIAL ARRANGEMENT FOR RISING AND FALLING ROLLERS CARRYING THE LOG OR TREE.

These Frames are of the same construction as those described in Drawing F, with the exception, that instead of being driven by a band from the main shaft of saw mill, they are provided with a horizontal high-pressure steam engine, fixed on the same level as foundation plate of Frame, and having its connecting-rod attached to a crank on the end of driving shaft, on the contrary end of which is attached another crank for giving motion to the working frame.

The advantages of this arrangement are, that the Frame can be driven at various speeds according to the nature of the work required to be done, and that they can be introduced into mills where the engine is already fully loaded, and though there is an additional cost for the engine, it is fully counterbalanced by dispensing with the belt and line shaft.

Weight to take a		42	inch log with	30	feet rack,	21	tons.
Ditto	„	36	„	30	„	14	„
Ditto	„	30	„	30	„	13	„
Ditto	„	24	„	30	„	10	„
Ditto	„	20	„	30	„	8	„
Ditto	„	16	„	30	„	6	„

ARRANGED TO FEED WITH RACK OR DOUBLE PULLEY.

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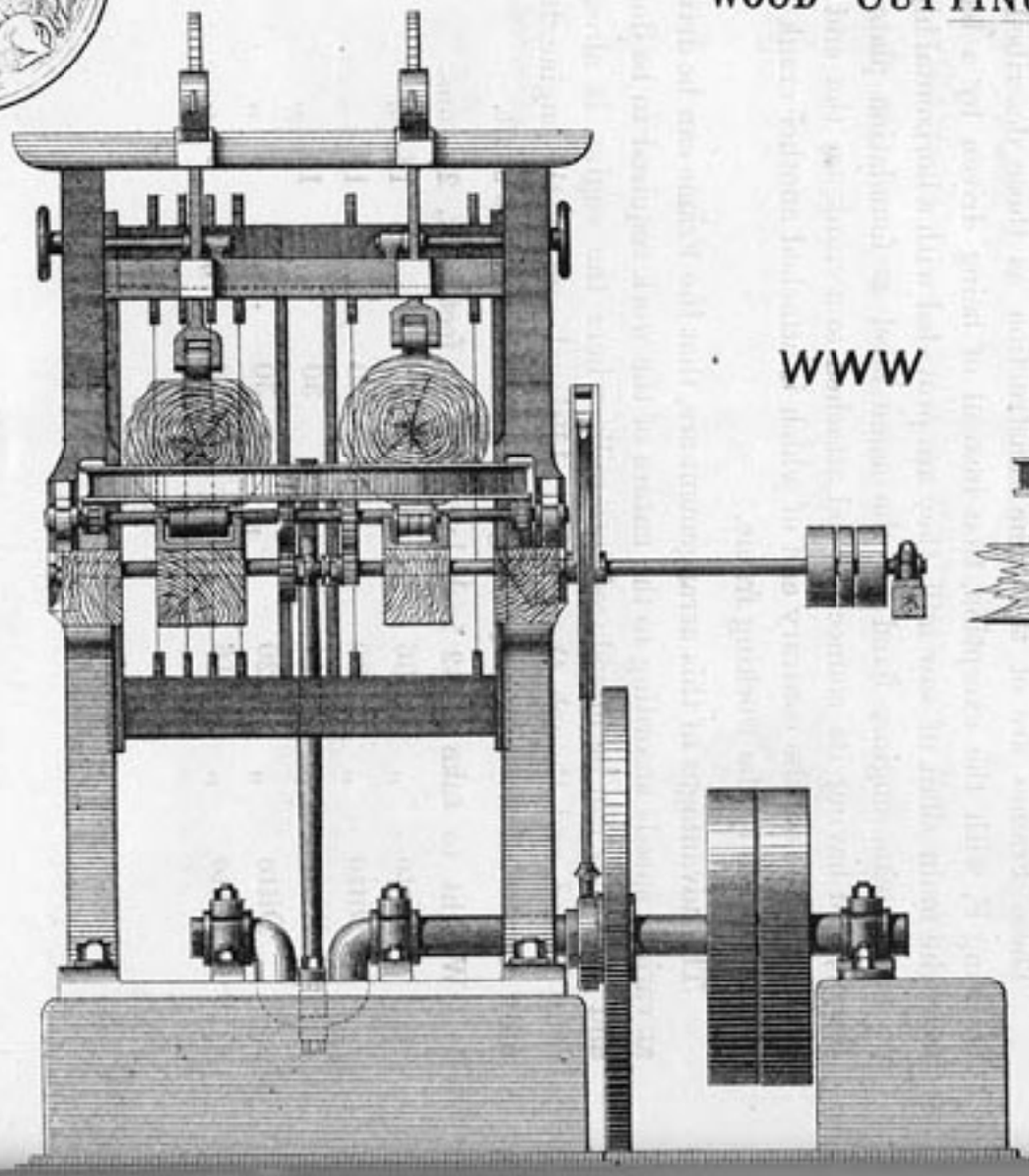

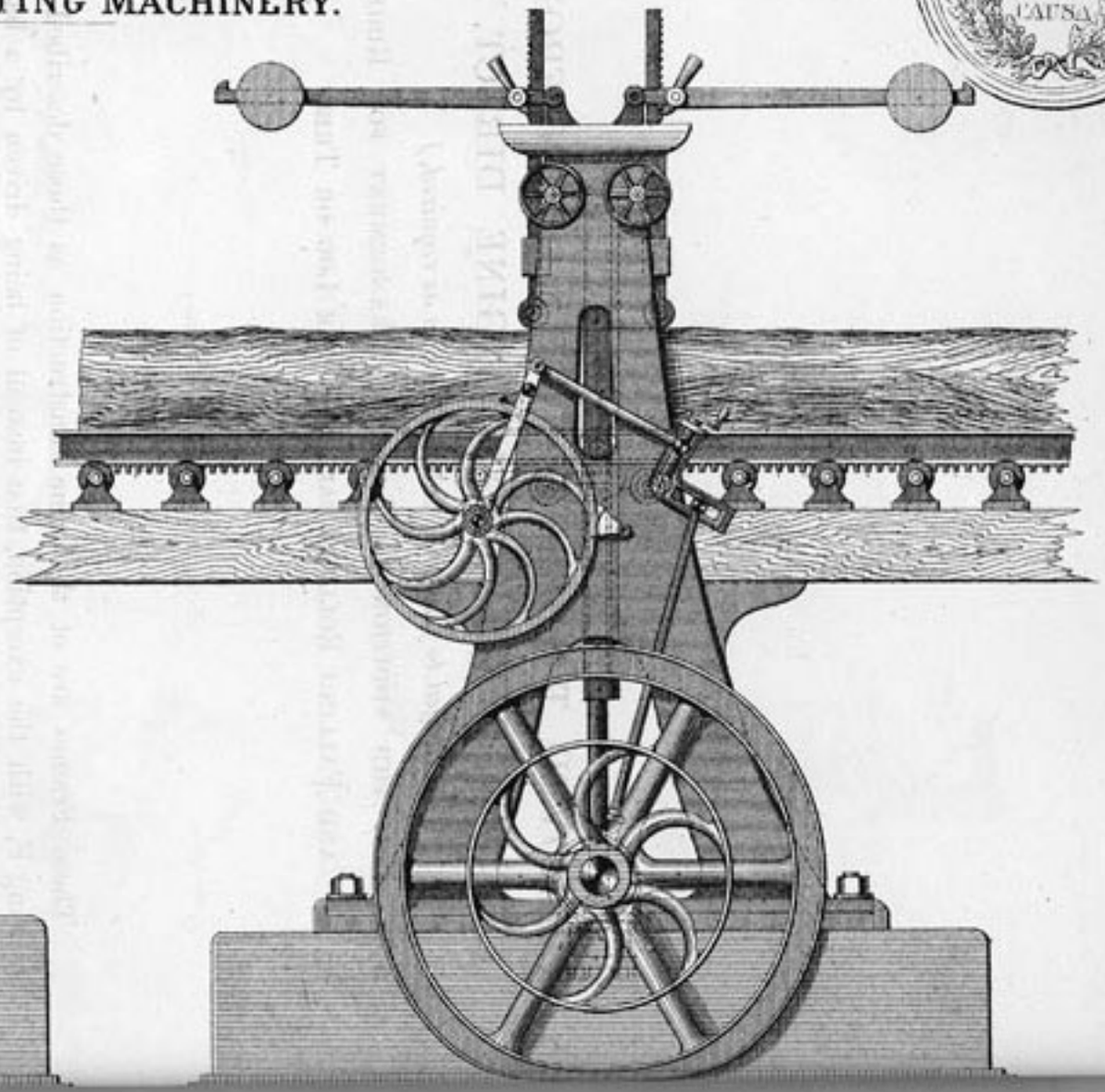

WWW

DOUBLE LOG FRAME.

(Arranged to feed with Rack or Bogies as required.)

The frame here shown is for the purpose of cutting two trees at one time, and is mainly used for the manufacture of planks, deals, and battens.

It will be seen by the drawing that a tree is edged on one side to the width of a plank or deal, and on the other side the tree, when edged, is turned before being passed through, and cut into planks, deals, and battens.

All the moving parts are of the best wrought iron, the bearings of gun metal, and the remaining parts of best cast iron.

	Weight of size to cut				Power required.
Two trees at once	not more than	30in.	by 30ft.	long...	15 tons...12-horse.
Ditto	ditto	ditto	24in.	ditto	...13 „ ...12-horse.
Ditto	ditto	ditto	20in.	ditto	...11 „ ...10-horse.

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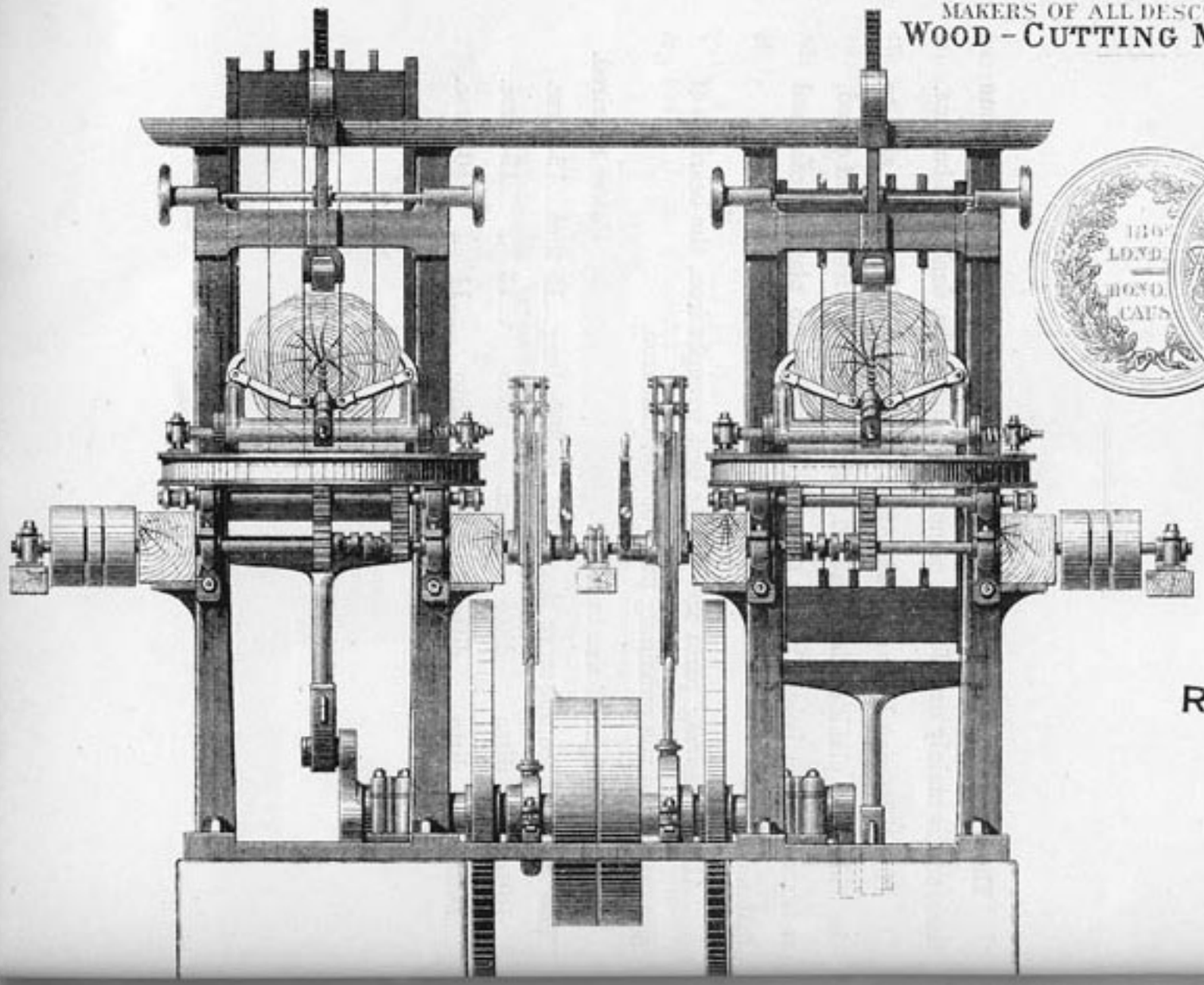
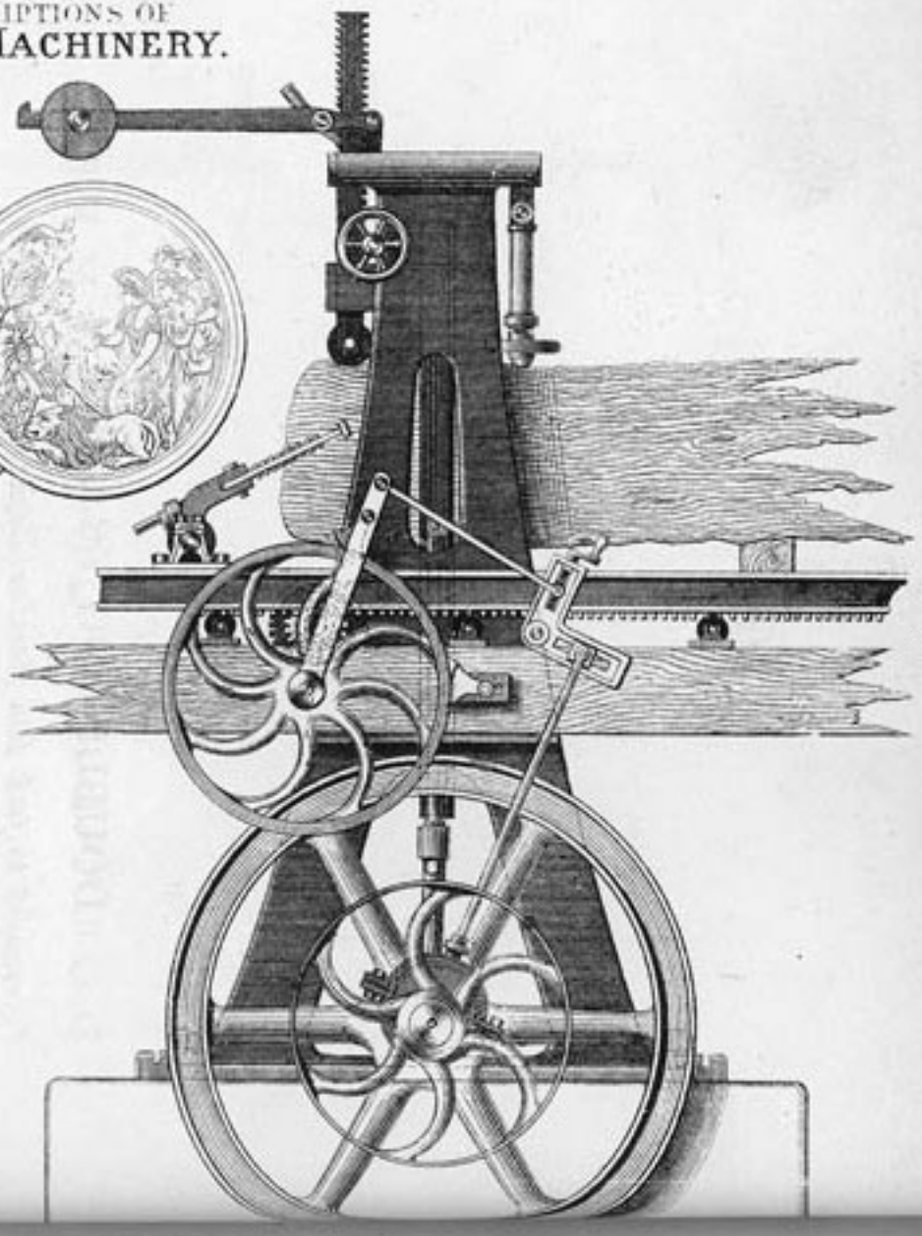
WOOD-CUTTING MACHINERY.





R

R

DOUBLE LOG FRAMES.

(Arranged to feed with Rack or Bogies as required.)

This arrangement consists of two Frames similar to Drawing F, placed upon one bed plate, they being tied together at the top by one entablature embracing the pair, as shown in Drawing. The working Frames are driven by a crank from each end of the shaft, which is placed between the two frames, having two flywheels and fast and loose pulleys to drive the pair; the cranks are fixed in such positions that one frame is cutting while the other is going up, so that though the two Frames are at work they only take the same power to drive them that a single one does, but get through double the amount of sawing.

AVERAGE POWER.					WEIGHT.	
For logs of 30 inch, and 30 feet long,				10-horse	18	tons.
„	20	„	„	„	7 „	.....14 „
„	16	„	„	„	5 „	.....10 „

EE

IMPROVED TIMBER FRAMES DRIVEN OVERHEAD.

(Arranged to feed with Rack or Bogies as required.)

Where it is not practicable to sink much below the surface for a foundation, or where the line shaft is required above instead of below the mill floor, the position of the driving shaft of frame has to be changed from the bottom to the top, as shown in the accompanying Drawing, in which case it is requisite to bolt the main frame to strong beams inserted in the building.

The whole of the other arrangements are similar to the frame previously described in Drawing F.

AVERAGE POWER REQUIRED.

42 inch Frame,		10-horse.		Weight, to cut	30	feet long,	20 tons.
36	„	8	„	„	30	„	17 „
30	„	7	„	„	30	„	14 „
24	„	5	„	„	30	„	9 „
20	„	4	„	„	30	„	7 „
16	„	3	„	„	30	„	5 „

ARRANGED TO FEED WITH RACK OR BOGIES AS REQUIRED.

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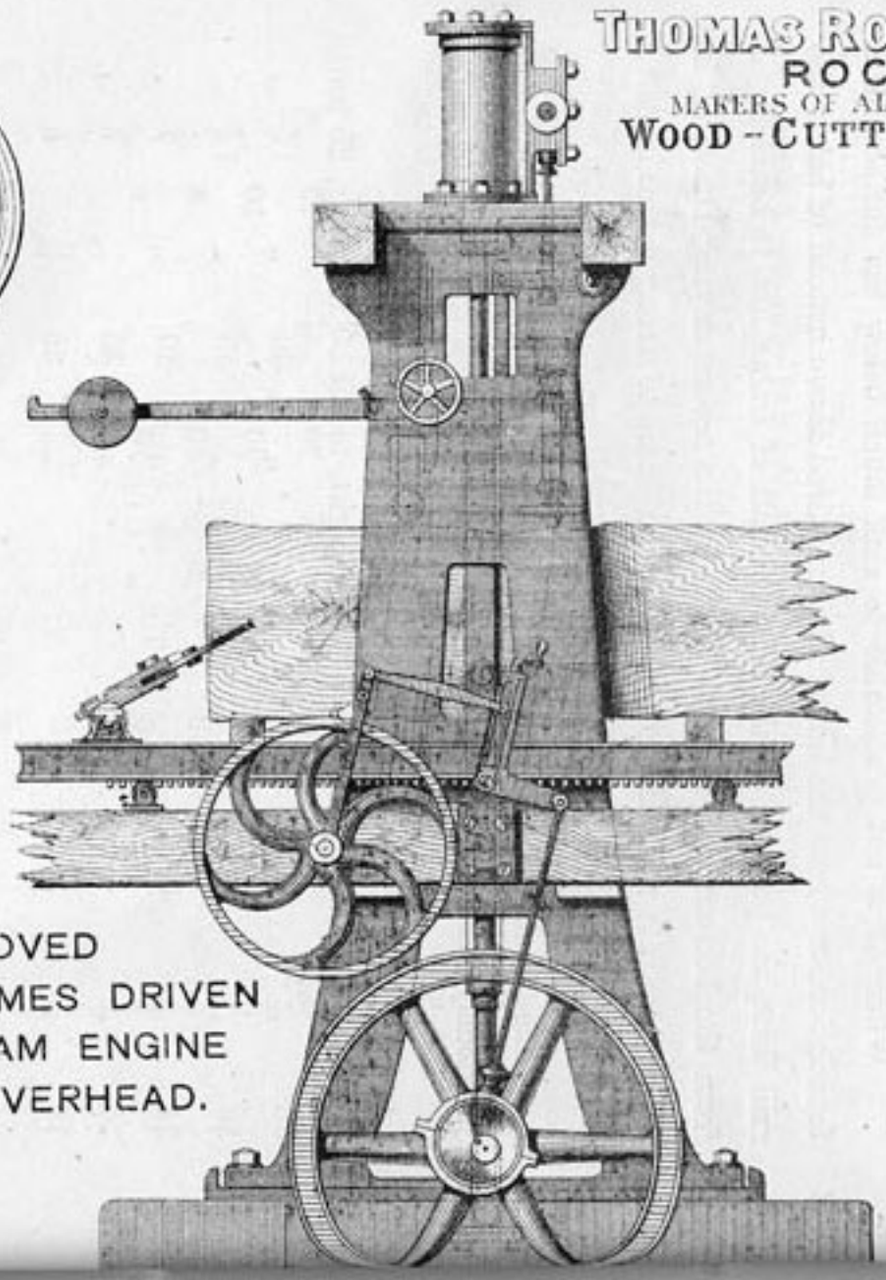
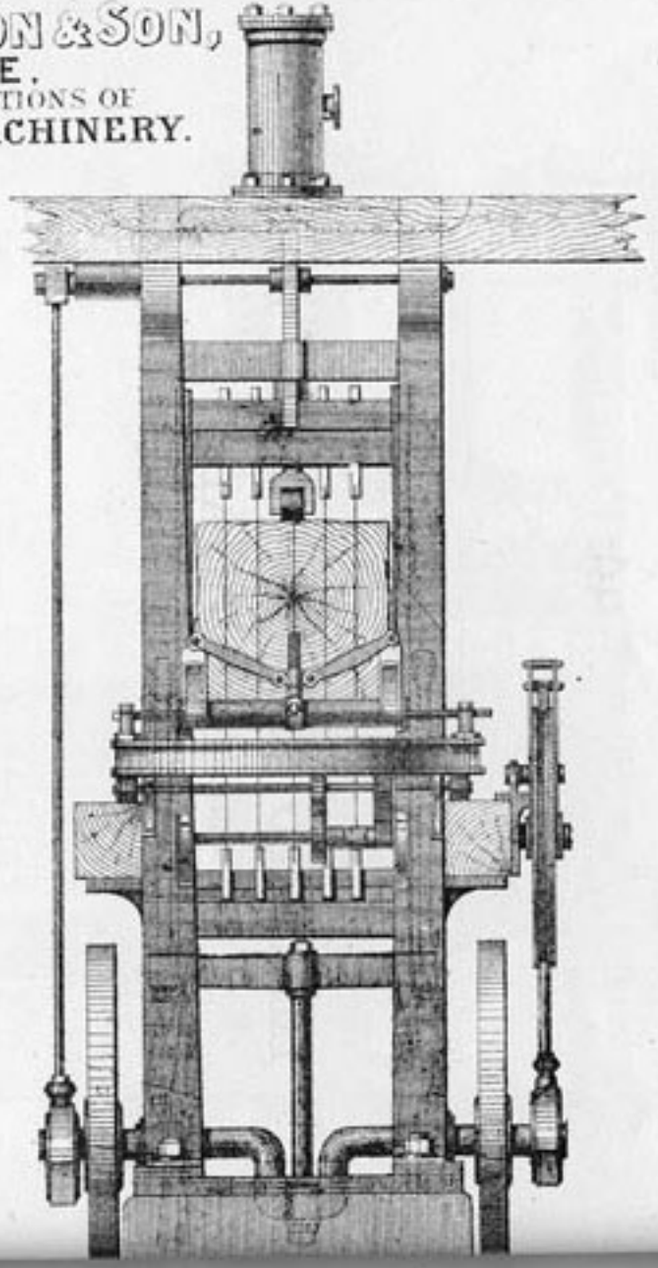
WOOD-CUTTING MACHINERY.



IMPROVED
TIMBER FRAMES DRIVEN
WITH STEAM ENGINE
DIRECT OVERHEAD.

C C



70

CC

IMPROVED TIMBER FRAMES DRIVEN WITH STEAM ENGINE DIRECT OVERHEAD,

(Arranged to feed with Rack or Bogies as required,)

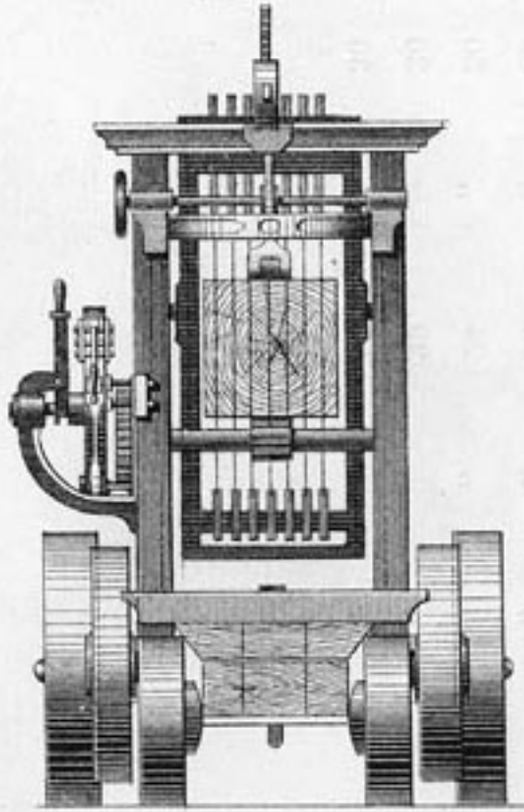
WITH THE ADDITION OF SPECIAL ARRANGEMENT FOR RISING AND FALLING ROLLERS CARRYING THE LOG OR TREE.

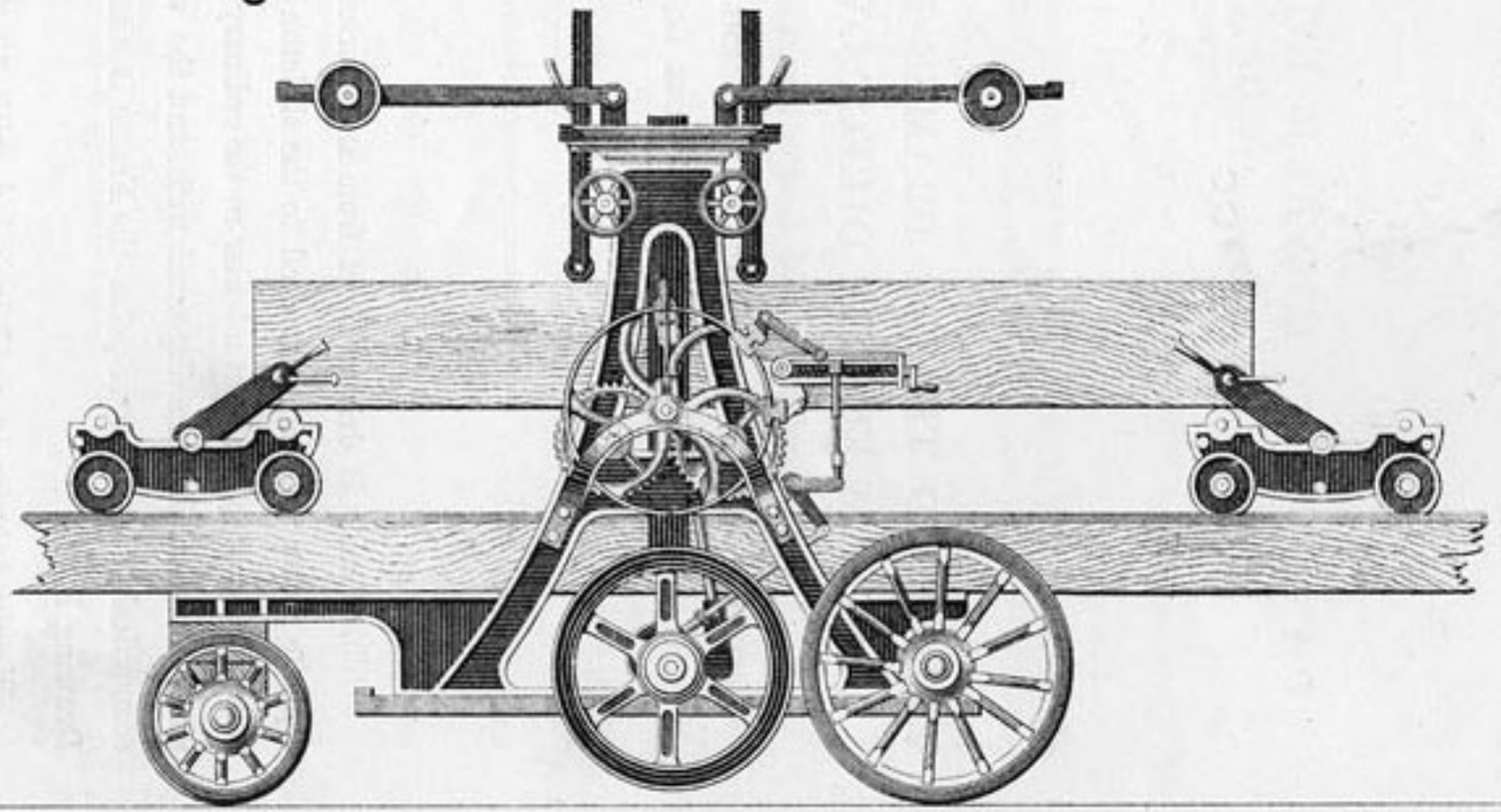
This Frame is driven direct from an inverted cylinder, fixed on the top, the piston-rod being attached to the skeleton or working frame, and steam being supplied from a boiler in the ordinary way. By this arrangement several actions are dispensed with, and the working rendered more economical. In other respects the Frame is similar to the one as per Drawing F.

Weight to take in a 42 inch log, with 30 feet rack, 21 tons.

,,	,,	36	,,	30	,,	17	,,
,,	,,	30	,,	30	,,	15	,,
,,	,,	24	,,	30	,,	10	,,
,,	,,	20	,,	30	,,	8	,,
,,	,,	16	,,	30	,,	6	,,

J





PATENT PORTABLE LOG FRAME,

With Deal-cutting Apparatus when required.

Having had considerable inquiry for a Vertical Sawing Frame, capable of cutting either logs or deals, requiring no foundation, and perfectly portable, we have made and thoroughly tested the Machine represented in the accompanying Drawing, and now confidently recommend it to large contractors and others, who may thus have their logs and deals sent direct to the buildings they are erecting at a distance from the work-shops, and there sawn to the best advantage.

The timber merchant in Russia, Norway, or any English or foreign district, may take it into the woods for the purpose of sawing up trees, moving it as the timber is cleared around it.

The Machine generally is constructed similar to an ordinary log frame, having movable apparatus for cutting deals.

The working frame is driven by a bell crank on the main shaft, on each end of which is a flywheel truly turned, either of which wheels is used as required for driving by belt from portable or other engine according to which side is most convenient, thus dispensing with pulley.

The whole of the Machine is mounted on four strong wheels, arranged for turning at various angles, and can be moved about by two or three horses according to size.

When required for work it is drawn to the place, and sufficient earth removed from under the wheels to allow the bed plate to rest on the ground. Longitudinal timbers are then laid on each side, as shown, to which are attached iron rails, on which travel two small carriages for carrying each end of the tree or log; the timber whilst being sawn is propelled by fluted rollers, worked by friction or other feed motion.

The working frame, all shafts, levers, and other parts requiring strength, are made of the best wrought iron, the bearings of brass, and the remaining parts of best cast iron.

WEIGHT OF SIZE TO CUT	POWER REQUIRED
Up to 16 inches square and 30 feet long	4 tons .....3-horse.
20 „ „ „	6 „ ..... 4 „
24 „ „ „	7 „ ..... 5 „
30 „ „ „	8 „ ..... 6 „

With Deal-cutting Apparatus if required.

YY

HORIZONTAL BOARD-CUTTING MACHINE.

This Machine is specially adapted for cutting hard and soft woods into coach panels, and other thin boards or planking. A great number of these machines have been made during the last three years, which has enabled us to effect very considerable improvements, and they may now be considered the most perfect machine for picking the tree or log as it is being cut.

The saw cuts both ways, and is driven at a very high speed.

The countershaft is mounted upon a slide, so that the connecting-rod can always be kept at the best driving position.

				Weight.	Power.
To cut 48 inches square	and	24 feet	long	7 tons	2-horse.
„ 42	„	24 „	.....	6 „	2 „
„ 36	„	24 „	.....	5 „	2 „
„ 30	„	24 „	.....	4 „	2 „

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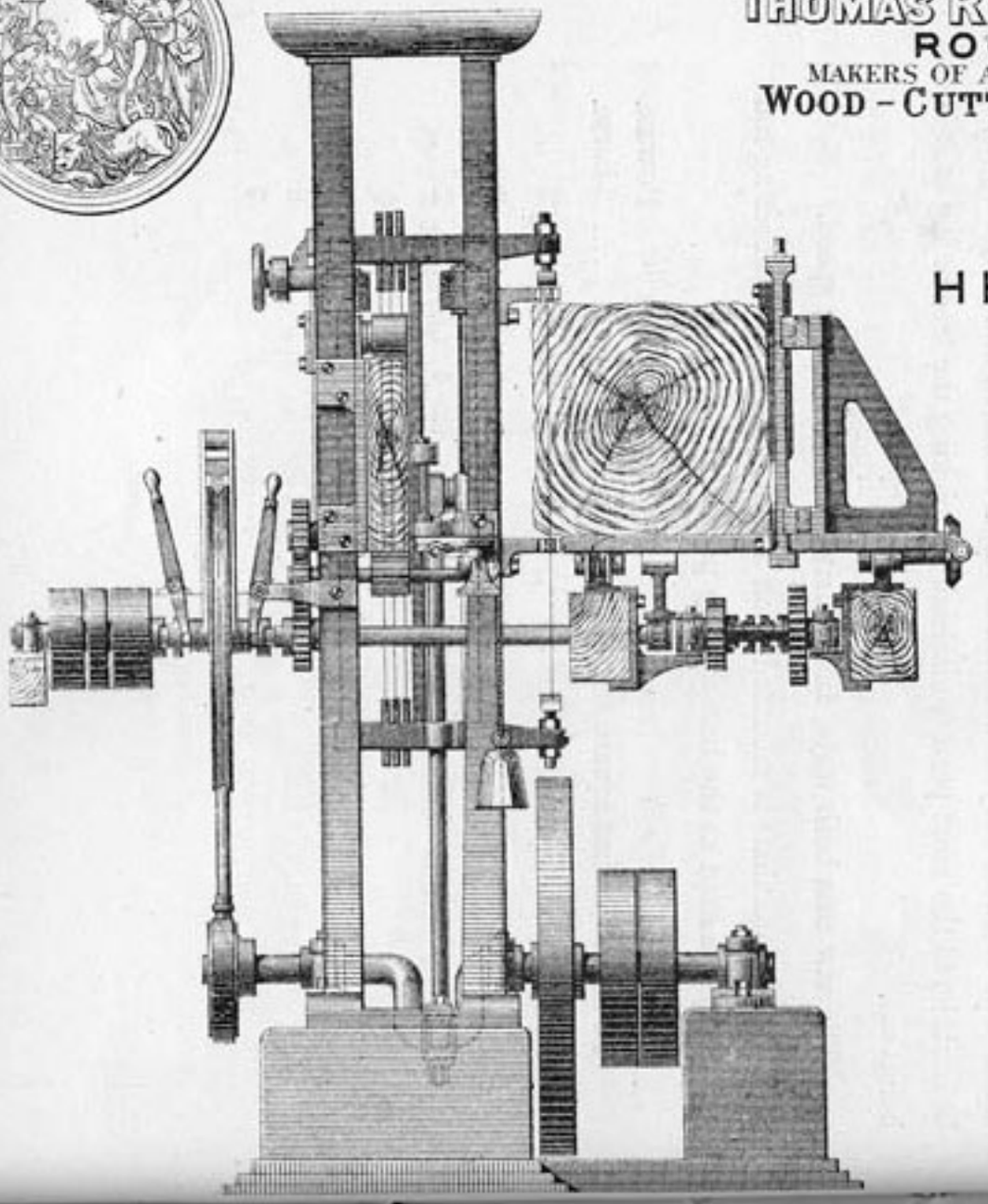
WOOD - CUTTING MACHINERY.



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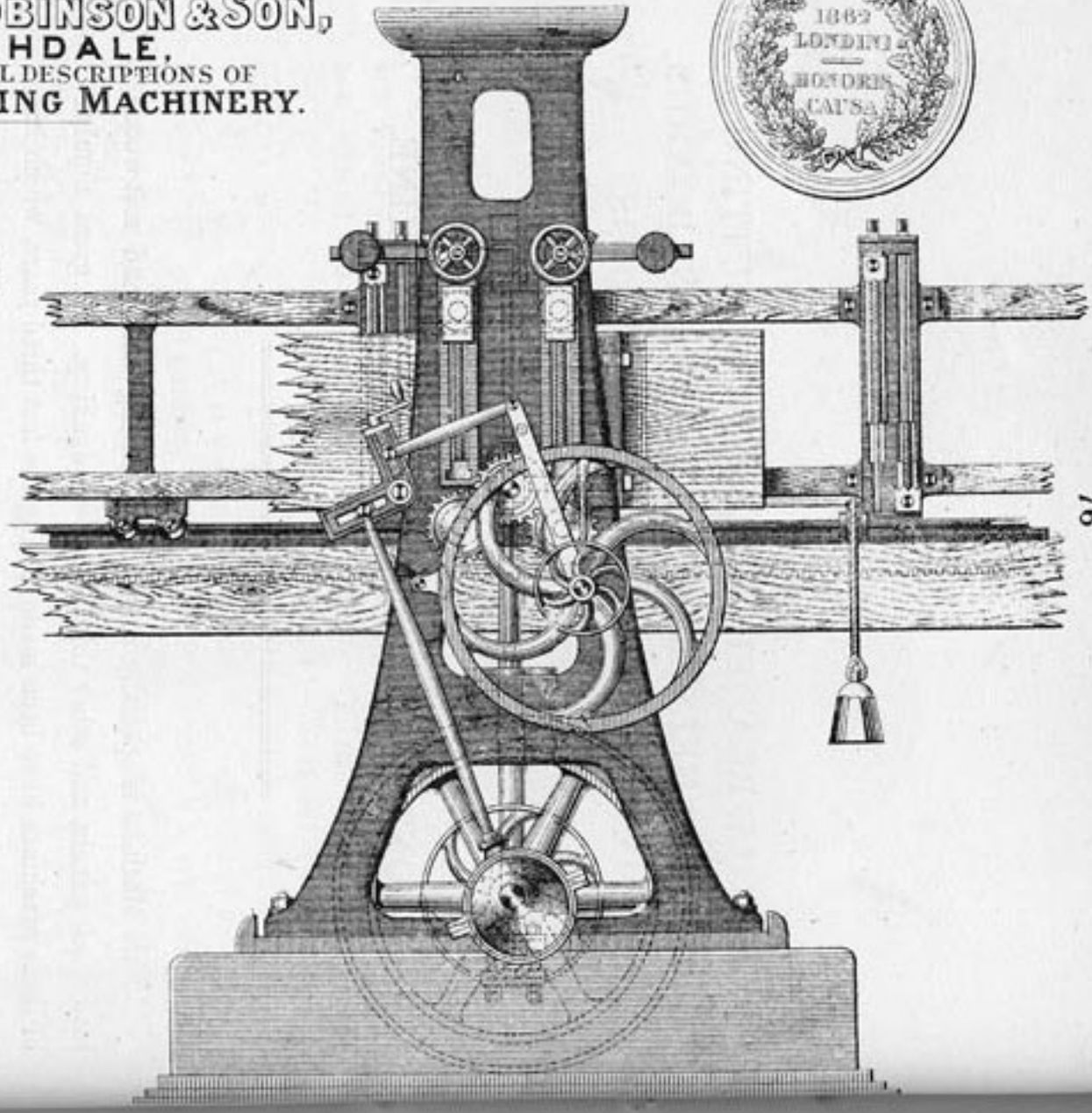


HH

SINGLE-BLADED FRAME FOR CUTTING COACH PANELS AND OTHER THIN BOARDS, OPENING AND FLITCHING LOGS.

With Apparatus for cutting Flitches or Deals when required.

Hitherto it has been necessary to employ hand sawyers for the purpose of cutting mahogany and other expensive woods into boards, when it was desirable to examine the wood after each cut, to see if any change was wanted in the thickness of stuff being sawn.

This Frame entirely obviates the necessity for such purpose, and cuts the work much truer and clearer. Its action is as follows :—

The saw is attached to the skeleton or working frame, in such manner as to be outside the Frame, and runs over guides to keep it taut, which enables very thin saws to be used.

The skeleton, being very light, can be driven with a long stroke at a high speed, travelling 600 feet per minute.

The log to be sawn is attached to a travelling carriage of special construction, for the purpose of setting the log towards the saw perfectly true and exact after each cut, for cutting the next board.

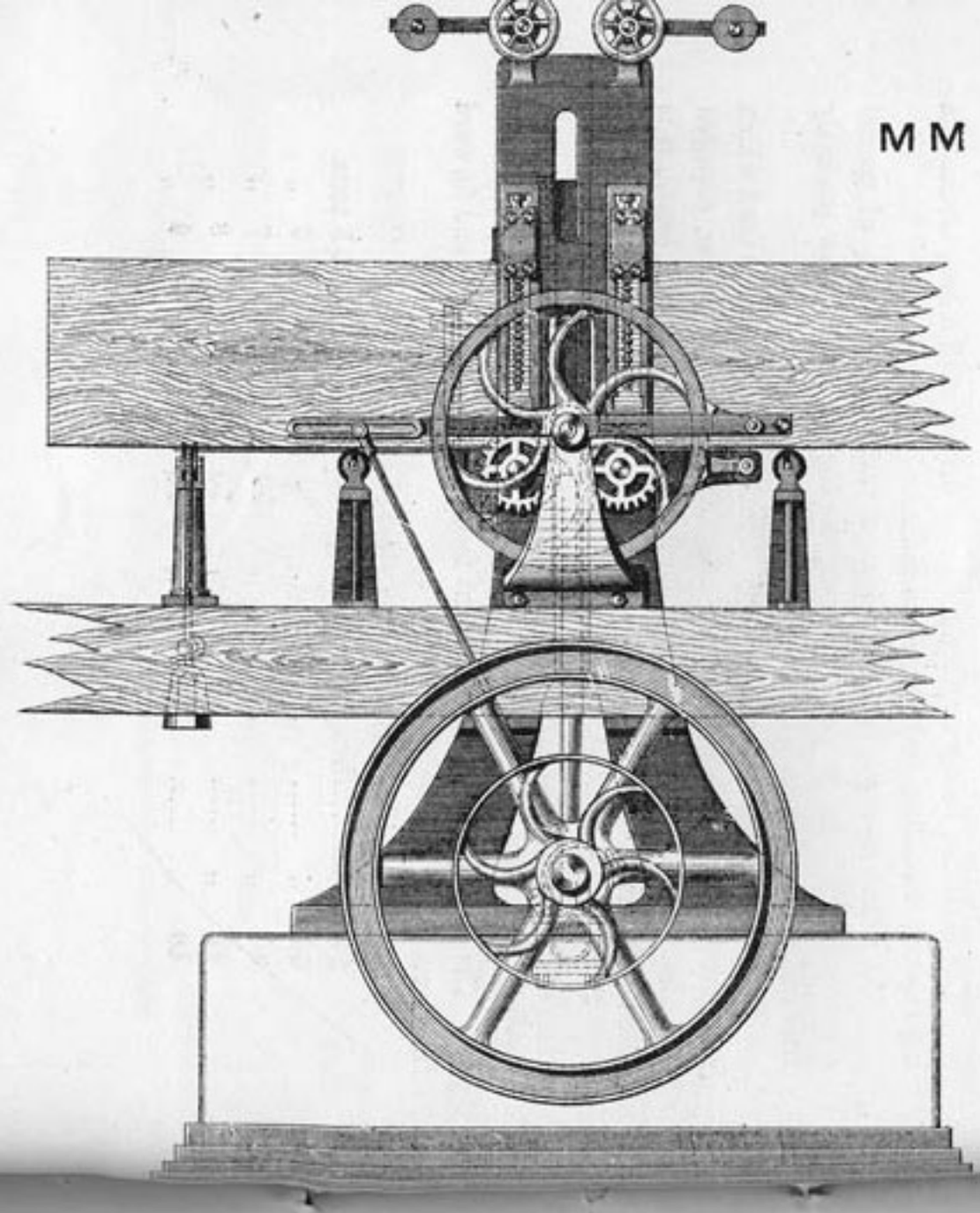
For the cutting of beams or large scantling, a feed can be used which will give out ten superficial feet per minute ; and as the power required and the waste of timber are considerably less than the rack bench, it is often preferred.

It will be seen by the drawing that a deal can be cut at the same time as the log on the carriage, which makes the Frame into a combined log and deal Frame.

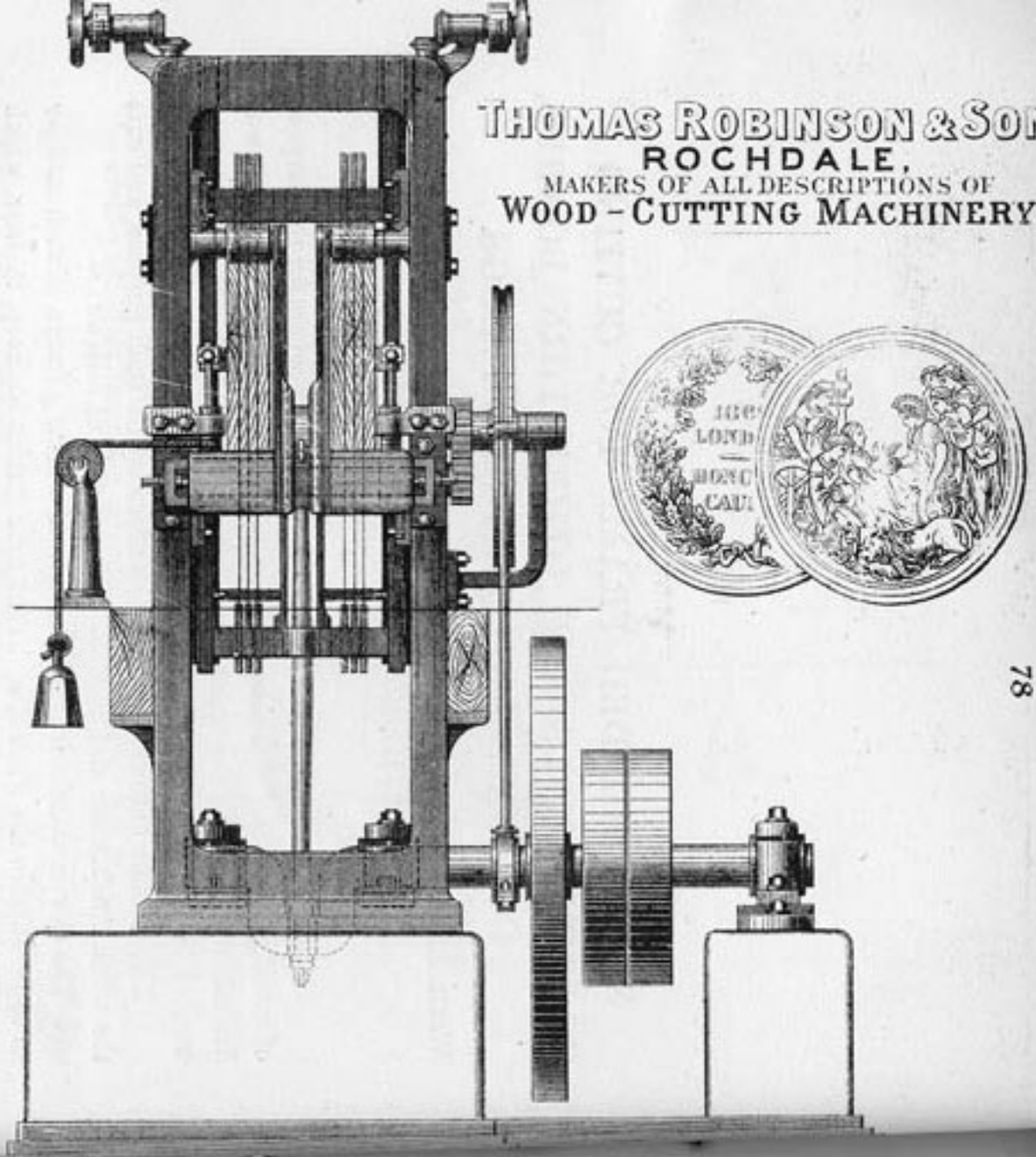
The carriage is fitted with silent feed motion, and quick and forward motion.

They are made of the following sizes :—

24	inches.....	Lengths of Carriage	30	feet.....	Weight	5	tons.
30	,, ...	,,	,,	30	,, ...	,,	6	,,
36	,, ...	,,	,,	30	,, ...	,,	7	,,
42	,, ...	,,	,,	30	,, ...	,,	8	,,
48	,, ...	,,	,,	30	,, ...	,,	9	,,



MM



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WOOD - CUTTING MACHINERY.

MM

DOUBLE DEAL FRAME.

The deals are fed through the Frame by means of calender rollers of large diameter.

The bottom ones, which are stationary, are so fluted as not to indent or mark the deals.

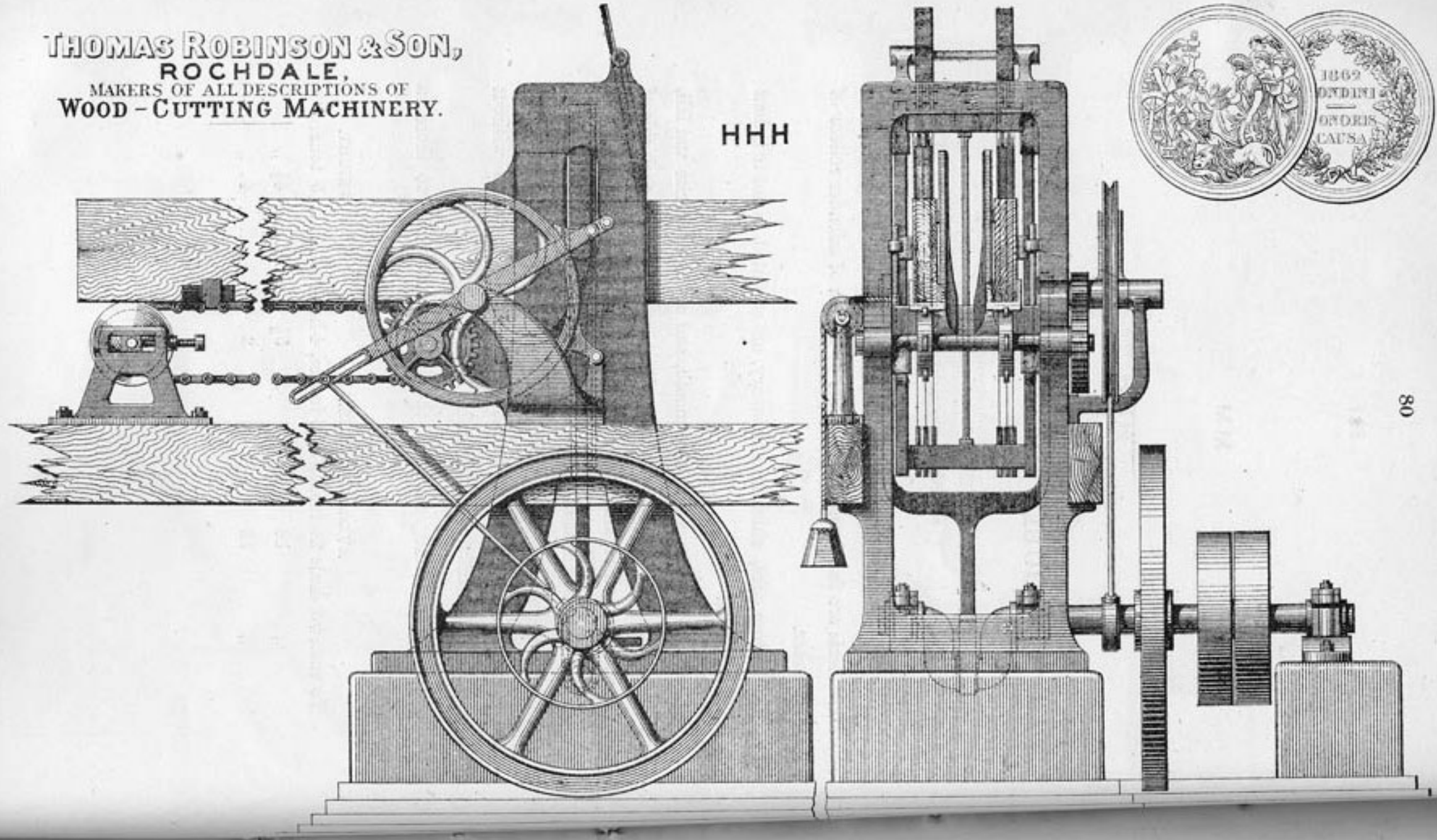
The two top rollers, which are smooth, and arranged to rise and fall, so as to suit various depths of deals, are disconnected, so that each side of the Frame will work separate from the other.

A great improvement has recently been introduced in the Frame by mounting the two fences on a slide, with an adjusting screw; by this means the thickness of the board next the fence may be varied without either altering the saws or stopping the Frame.

All the other arrangements of the Frame are similar to those in Drawing L.

AVERAGE POWER.					WEIGHT.
To cut two deals	24 inches	by	6 inches,	4-horse	5 tons.
,,	18 ,,	,,	6 ,,	$3\frac{1}{2}$	$4\frac{1}{2}$,,
,,	12 ,,	,,	4 ,,	3	4 ,,

HHH



HHH

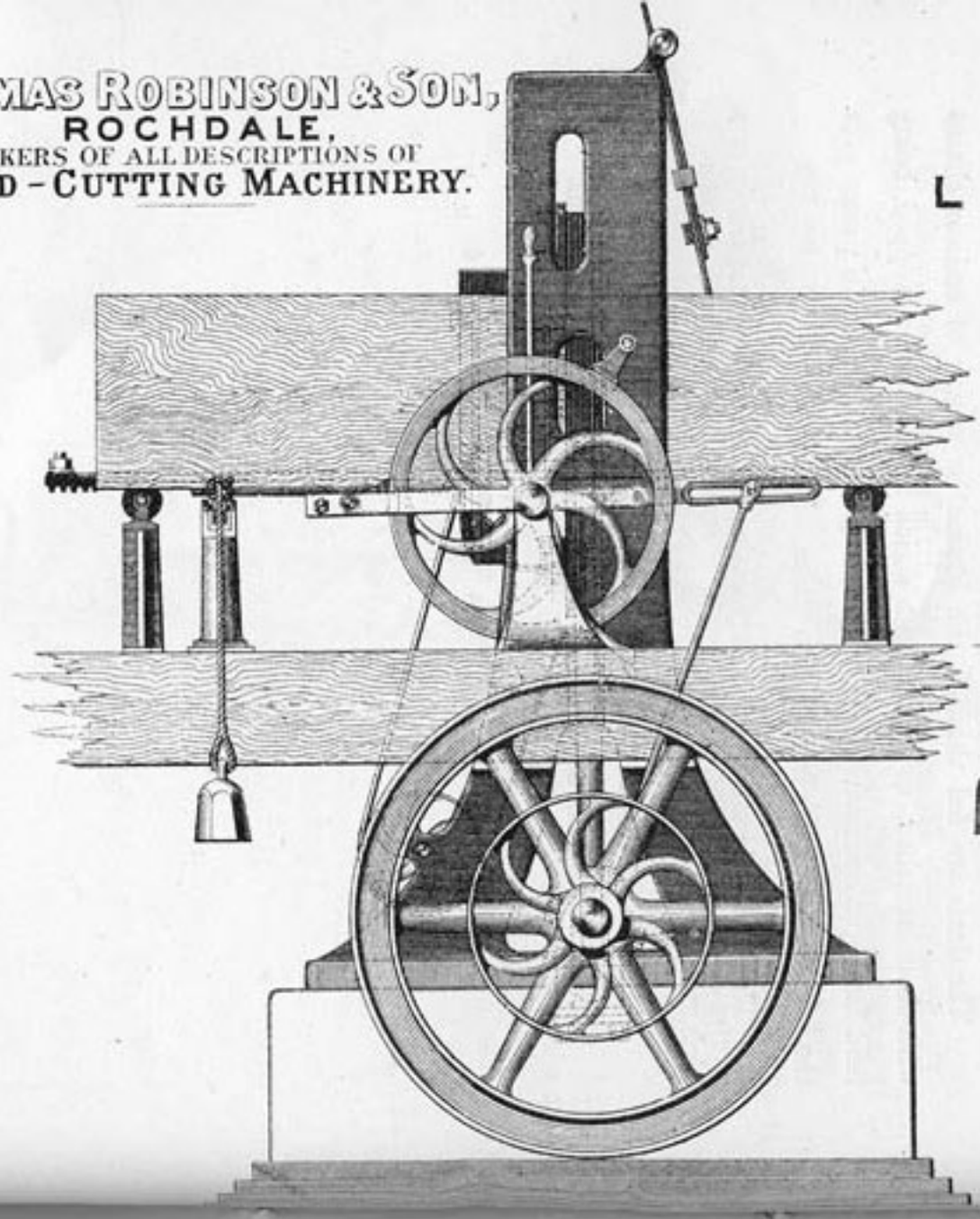
DOUBLE CHAIN-FEED DEAL FRAME.

The deals are fed through the Frame by means of endless chains with shoes attached, as shown, into which the deals are dropped, being held fast by a common wedge, which drops out as the chain passes over the feed rollers at the front of the frame.

This principle works with very little friction, and consequently at a high rate of feed.

	AVERAGE POWER.	WEIGHT.
To cut two deals 24 inches by 6 inches,	4-horse	5 tons.
„ 18 „ 6 „	$3\frac{1}{2}$ „	$4\frac{1}{2}$ „
„ 12 „ 4 „	3 „	4 „

L



L

DOUBLE DEAL FRAMES.

The Frames here shown will cut two deals at once of any depth up to 24 inches, and of any thickness up to 6 inches, and 21 feet long.

The Swing Frame is divided by two upright standards, near the top of which is attached the connecting-rod, which is open, to allow the passage through of the rack carriage; this rack has a crosshead, for the ends of deals to rest against while being sawn.

Friction rollers fixed in stands are also provided for the deals to rest upon.

The Frame is fitted with silent feed motion.

	AVERAGE POWER.	WEIGHT.
To cut two deals 24 inches by 6 inches,	4-horse	4 tons.
„ 18 „ 6 „	3½ „	3½ „
„ 12 „ 4 „	3 „	3 „

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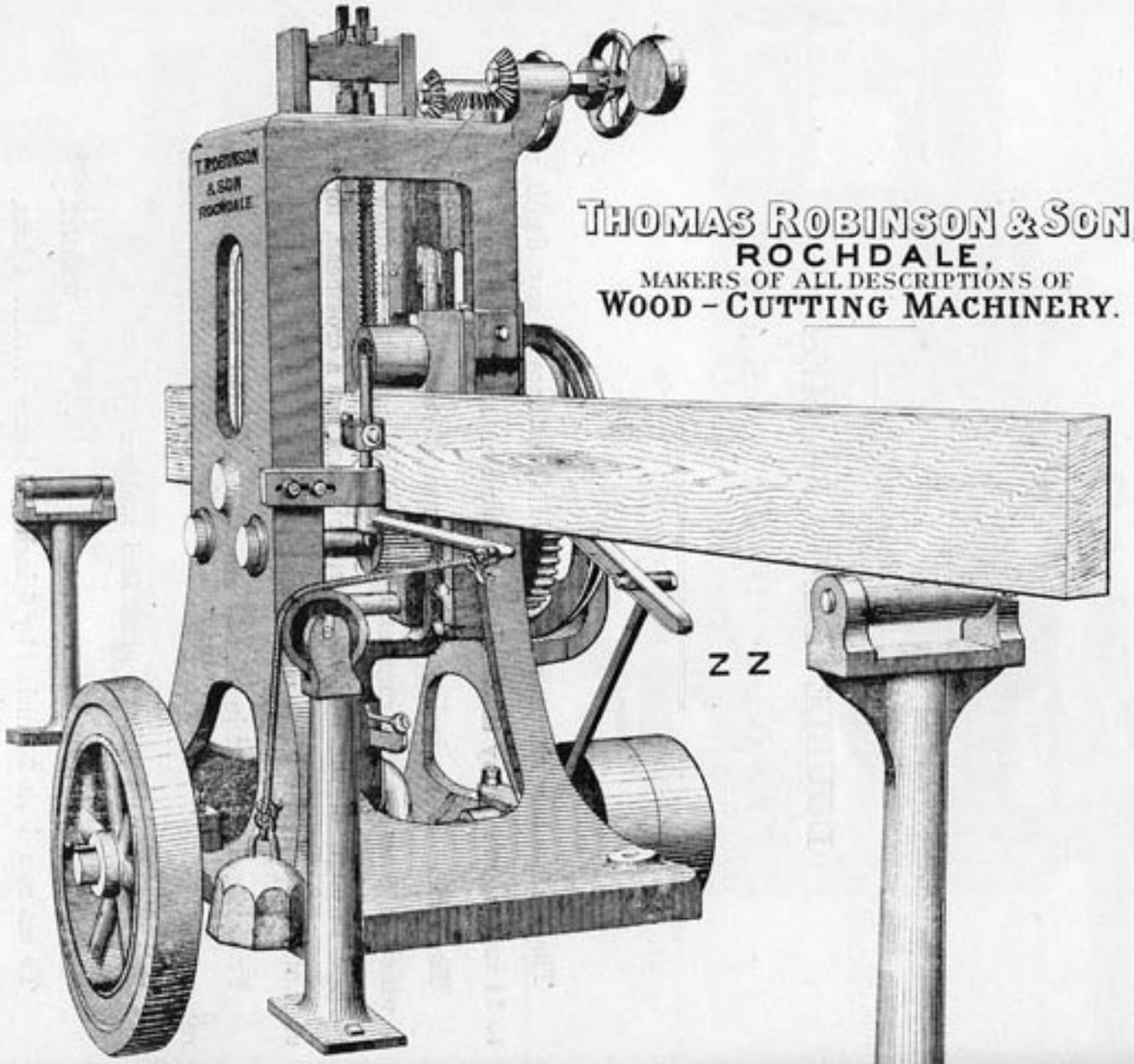


SINGLE BAND FRAME

ZZ

SINGLE DEAL FRAME.

This Machine is intended to meet the requirements of those who have not sufficient sawing to employ a double Frame. It is not only considerably lower in price, but as the framework is all in one casting it only requires two wooden beams to stand upon, thereby saving all the expense of a stone or brick foundation.

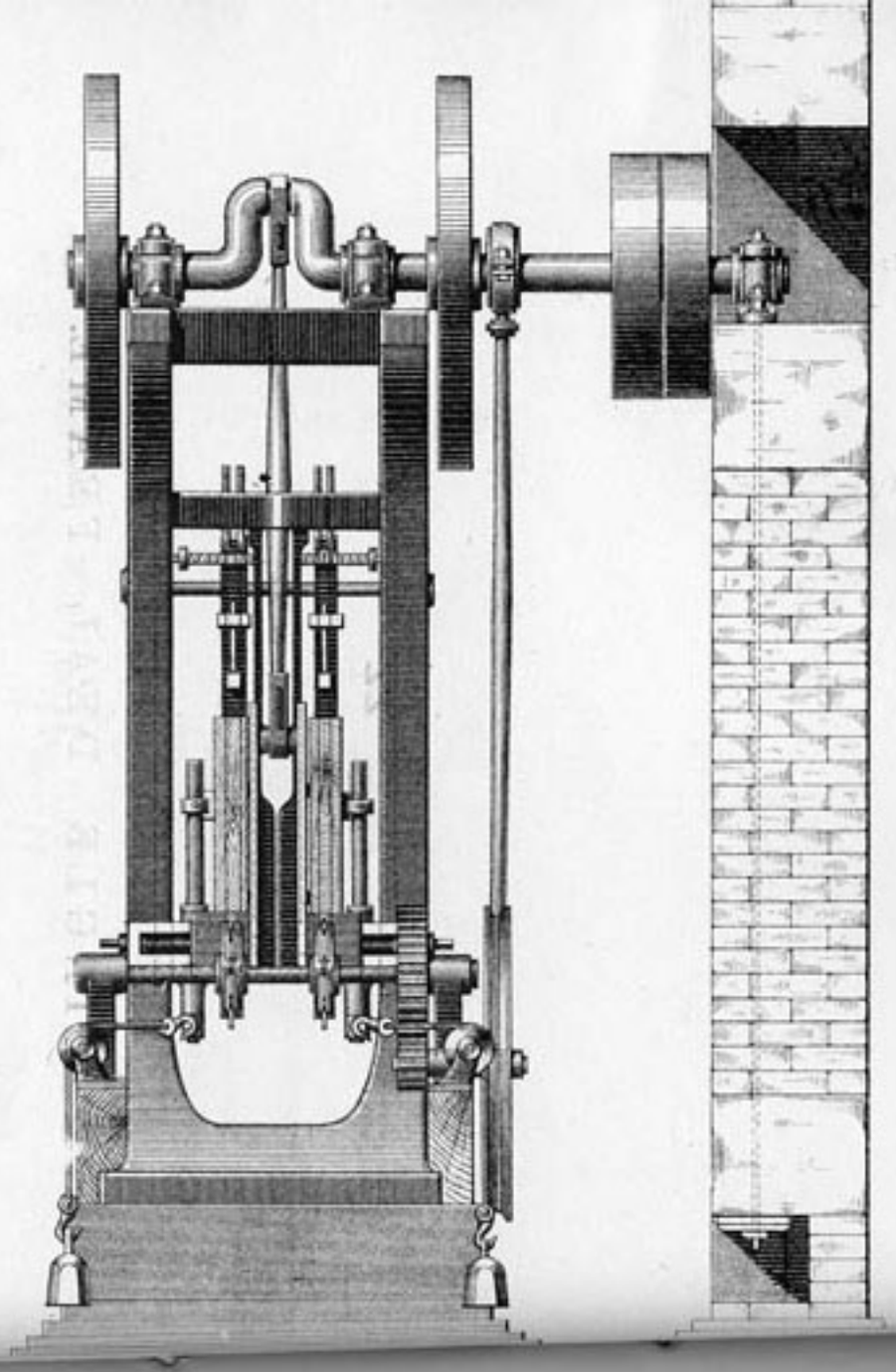
To cut deals of any size up to 4 inches by 18 inches.

Weight, 2½ tons. Power required, 2-horse.

To cut deals of any size up to 4 inches by 24 inches.

Weight, 3 tons. Power required, 3-horse.

F.F.



FF

DEAL FRAMES DRIVEN OVERHEAD.

The Frame here shown is for the purpose of cutting two deals at once into boards, in a similar manner to Drawing L, except that the driving shaft is on the top instead of below the frame.

The Frame may be erected on a strong wood floor, in which case it requires no stone foundation.

AVERAGE POWER.

To cut two deals	24in.	deep by	6in.,	4-horse.	Weight 5 tons.
„	18in.	„	6in., 3½	„	„ 4½ „
„	12in.	„	4in., 3	„	„ 4 „

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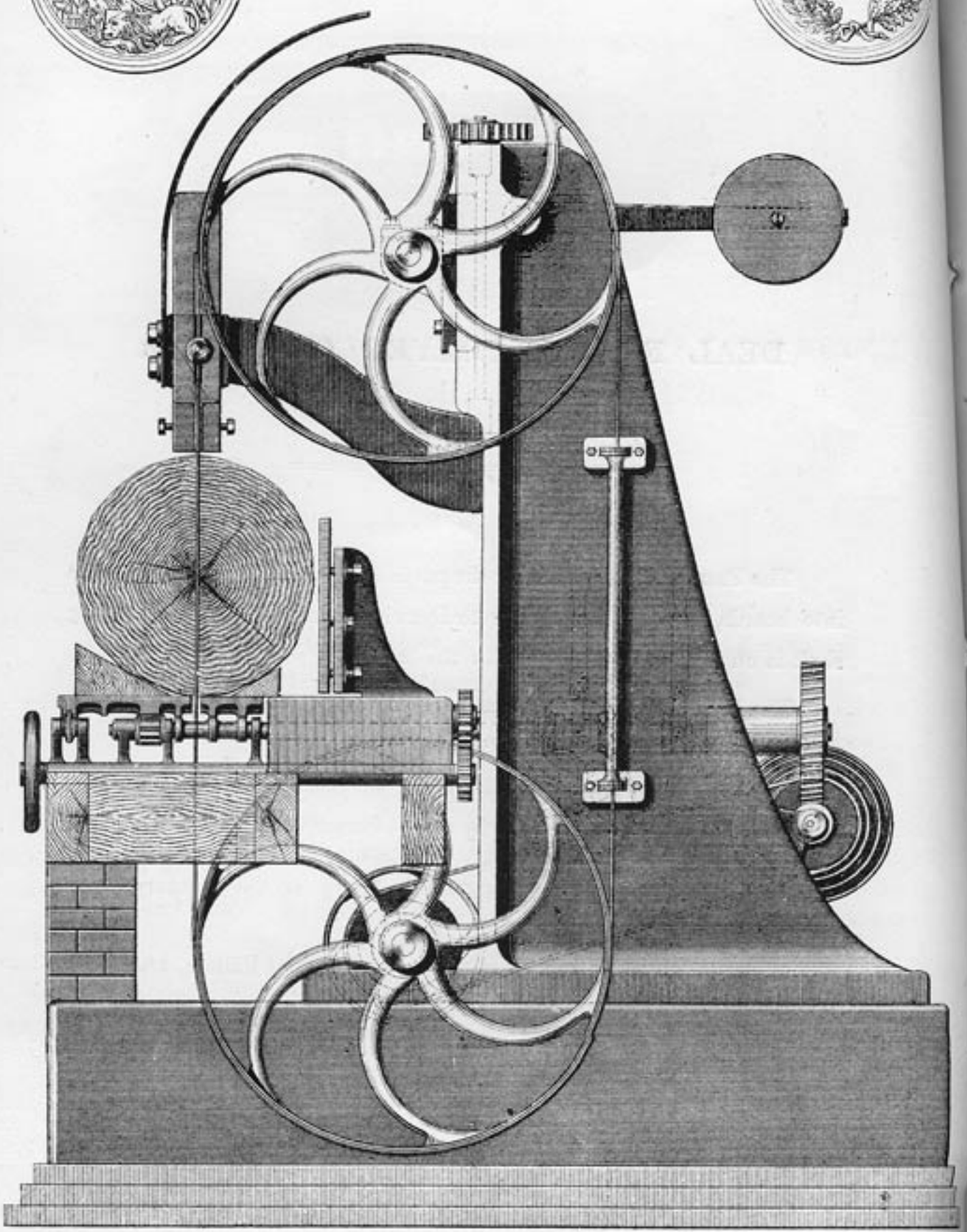
WOOD-CUTTING MACHINERY.

R 1



ENDLESS BAND SAWING MACHINE, FOR SAWING LOGS OR TREE

R 1

ENDLESS BAND SAWING MACHINE, FOR SAWING LOGS OR TREES.

This Machine is for the purpose of cutting trees, logs, or irregular shaped timber into beams or scantlings, as may be required. The table is worked by a rack and pinion, and fitted with a quick return motion for running the table back after each cut.

It is also fitted with a movable fence, so that boards can be cut of different thicknesses. This Machine has been greatly improved by making the travelling top of cast iron, and planing it true on both sides, so that cuts can be made with as great accuracy as the ordinary saw bench.

Speed of Sawing 6 to 25 feet per minute. Diameter of Pulleys, 5ft.
Power required, 8-horse.

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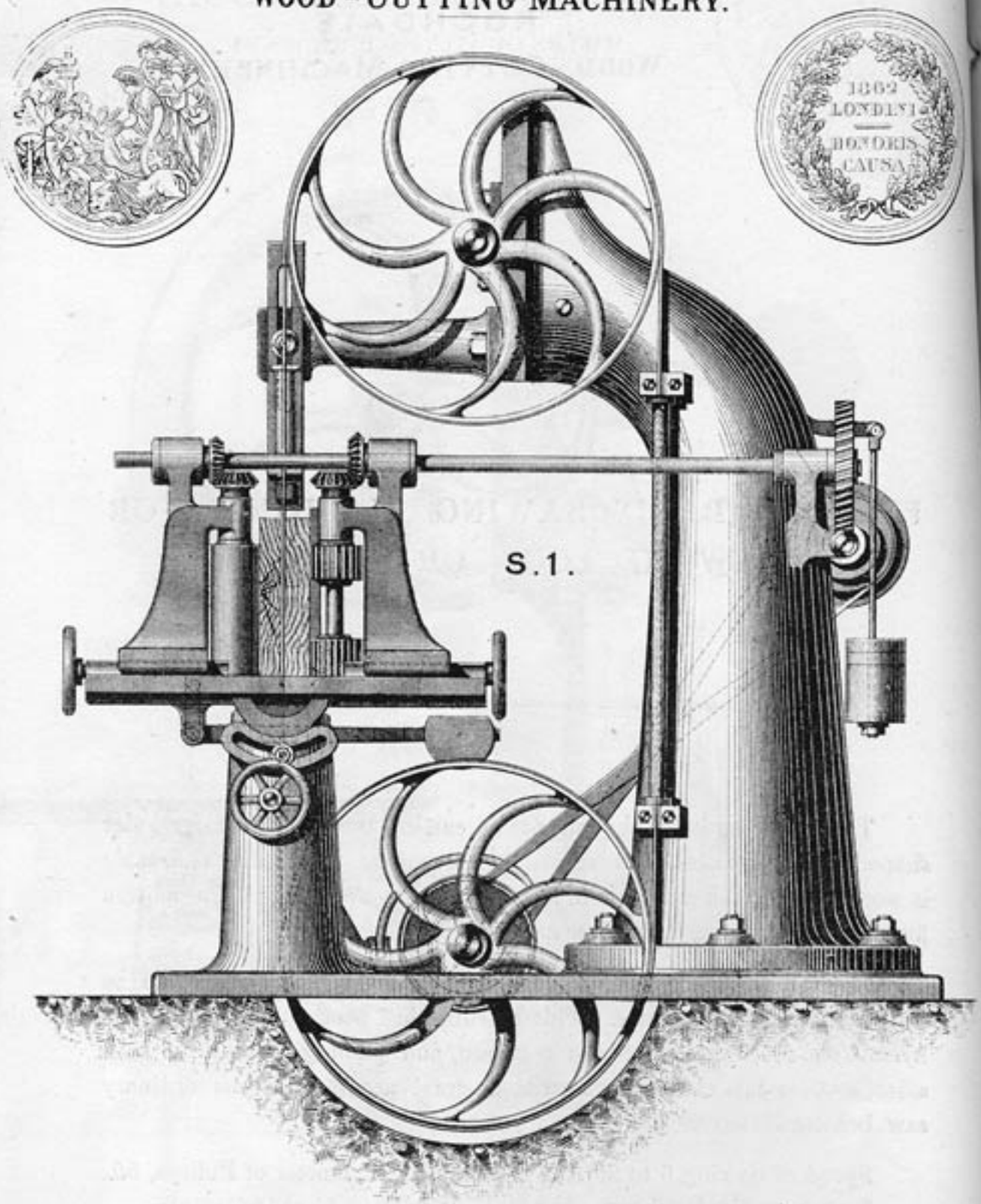
MAKERS OF ALL DESCRIPTIONS OF

WOOD-CUTTING MACHINERY.



ENDLESS BAND SAWING MACHINE, FOR SAWING DEALS.

The deals are fed through this Machine by means of vertical calender rollers, of large diameter, arranged that both rollers can be moved in and out by means of a hand wheel for adjusting different thickness of boards sawn. The whole of this arrangement, when not required for sawing deals, can be easily removed, and the Machine can be used as an ordinary Band Sawing Machine.

No. 1 Size, 4ft. Pulley.

Weight, 3½ tons. Power, 3-horse.

No. 2, with Pulleys, 3.6 diameter.

Weight, 2½ tons. Power, 2-horse.

THOMAS·ROBINSON & SON,

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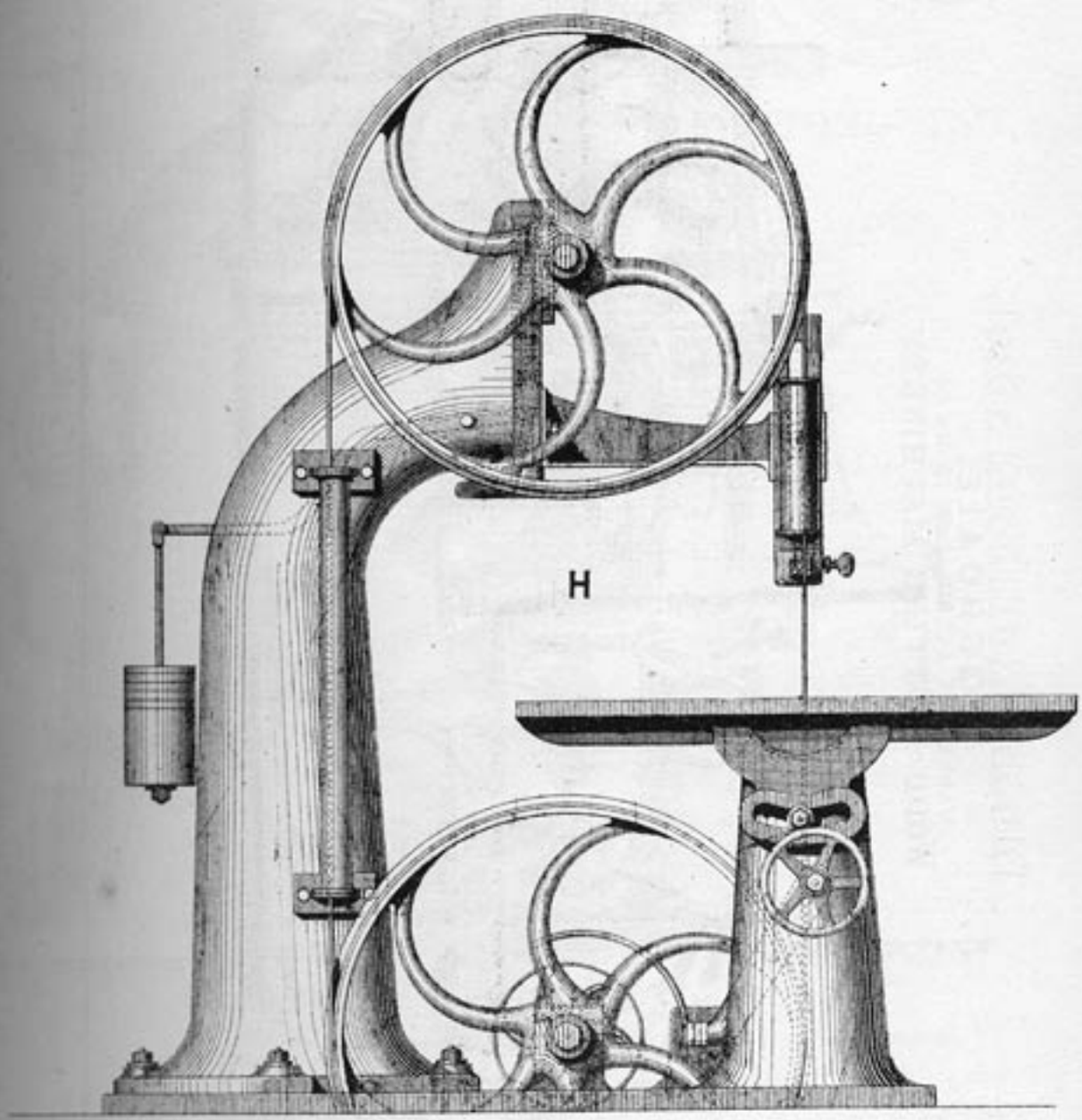


ENDLESS BAND SAWING MACHINE.

This Machine is for cutting out circles and other shapes; it consists of an endless saw running over two pulleys affixed to strong frame, the top pulley being so arranged as to allow for expansion and contraction of saw during the working.

The pulleys are truly turned and balanced.

The table has an angle motion both ways for bevil cutting.

No.	1	size, with	48	inch	pulleys.	Power,	1	-horse.	Weight, 3 tons.
,,	2	,,	42	,,		,,	1	,,	,, $2\frac{1}{2}$,,
,,	3	,,	36	,,		,,	1	,,	,, 2 ,,
,,	4	,,	30	,,		,,	1	,,	,, $1\frac{3}{4}$,,
,,	5	,,	24	,,		,,	$\frac{1}{2}$	,,	,, $1\frac{1}{4}$,,

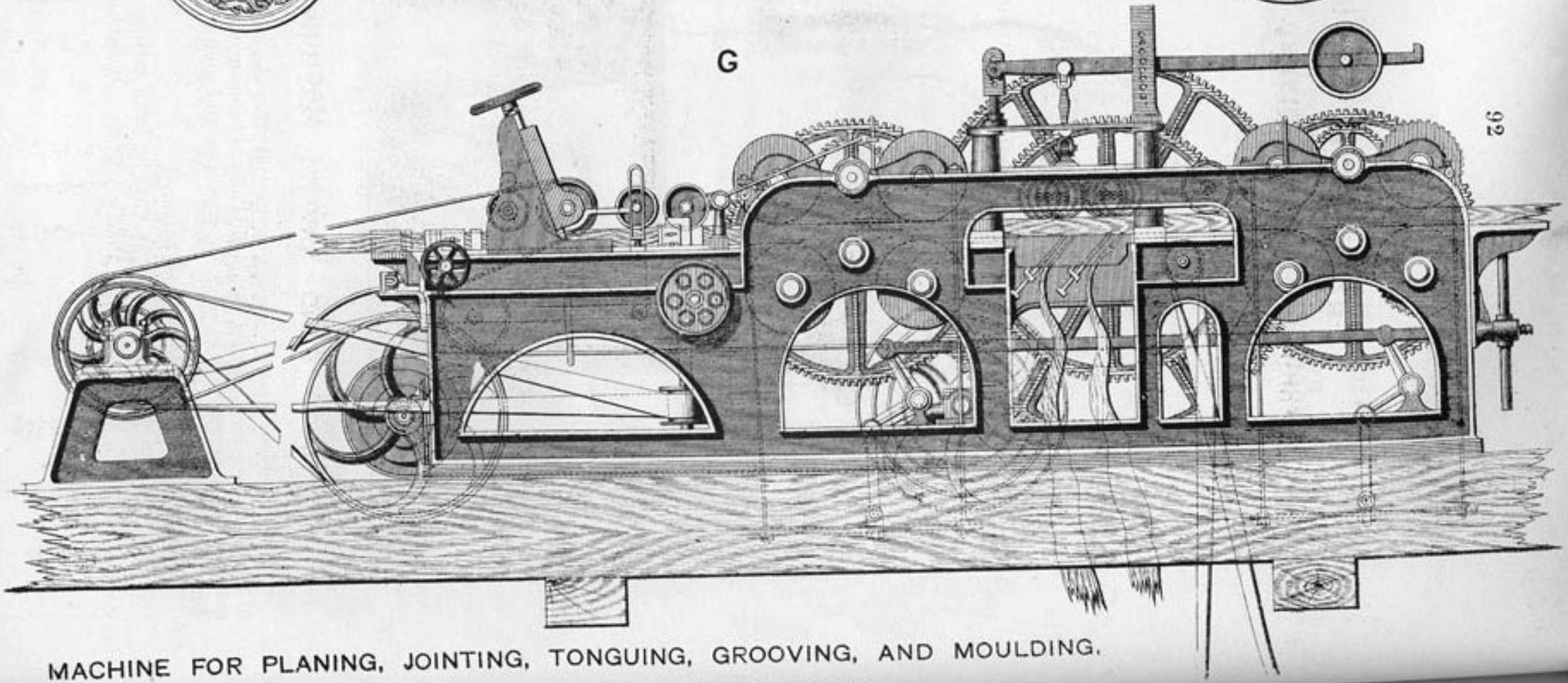
THOMAS ROBINSON & SON,

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD - CUTTING MACHINERY.

G



92

MACHINE FOR PLANING, JOINTING, TONGUING, GROOVING, AND MOULDING.

EITHER IN ONE COMPOUND OPERATION OR SINGLY.

G

MACHINE FOR PLANING, JOINTING, TONGUING, GROOVING, AND MOULDING,

EITHER IN ONE COMPOUND OPERATION OR SINGLY.

The Machine will plane, joint, tongue and groove, rebate, and thickness all kinds of timber, effecting all the processes either at one operation or each singly, at speeds of from 30 to 60 feet per minute.

The timber is fed through the Machine by means of eight calender rollers, and the four top ones are so arranged that they can all be raised or lowered together, for various thicknesses of timber, by the turning of a wheel at the end of the Machine.

The under side of the timber to be worked is planed by stationary cutters or irons fixed in a draw-box, which are easily taken out for sharpening.

A revolving cutter block is fixed before the stationary plane-box, for the purpose of taking off the rough surface of deals and foreign cut boards before coming to the plane irons.

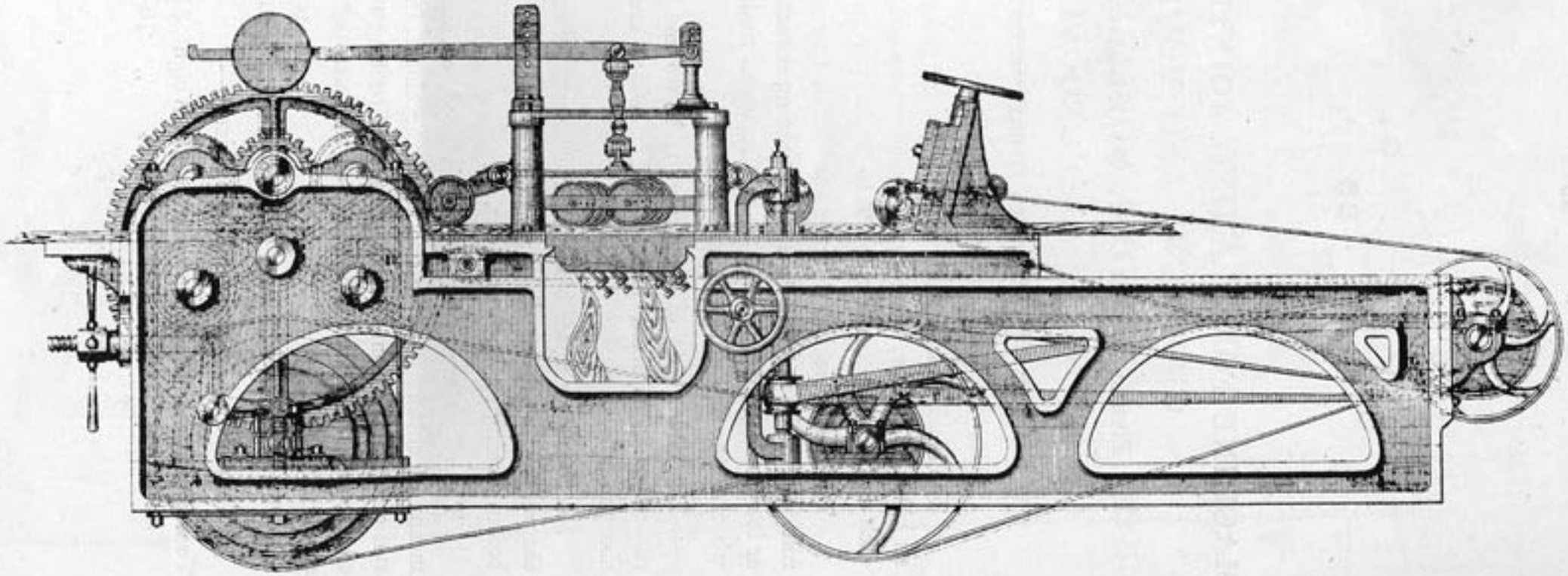
The edges are either jointed, rebated, or tongued and grooved, by means of cutters fixed in two revolving blocks, in advance of which are stationary plane irons, for the purpose of putting a smooth surface on the edges; and the timber is taken to a thickness by cutters attached to a revolving block.

This Machine will work large mouldings, spoutings, and skirtings.

They are made of the following sizes :—

To work any size of timber up to 5 × 12 Weight, 8½ tons. Power, 4-horse.
Do. do. 6 × 14 „ 10 „ „ 5 „

SS



MACHINE FOR PLANING, MOULDING, JOINTING, TONGUING, AND GROOVING,

EITHER IN ONE COMPOUND OPERATION OR SINGLY.

SS

MACHINE FOR PLANING, MOULDING, JOINTING, TONGUING, AND GROOVING,

EITHER IN ONE COMPOUND OPERATION OR SINGLY.

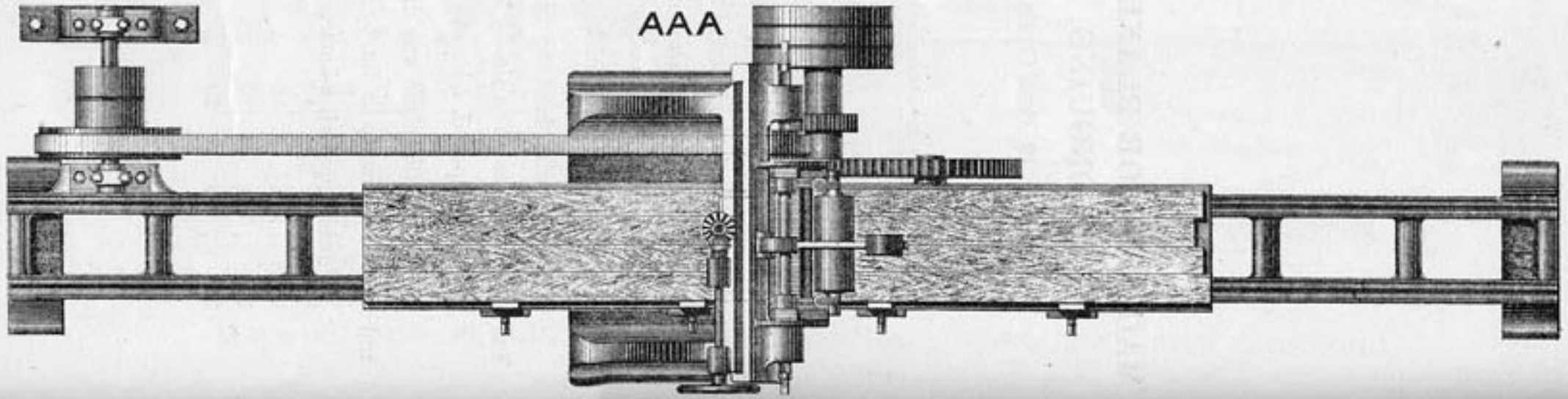
This Machine is a combination of those represented by Drawings G and K, it having all the appliances for moulding exactly the same as Drawing K, with the addition of the stationary planing irons for floor and other boards, the same as Drawing G, but with only half the number of feed rollers shown in Drawing G, as it is not intended to plane by stationary irons anything thicker than flooring boards.

No. 1 size will plane any dimension of timber up to 1½in. by 12in., and mould any size up to 4in. by 12in. Rate of feed 4 to 35 feet per minute.

Power required, 4-horse. Weight, 6 tons.

No. 2 size will plane any dimension of timber up to 1½in. by 9in., and mould any size up to 3in. by 9in. Rate of feed 4 to 30 feet per minute.

Power required, 3-horse. Weight, 4 tons.



PLANING AND TRYING-UP MACHINE.

AAA

PLANING AND TRYING-UP MACHINE.

These Machines are made for Planing and Trying-up scantlings of wood, by means of a horizontal cutter block operating on the timber placed on a travelling table.

Power required for driving, 2 to 3 horse-power.

All Machines plane any thickness up to 15 inches, and the following lengths and widths:—

No. 1. Planes 15in. wide.	No. 2. Planes 18in. wide.	No. 3. Planes 20in. wide.	No. 4. Planes 24in. wide.
7ft. long, ¾ ton.	7ft. long, 1 ton.	7ft. long, 1¼ tons.	7ft. long, 1½ tons.
8 „ 1 „	8 „ 1¼ „	8 „ 1½ „	8 „ 1¾ „
9 „ 1¼ „	9 „ 1¾ „	9 „ 1¾ „	9 „ 2 „
10 „ 1½ „	10 „ 2 „	10 „ 2¼ „	10 „ 2½ „
12 „ 1¾ „	12 „ 2¼ „	12 „ 2½ „	12 „ 3 „
15 „ 2 „	15 „ 2½ „	15 „ 2¾ „	15 „ 4 „
16 „ 3 „	16 „ 3½ „	16 „ 4 „	16 „ 5 „
18 „ 3½ „	18 „ 4 „	18 „ 4½ „	18 „ 6 „
20 „ 4 „	20 „ 5 „	20 „ 5½ „	20 „ 7 „
25 „ 5 „	25 „ 6 „	25 „ 6½ „	25 „ 8 „

THOMAS ROBINSON & SON,

ROCHDALE;

MAKERS OF ALL DESCRIPTIONS OF

WOOD-CUTTING MACHINERY.

E

PLANING AND TRYING-UP MACHINE.

E

PLANING AND TRYING-UP MACHINE.

This Machine is for planing and squaring up timber for the framing of sashes, doors, railway carriage work, and all descriptions of framework, in such a manner that any warp, twist, or irregularity in the timber is removed, and the surfaces left perfectly true; it is then ready for the grooving, morticing, and tenoning. The timber is placed on a truly planed travelling bed of cast iron, on which it is fastened sideways with a number of cramps, and is worked either way as required. A revolving disc fitted with cutters is placed in a vertical sliding carriage over the table, and, working at a great speed, operates on the timber as it passes underneath. The disc and cutters can be raised to the required height from the table, by means of wheels and screw worked by a handle.

The No. 1 and 2 sizes of Machine have one side pillar for carrying the cutter disc and pulley.

There is a saving of five-sixths of the usual labour by employing this Machine for planing up door frames, sash stuff, and framing for railway carriage work.

Power required for driving, 2 to 3 horse-power.

All Machines plane any thickness up to 15 inches, and the following lengths and widths:—

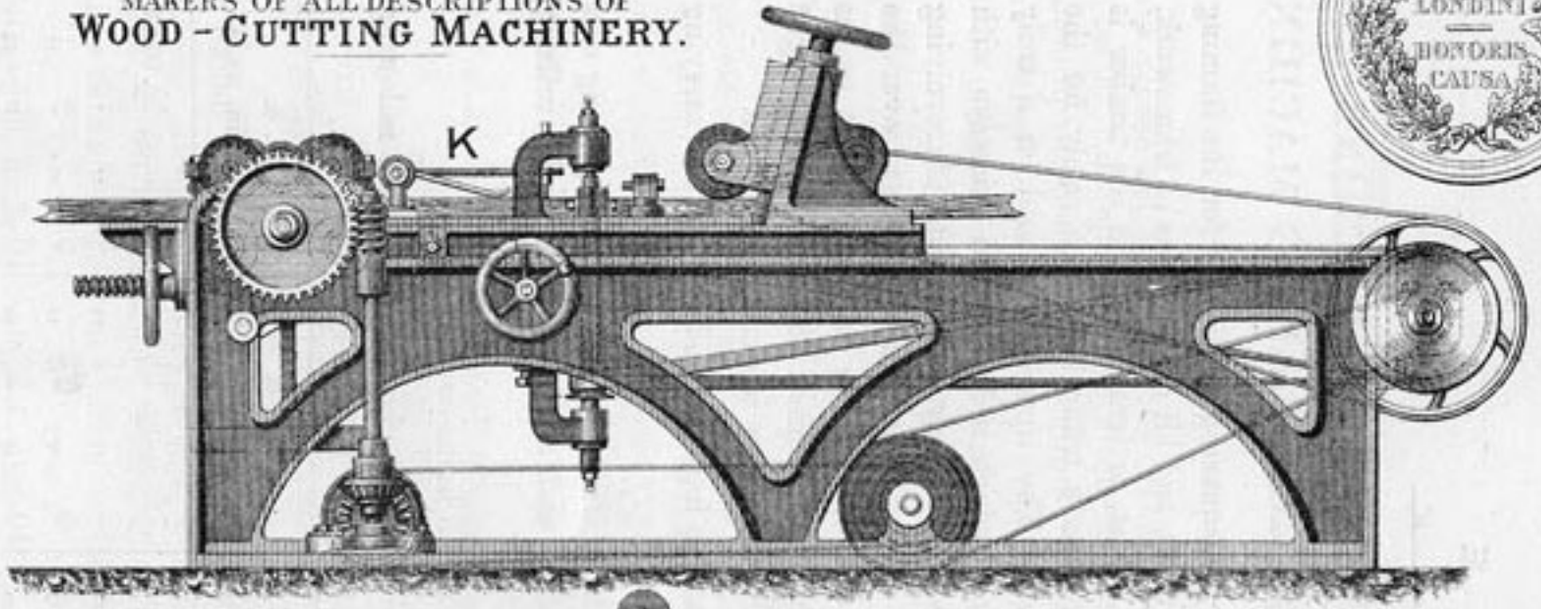
No. 1. Planes 15in. wide.	No. 2. Planes 18in. wide.	No. 3. Planes 20in. wide.	No. 4. Planes 24in. wide.
7ft. long, $\frac{3}{4}$ ton.	7ft. long, 1 ton.	7ft. long, $1\frac{1}{4}$ tons.	7ft. long, $1\frac{1}{2}$ tons.
8 „ 1 „	8 „ $1\frac{1}{4}$ „	8 „ $1\frac{1}{2}$ „	8 „ $1\frac{3}{4}$ „
9 „ $1\frac{1}{4}$ „	9 „ $1\frac{3}{4}$ „	9 „ $1\frac{3}{4}$ „	9 „ 2 „
10 „ $1\frac{1}{2}$ „	10 „ 2 „	10 „ $2\frac{1}{4}$ „	10 „ $2\frac{1}{2}$ „
12 „ $1\frac{3}{4}$ „	12 „ $2\frac{1}{4}$ „	12 „ $2\frac{1}{2}$ „	12 „ 3 „
15 „ 2 „	15 „ $2\frac{1}{2}$ „	15 „ $2\frac{3}{4}$ „	15 „ 4 „
16 „ 3 „	16 „ $3\frac{1}{2}$ „	16 „ 4 „	16 „ 5 „
18 „ $3\frac{1}{2}$ „	18 „ 4 „	18 „ $4\frac{1}{2}$ „	18 „ 6 „
20 „ 4 „	20 „ 5 „	20 „ $5\frac{1}{2}$ „	20 „ 7 „
25 „ 5 „	25 „ 6 „	25 „ $6\frac{1}{2}$ „	25 „ 8 „

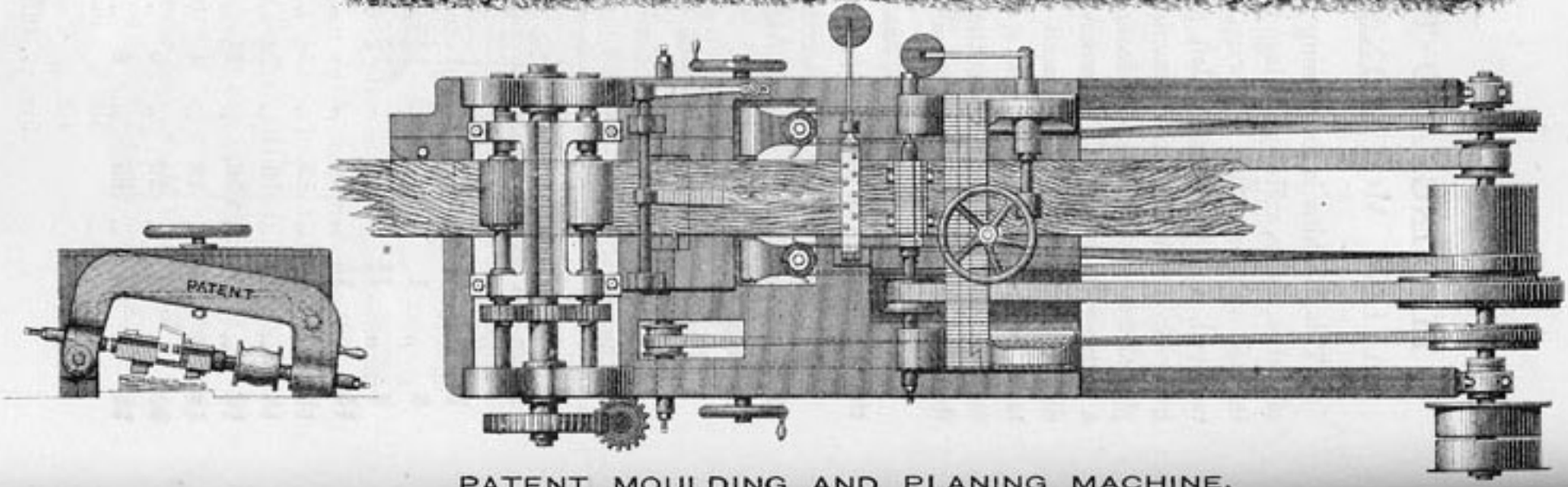
THOMAS ROBINSON & SON,

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD - CUTTING MACHINERY.





PATENT MOULDING AND PLANING MACHINE.

K

PATENT MOULDING AND PLANING MACHINE.

In the Moulding Machines hitherto supplied there has always been found a difficulty in giving a smooth finish to mouldings that varied in thickness, as the cutters working the thin part of the moulding projected so far beyond the block to which they are affixed as to spring, and thereby cause a ridgy appearance on the mould. The invention of the angle block, as shown in part A on the accompanying drawing, completely remedies this, as, with rare exceptions, it enables the cutters to be always at one length.

The arrangement is also of that nature that it can be put to any Machine we have previously made.

There are also in this Machine several other improvements, amongst which the feed speeds are so arranged as to give much longer belts.

We have also determined to supply these improved Machines without any additional charge over those previously made.

The general arrangement and mode of working the Machine is as follows :—

The timber is fed by four calender rollers, motion to which is transmitted by worm and wheel.

The two upper rollers are made to rise and fall in curved guides, struck from the centre of the geared wheel by which they are driven, so that the wheels always work the same depth in gear, no matter what thickness of timber is passing through.

The action of moulding or planing the timber is done on all its surfaces at once, by means of four sets of revolving blocks, carrying cutters of the shape required; the bearings of these blocks are peculiarly arranged to run at great speeds without getting any play, by which means the mouldings are cut with great accuracy.

Boards are planed in this Machine by placing plain or straight cutters to the top and bottom blocks, and edged or tongued and grooved according to the cutters affixed to the side blocks.

Both mouldings and boards are fed through the Machine at the rate of from 10 to 30 feet per minute.

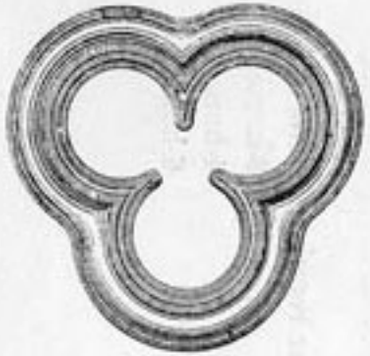
Weight of Machine to work timber of

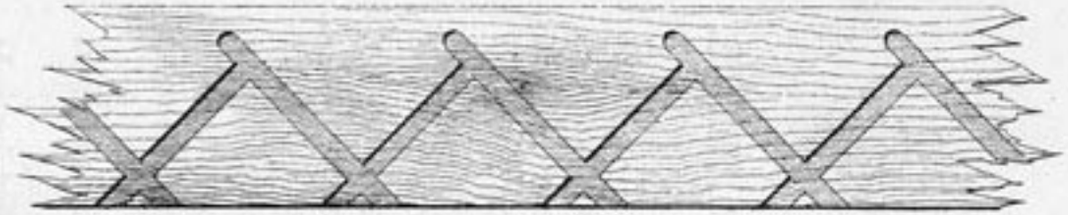
Any size up to	2in. by	5in...2 tons...	Power required,	2-horse.
,,	3in. ,,	9in...2½ ,, ...	,,	3-horse.
,,	4in. ,,	12in...4½ ,, ...	,,	4-horse.
,,	5in. ,,	16in...5½ ,, ...	,,	6-horse.

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD-CUTTING MACHINERY.





II

MOULDING MACHINE, FOR CIRCLES AND IRREGULAR SHAPES.

11

MOULDING MACHINE FOR CIRCLES AND IRREGULAR SHAPES.

Trenching and Cutting in Housings for Stairs Steps.

This Machine is for moulding wood of any irregular shape, such as circular heads of sashes, hand rails, table edges, and various things in joinery and cabinet work, including trenching and cutting in housings for stairs steps.

It consists of a strong iron frame with planed top, in which is placed an upright spindle, on a movable slide which carries a double-edged cutter above the table. Also above the table another vertical cutter spindle, which is made to travel on a slide, as shown.

The cutter is made to revolve in either direction, to suit the grain of the wood.

The timber is moulded by being pressed against the cutter, and the moulding or cutting is kept to a uniform depth by means of a washer over the cutter acting as a fence or guide to the patterns of wood being moulded.

Power required, ½-horse. Weight, 1 ton.

THOMAS ROBINSON & SON,
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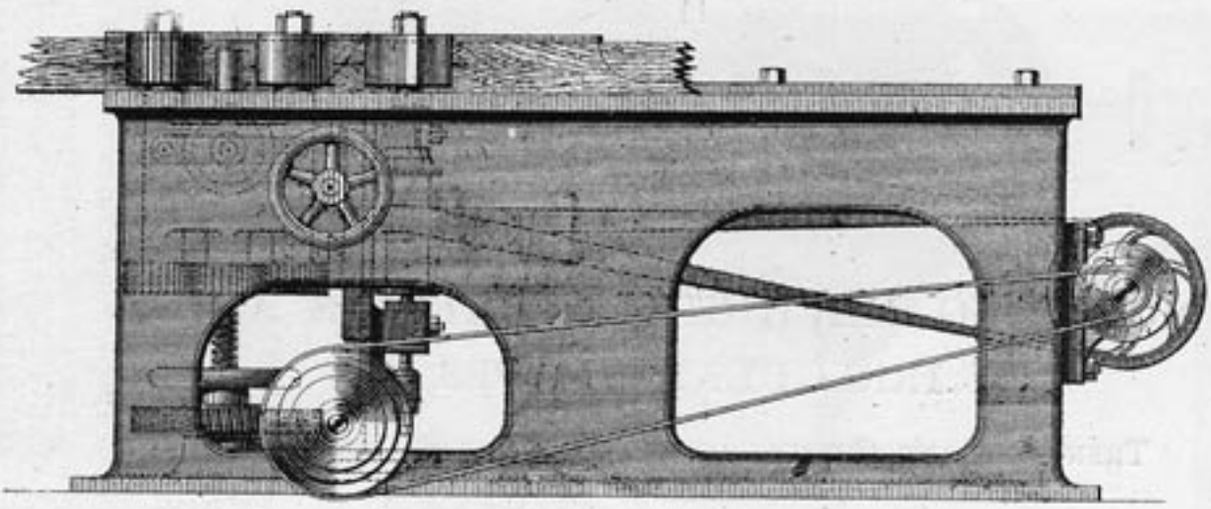
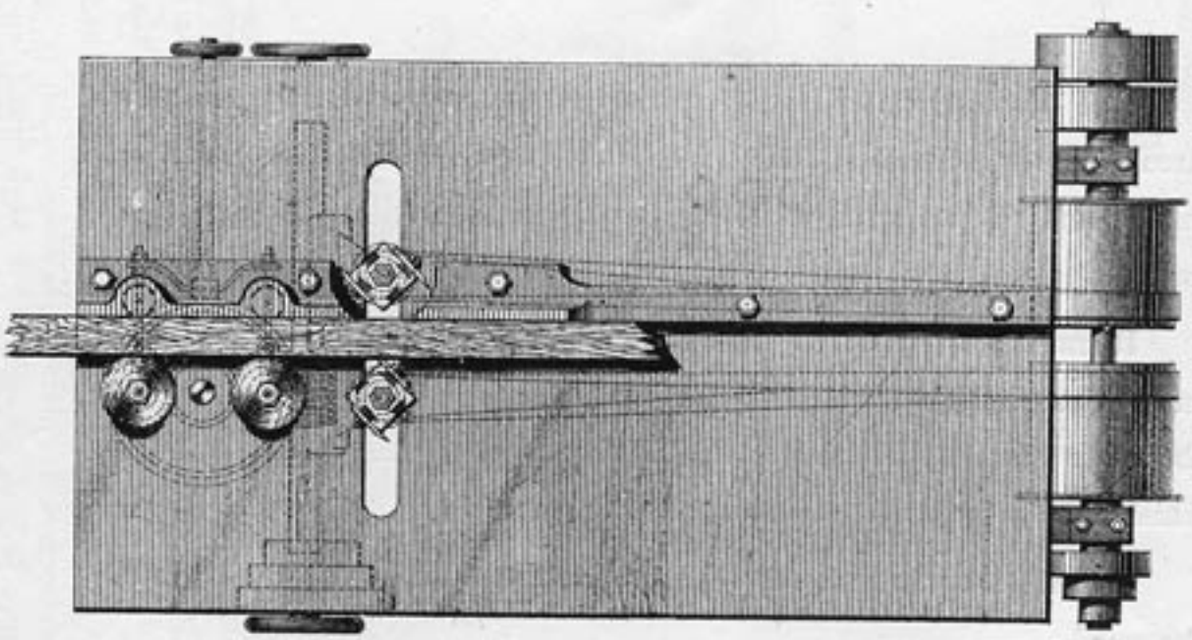
MAKERS OF ALL DESCRIPTIONS OF
WOOD-CUTTING MACHINERY.

QQQ





MOULDING MACHINE, FOR STRAIGHT AND CIRCULAR-SHAPED MOULDINGS.

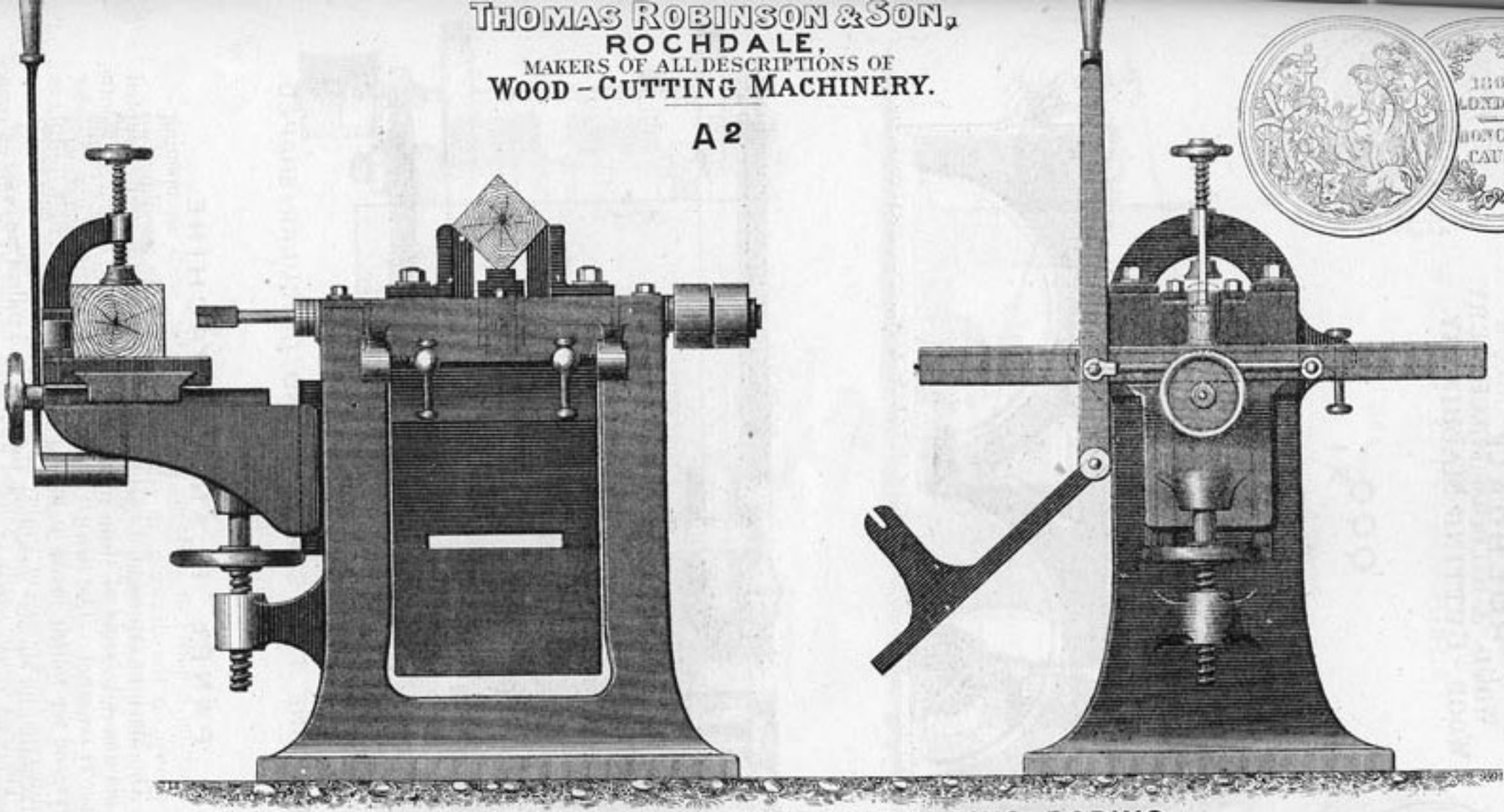
This Machine consists of a strong cast-iron table, with an opening across, as shown on the drawing, in which is fixed a slide, carrying two spindles with cutter blocks, each of which can be traversed on the slide by screw and wheel, to regulate them to any required distance for straight mouldings. The timber is fed with calender rollers. This operation is exceedingly good for working Sash Bars, and articles of a similar character.

When required for circular moulding, the fence and rollers are removed, and a guard placed to the cutter blocks, which are arranged to revolve in different directions, so as to suit the different grains of wood.

Weight, 1 ton.

Power required, 1-horse.

A 2



COMBINED PLANING, SHAPING, CHAMFERING, BORING AND MORTICING MACHINE.

This Machine is exceedingly useful for joiners' and other similar shops, where there is a quantity of timber of different sizes to plane or try up, which is done by passing the timber over the table through which the cutters project, running at a high speed, and so gives a perfectly smooth surface to the board.

When not employed for planing the table can be turned over and used for chamfering straight or irregular pieces. This Machine is also supplied with a complete arrangement for morticing and boring.

Weight, 10 cwt. Power, ½-horse.

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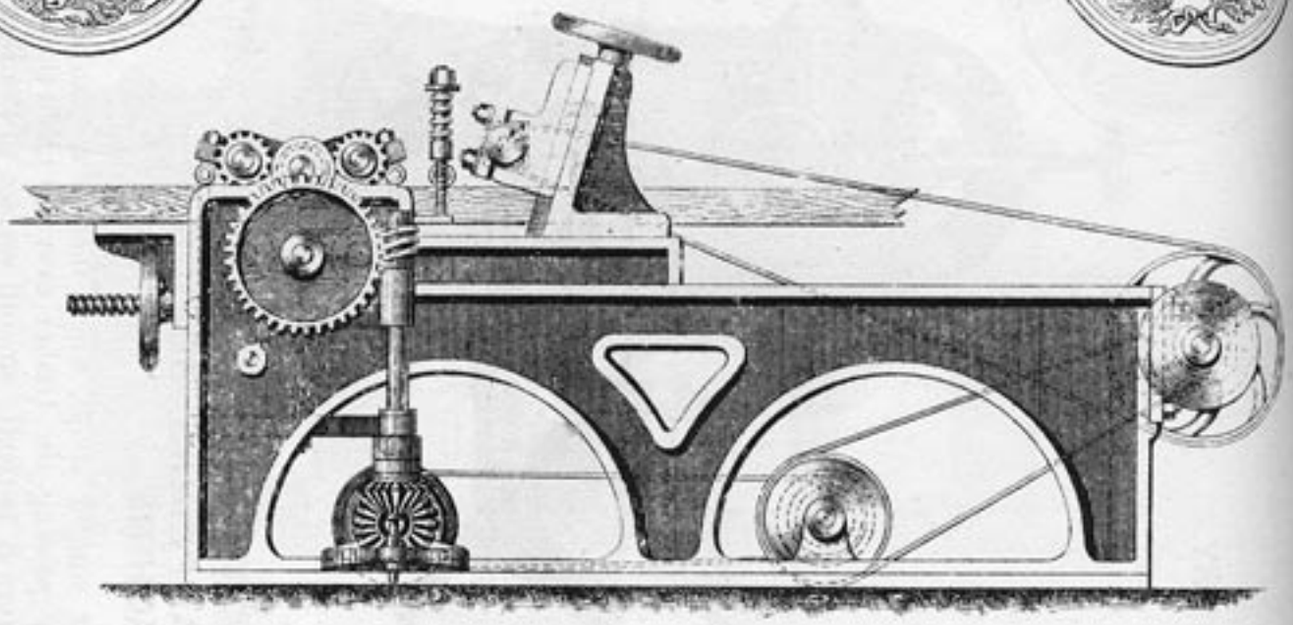
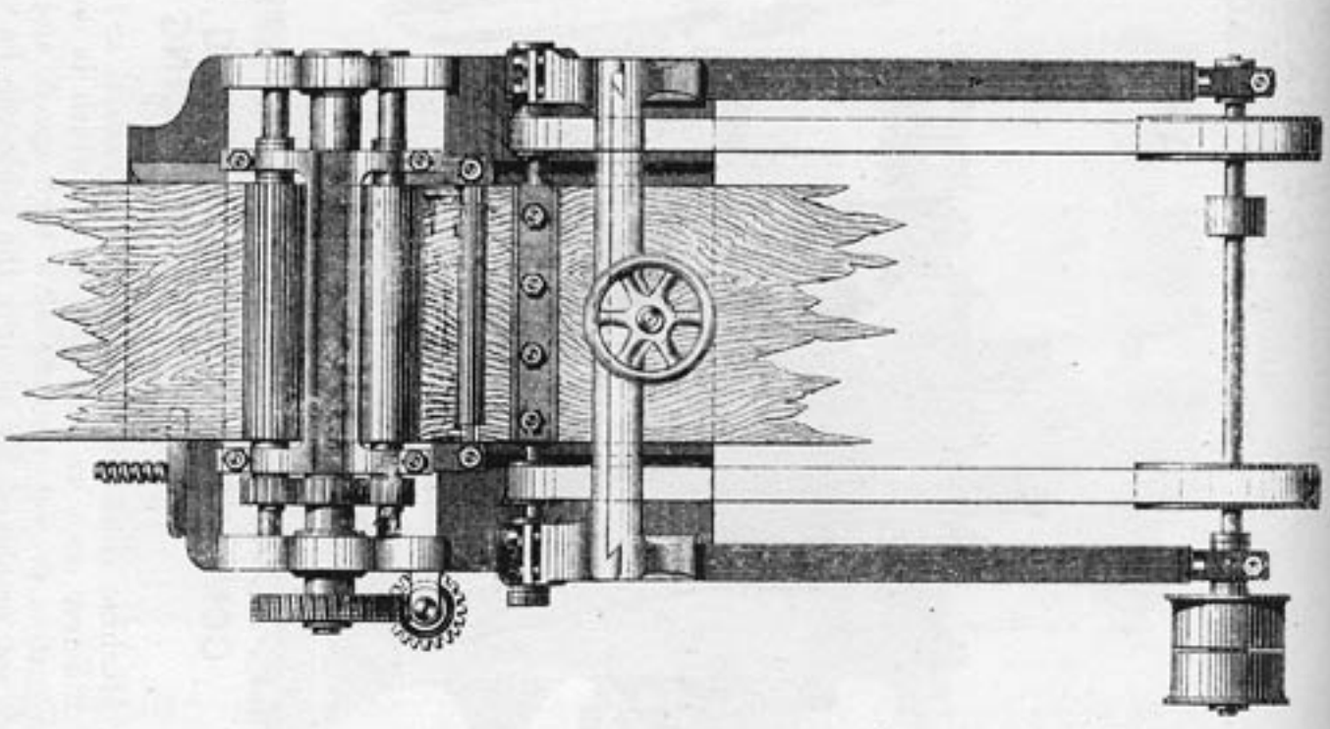
MAKERS OF ALL DESCRIPTIONS OF

WOOD-CUTTING MACHINERY.

X1





PANEL PLANING MACHINE.

The Machine represented in the above Drawing is specially adapted for planing all kinds of thin boards and panels on which a smooth surface is required. The timber is fed by means of four large calender rollers, the top rollers being so arranged as to rise and fall according to the different thicknesses of timber to be worked.

The feed can be easily changed from slow to fast by means of cone pulleys.

Power, 1-horse.

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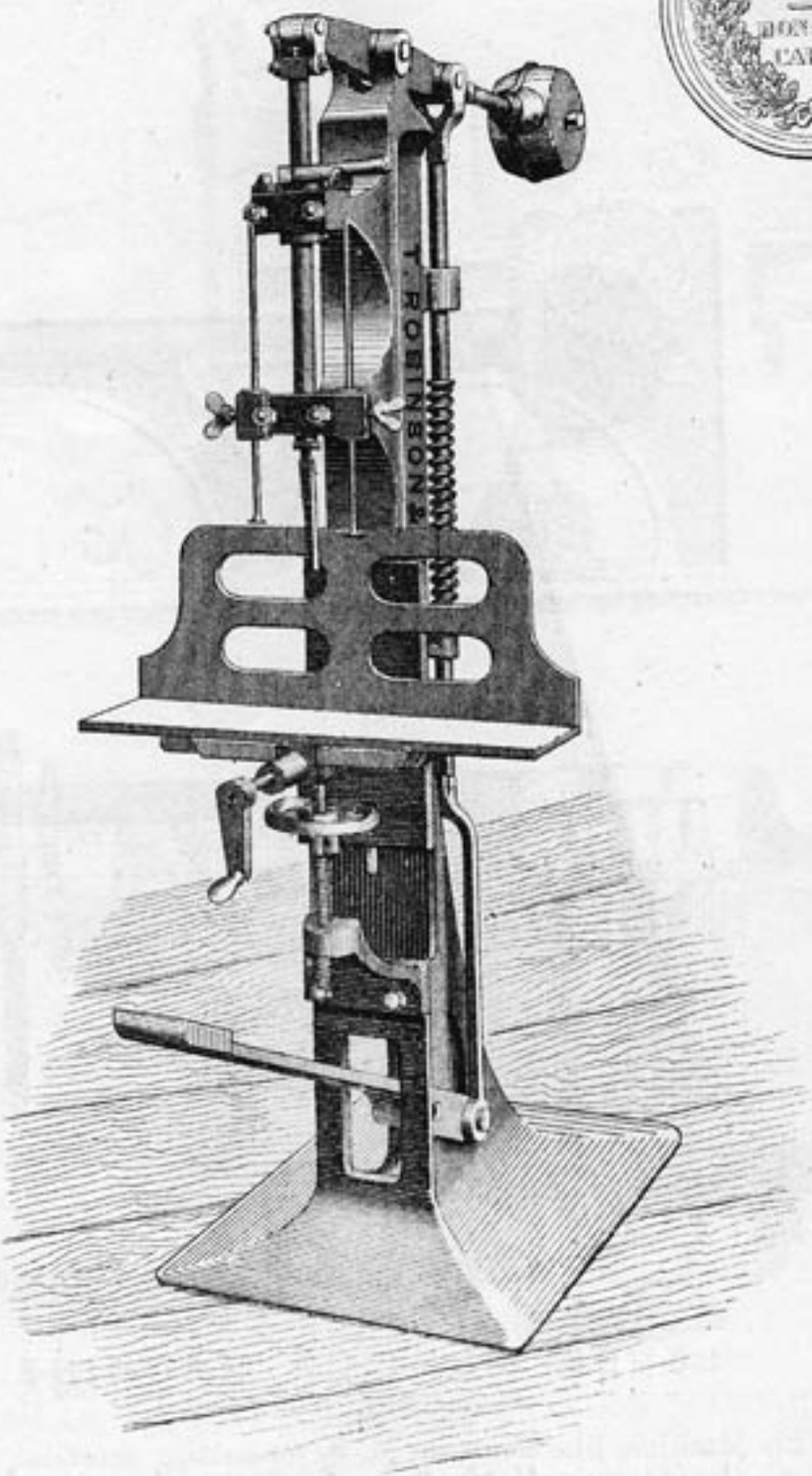
WOOD-CUTTING MACHINERY.

M



FOOT MORTICE MACHINE.

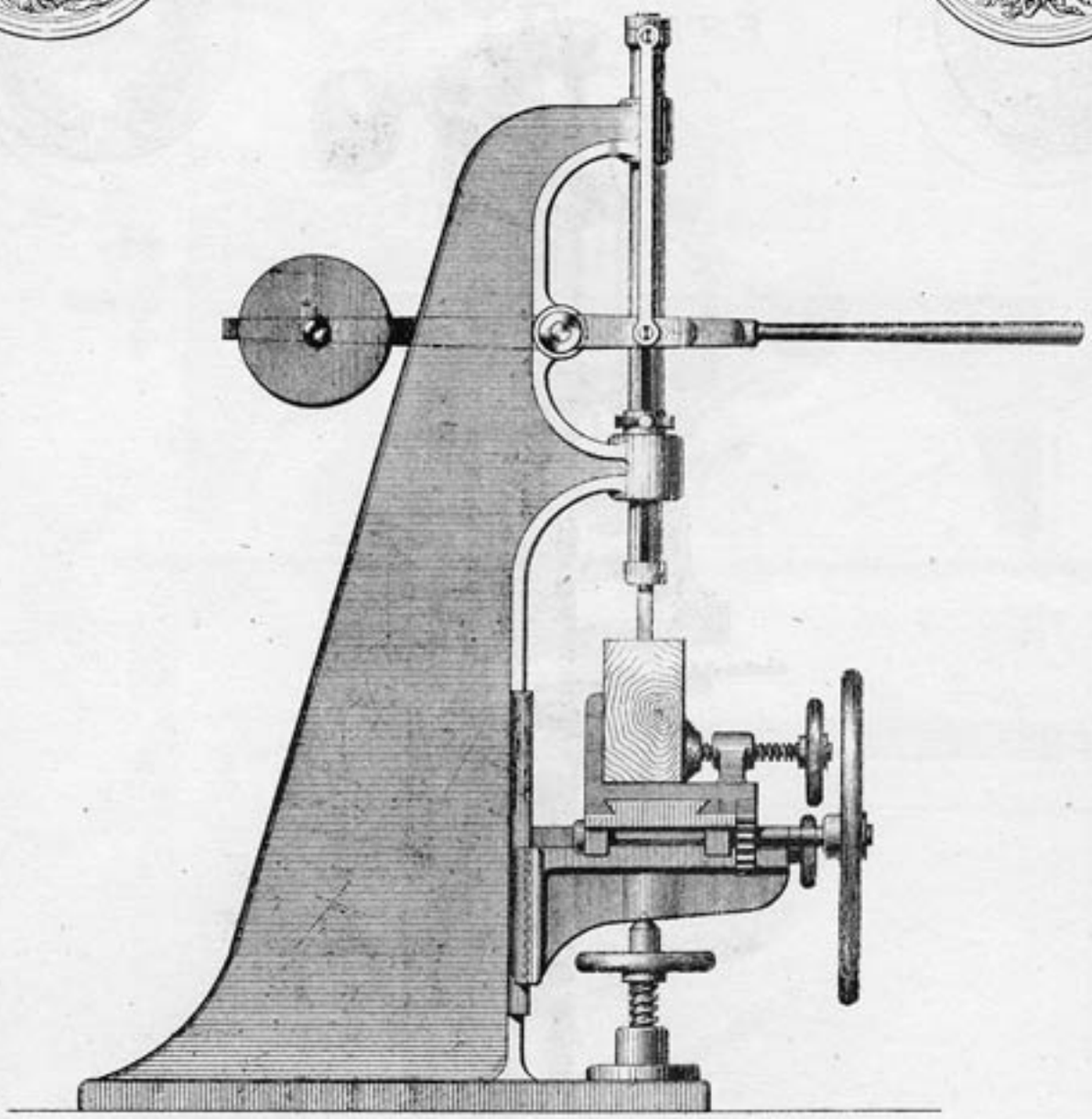
The Mortices are cut by bringing down the chisel into the timber by a lever; motion to which is given by the workman's foot.

For cutting light mortices of door and sash framing, or other similar work, the timber to be morticed is held to the fence by the hands and moved as required, the chisel being made to cut the mortice by a foot treadle. Two light adjustable stops are attached, to prevent the timber rising in the the withdrawal of the chisel.

The machine will cut mortices of any size up to 1 inch by 8 inches.

Weight 10 cwt

S



LEVER MORTICE MACHINE.

This Machine, like Drawing M, is for cutting mortices, but instead of having the chisel worked by a foot treadle, it is fitted with a hand lever, which, with the Machine being also proportionably stronger, makes it more powerful in its operations.

The table for carrying the timber is fitted with a compound slide and a pinching screw, for holding and moving to any position the timber whilst being morticed. It can be easily raised or lowered by the wheel and screw under.

Weight, 10 cwt.

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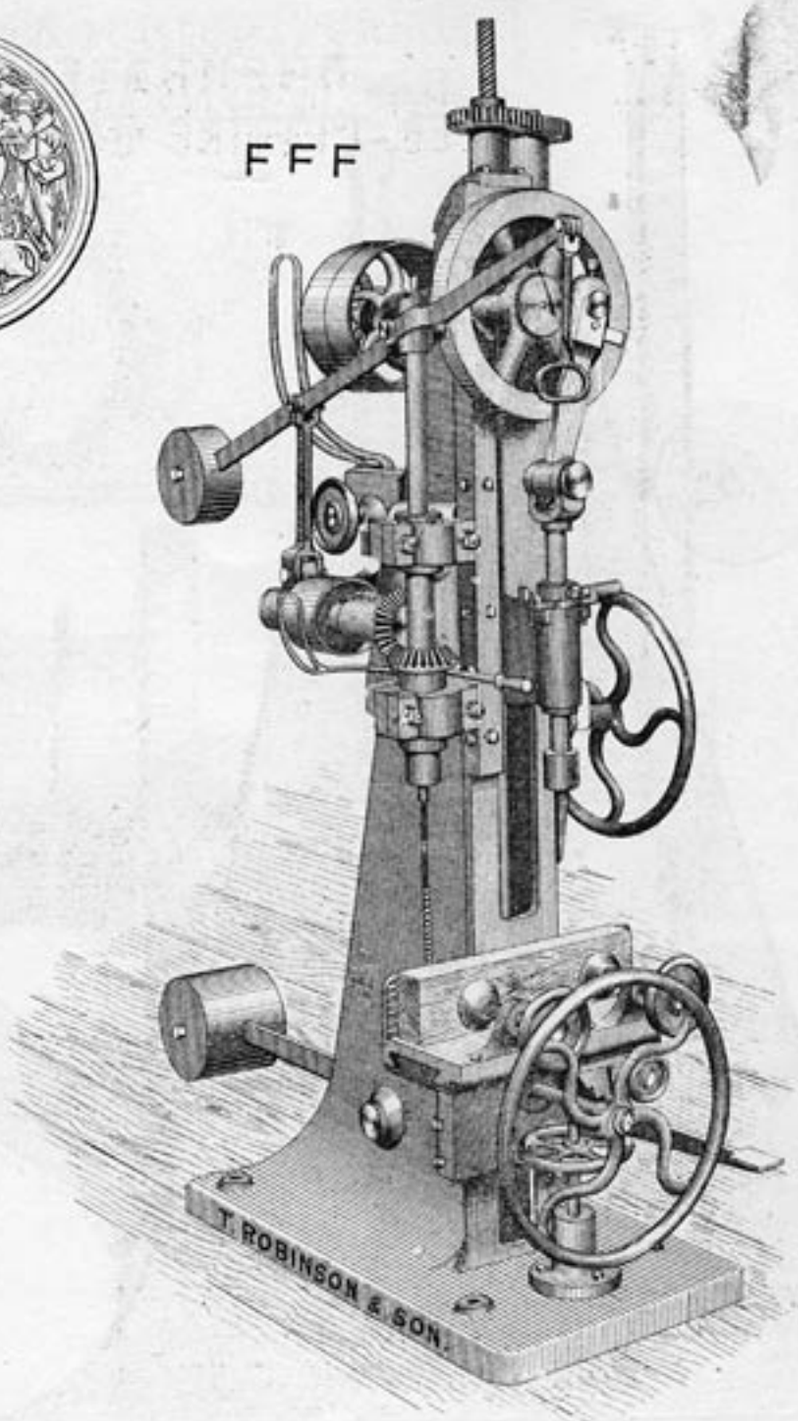


SMALL POWER MORTICING AND BORING MACHINE.

This Machine is particularly arranged for Joiners' and other work of a similar character.

The driving shaft of the chisel, and the flywheel and pulleys, are fixed in a sliding carriage, which can be brought down to any required depth by foot lever or by means of a screw, worked by a bevil and hand wheels, as shown.

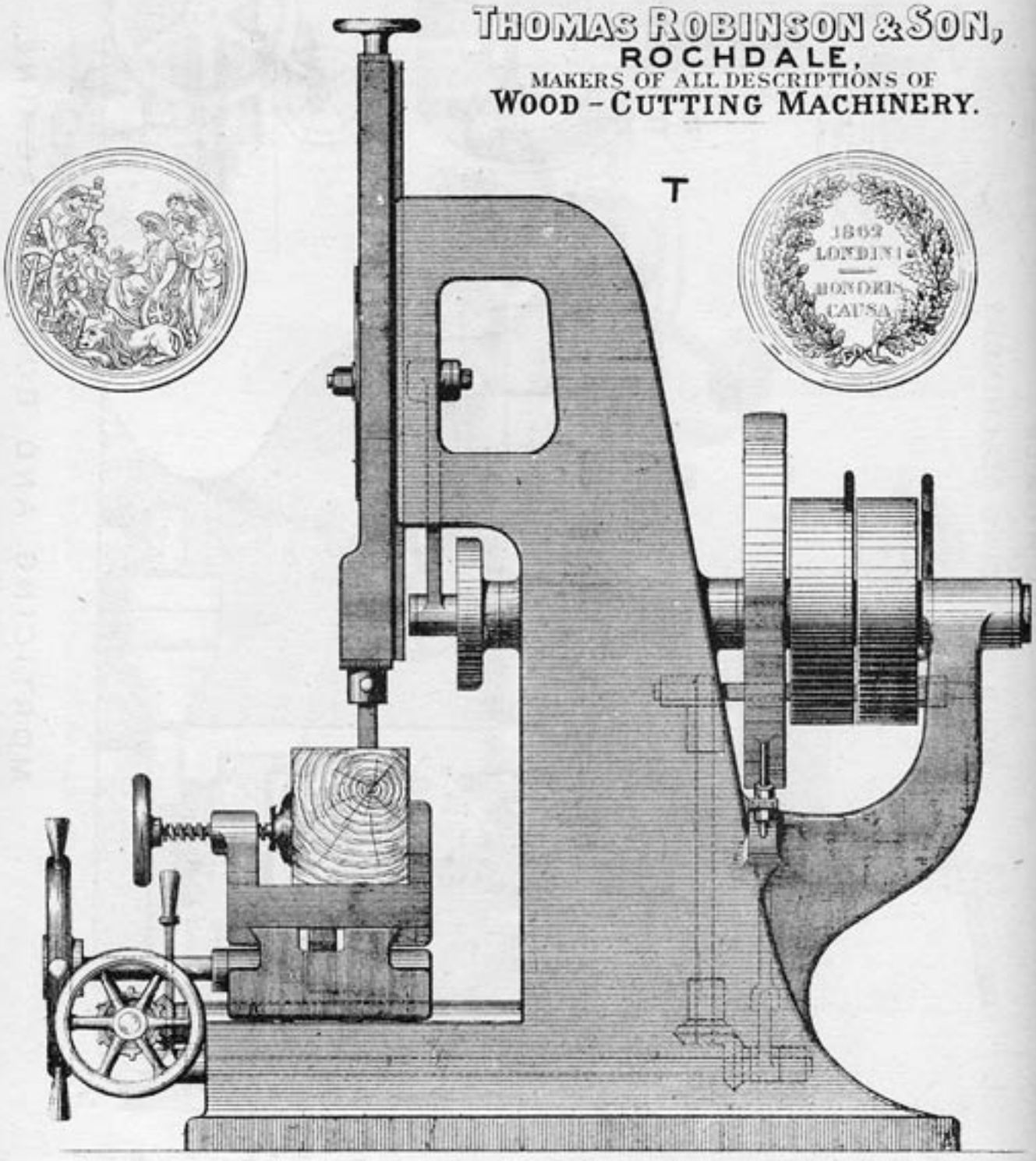
A Boring apparatus can be attached to the side of this Machine, as shown on the above drawing, if required.

It is fitted with strong sliding bed for the timber.

No. 1 size, to cut mortices any size up to 1½in. thick and 12in. deep.
Power required, 1-horse. Weight, 1½-tons.

No. 2 size, to cut mortices any size up to 1in. thick and 11in. deep.
Power required, ½-horse. Weight, 1 ton 5 cwt.

(For price, see Price List).



POWER MORTICING MACHINE.

This Machine has a vertical sliding tool holder, in which is placed the chisel, having hand wheel and screw at the top, for altering the depth of chisel.

They are made of two sizes :—

No. 1, to cut mortices any size up to 2 inches thick and 14 inches deep.

Weight, 2 tons. Power, 1½ horse.

No. 2, to cut mortices any size up to 1 inch thick and 11 inches deep.

Weight, 1 ton 10 cwt. Power, 1-horse.

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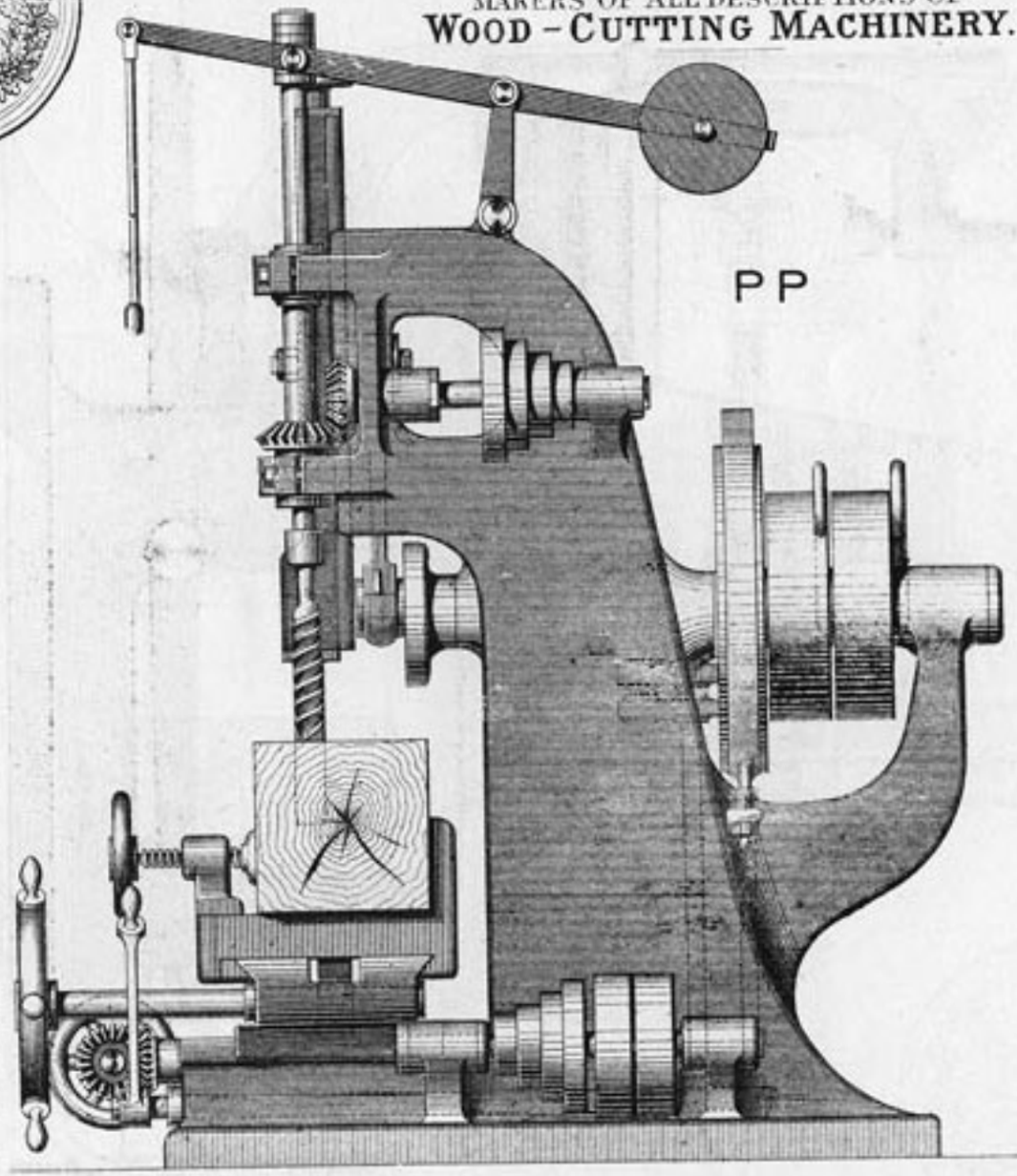
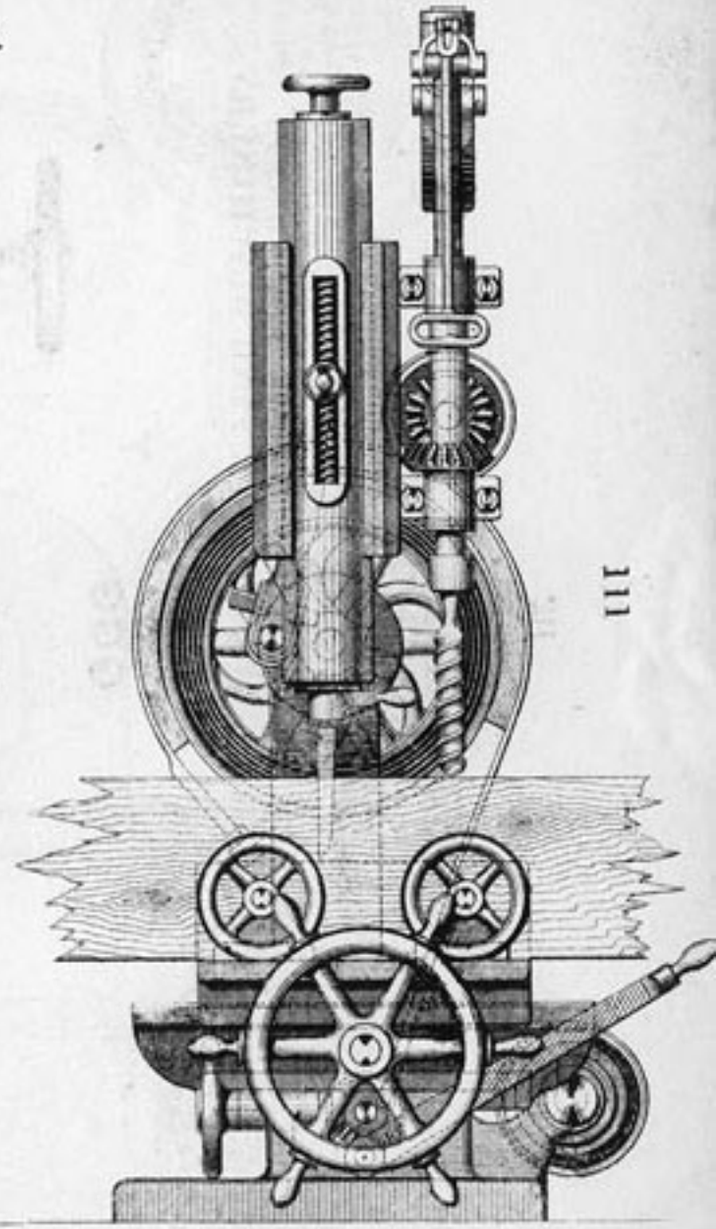
WOOD-CUTTING MACHINERY.

PP





111

This Machine is a combination of those shown in Drawings T and X, it being found, after trials in many other ways, that the most speedy and efficient mode of morticing hard wood is by first boring a few holes, and then clearing out with the mortice chisel.

It has also the advantage of being able to be used separately, as either Mortice or Boring Machine.

For railway carriage and wagon building, or any other heavy description of work, it is a very useful tool.

It is made of two sizes :—

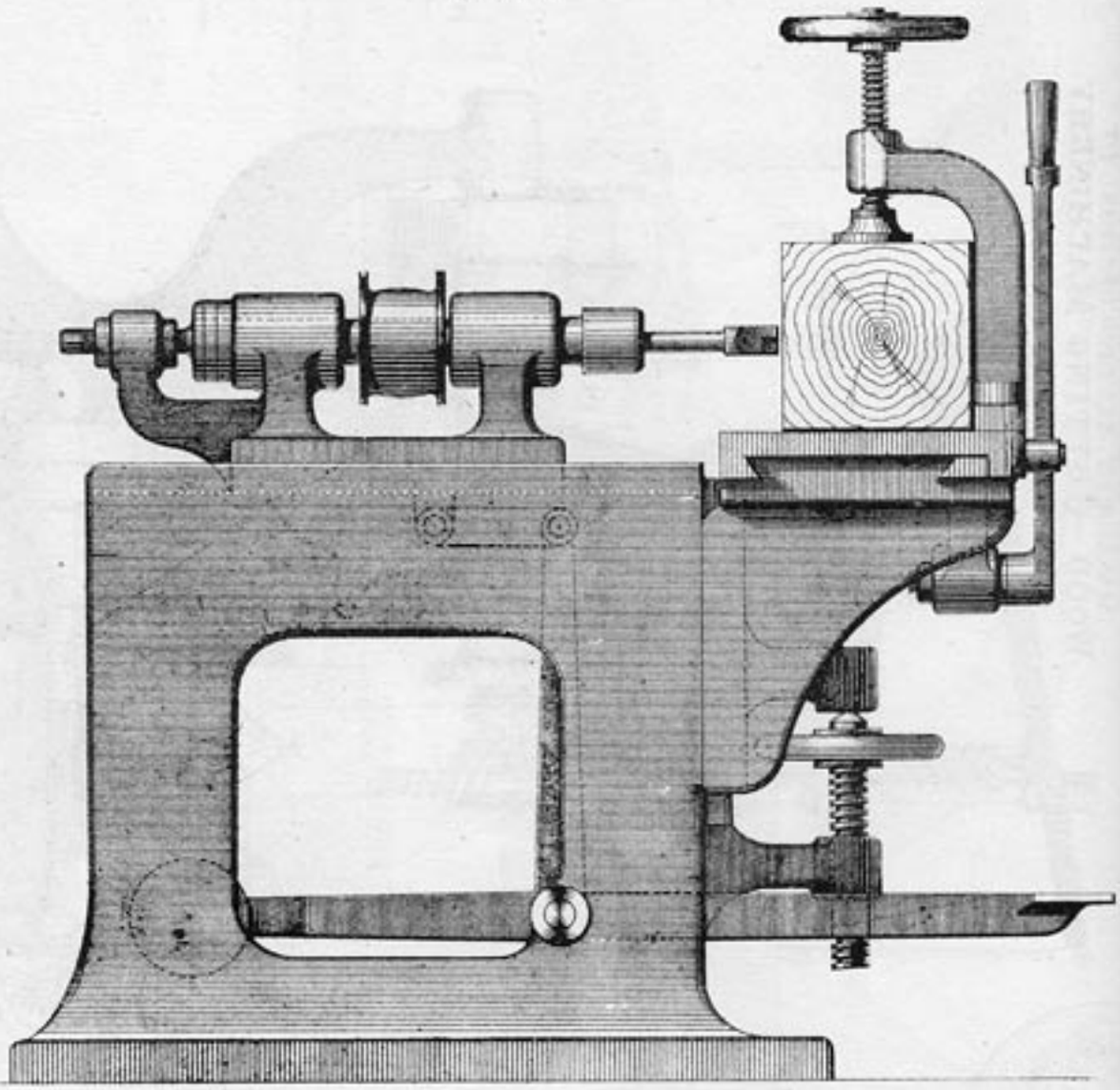
No. 1, to cut mortices of any size up to 3 inches thick and 14 inches deep, and bore holes 3 inches diameter and 16 inches deep. Weight, 3 tons. Power required, 1½-horse.

No. 2, to cut mortices of any size up to 1½ inches thick, and 10 inches deep, and bore holes 2 inches diameter and 12 inches deep. Weight, 1½ tons. Power required, 1-horse.

No. 3, to cut mortices of any size up to 1¼ inches thick, and 9 inches deep, and bore holes 1½ inches diameter and 10 inches deep. Weight, 1 ton 5 cwt. Power required, 1-horse.

MORTICING AND BORING MACHINE.

GGG



HORIZONTAL BORING AND SLOT-MORTICING MACHINE.

This is a very useful Machine for Joiners and Cabinet Makers. The boring tool is fixed in a small sliding headstock, which is drawn up to the work by a foot lever.

The slotting for mortices is done by moving the upright handle to and fro the required distance, which is regulated by movable stops.

Weight, 10 cwt. Power required, ¼-horse.

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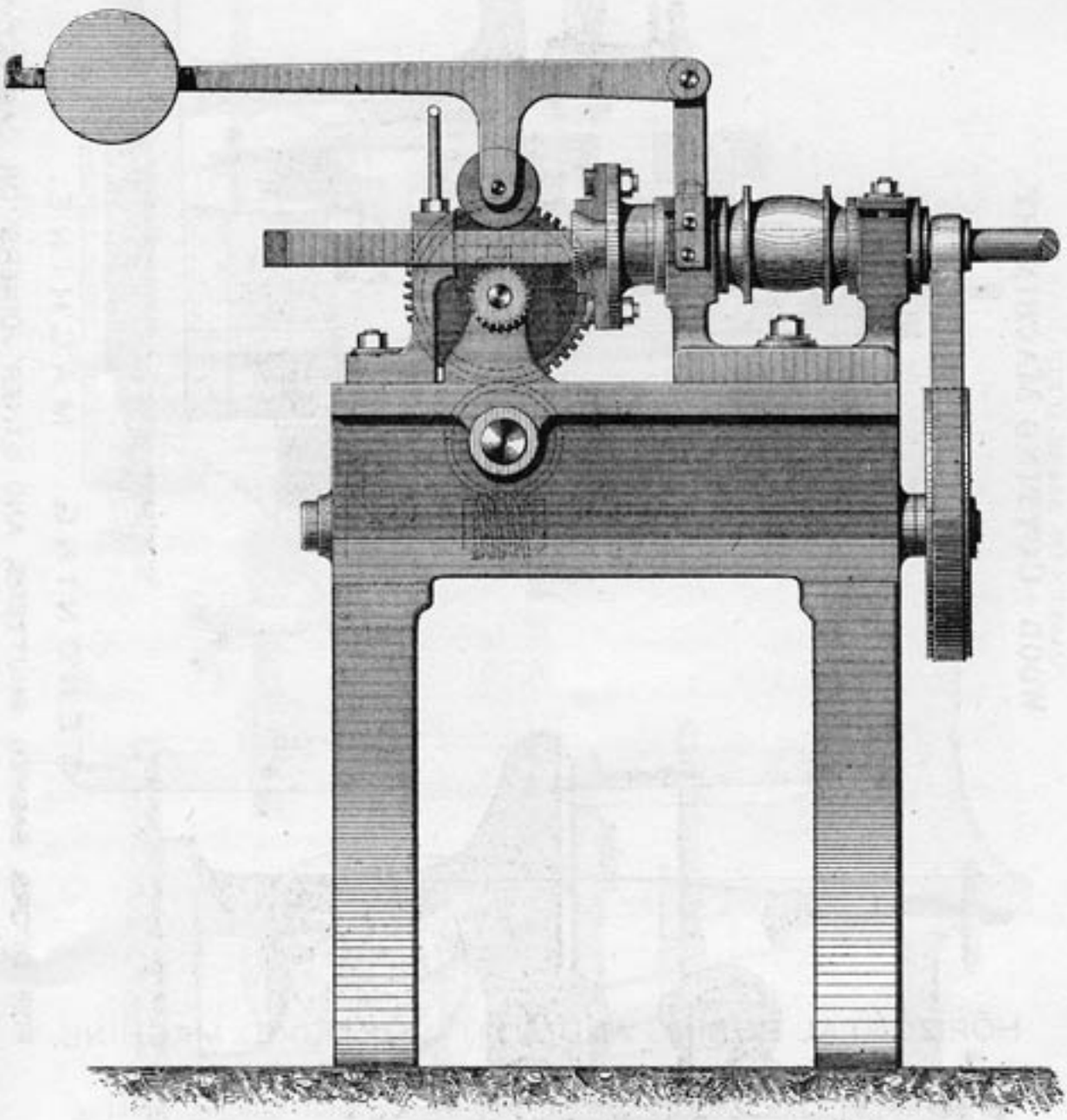
WOOD-CUTTING MACHINERY.

E 1



SELF-ACTING MACHINE FOR ROUNDING BEADS, BRUSH HANDLES, &c.

No. 1 size, to round 2½in., 2in., and 1½in.
No. 2 size, to round 1½in., 1in., and ¾in.

Weight, 15 cwt. Power, ½ horse.

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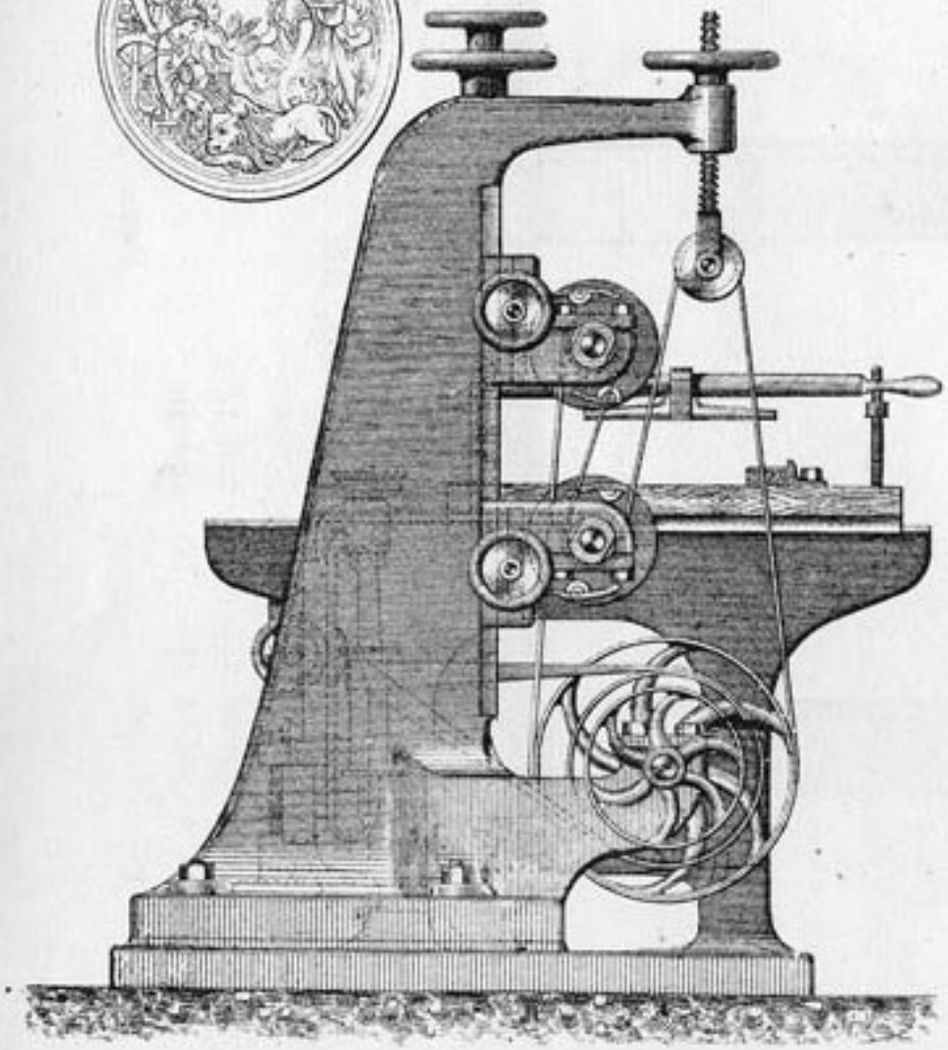

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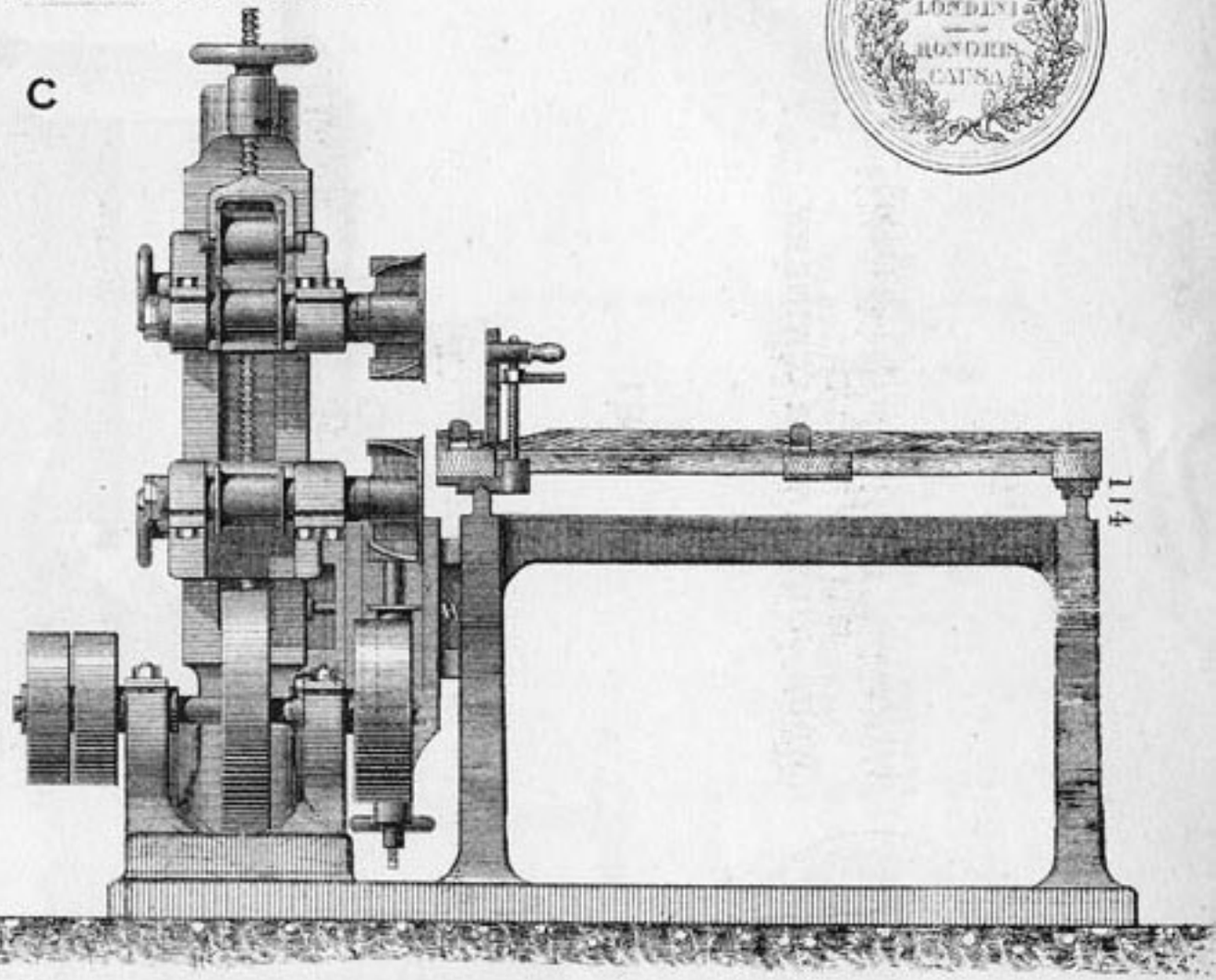


114

TENONING MACHINE,

FOR DOORS, SASHES, SHUTTERS, AND OTHER JOINERS' OR CABINET WORK.

C

TENONING MACHINE,

FOR DOORS, SASHES, SHUTTERS, AND OTHER JOINERS' OR CABINET WORK.

The timber to be tenoned is placed against a guide, on a light movable carriage, and held fast by a small lever; it is then passed between two cutter heads revolving at great speed, and mounted with cutters of a peculiar construction, by which means the tenon is cut at one operation; the cutter heads are adjustable for various sizes; the sliding carriage is so arranged that the timber requires no setting out; the Machine is fitted with apparatus for scribing sashwork at the same operation as the tenoning.

The Machine is also fitted with a block for the purpose of trenching sash sills, heads, or any other similar work.

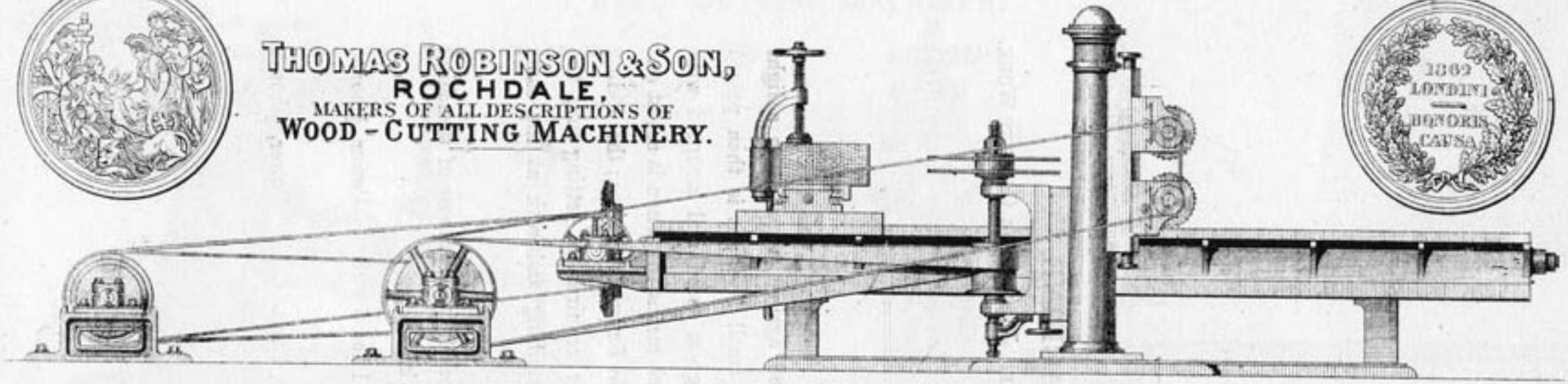
No. 1 size, with scribing apparatus, 1 ton 5 cwt. Power, ½-horse.
Do. without do.
No. 2 size, with scribing apparatus, 1 ton. Power, ½-horse.
Do. without do.

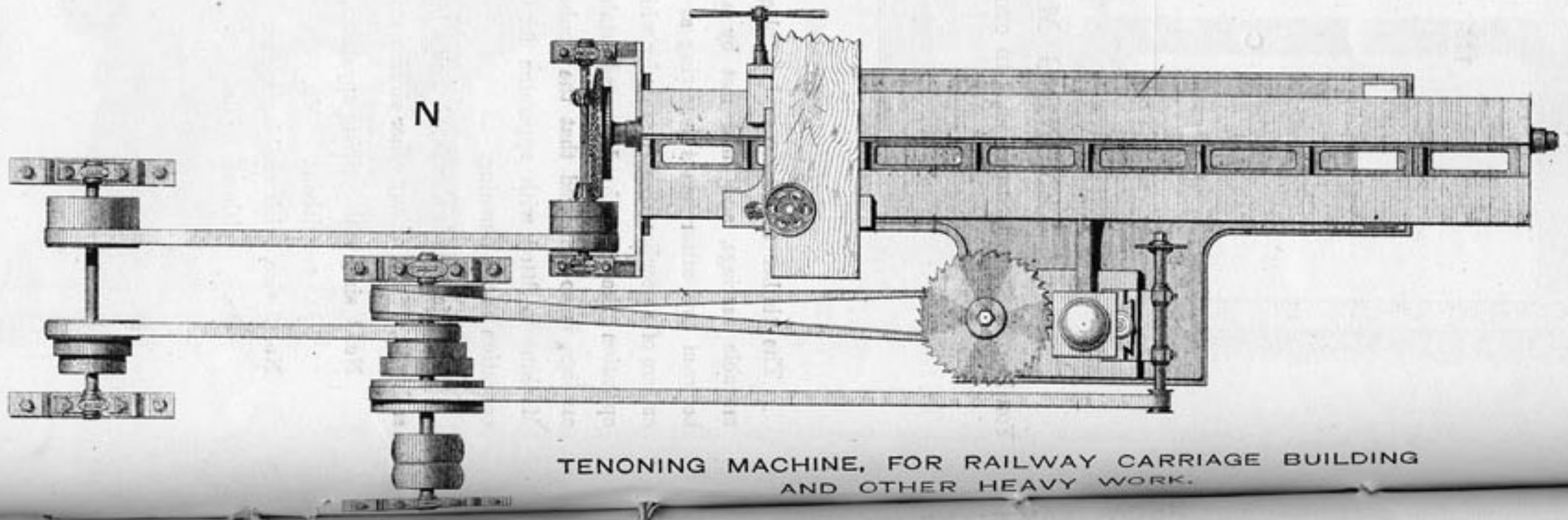
THOMAS ROBINSON & SON,

ROCHDALE,

MAKERS OF ALL DESCRIPTIONS OF

WOOD - CUTTING MACHINERY.





TENONING MACHINE, FOR RAILWAY CARRIAGE BUILDING AND OTHER HEAVY WORK.

N

TENONING MACHINE FOR RAILWAY CARRIAGE BUILDING AND OTHER HEAVY WORK.

As shown in the Drawing, the timber to be tenoned is held fast by a screw on a sliding carriage, motion to which along the bed is given either way by screw driven by pulley and wheels. As the timber is moved along the bed, the tenon is cut by means of two saws working vertically and two horizontally, these cutting the tenons at one operation; these saws are adjustable by screws on slides to any size of tenon; the tenons may be cut at any angle.

Average power required, 4-horse. Weight, 4 tons.

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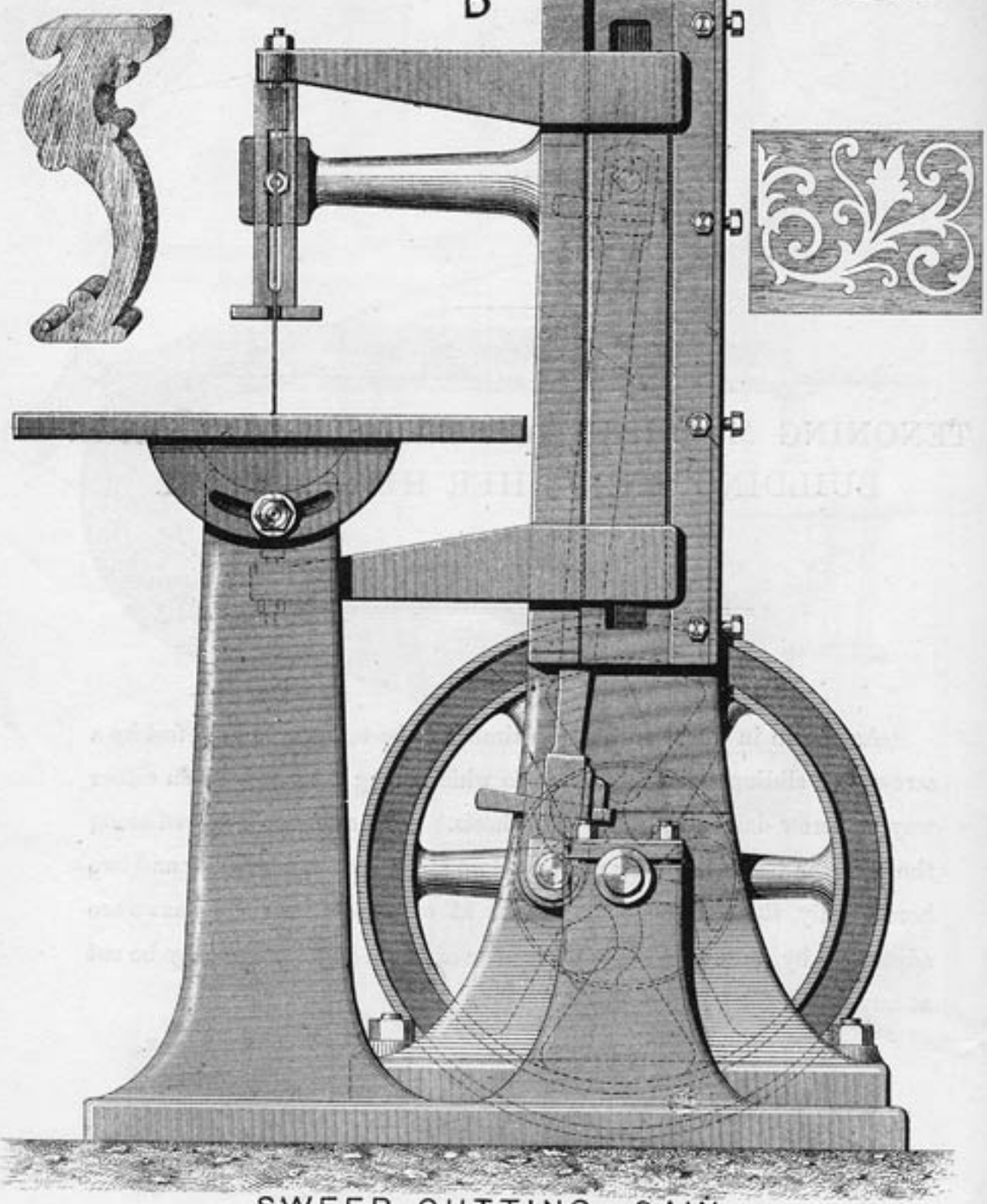

SWEEP-CUTTING SAW.

This Machine is for performing the same operations in sawing as the Endless Band Saw.

It is chiefly used by cabinet makers, joiners, and builders, and for cutting tracery.

The table has a canting motion for bevil-cutting.

No. 1 will cut any depth up to 4 inches.
Weight, 12 cwt. Power required, ½-horse.

No. 2 will cut any depth up to 8 inches.
Weight, 15 cwt. Power required, 1-horse.

No. 3 will cut any depth up to 12 inches.
Weight, 1 ton 10 cwt. Power required, 1½-horse.

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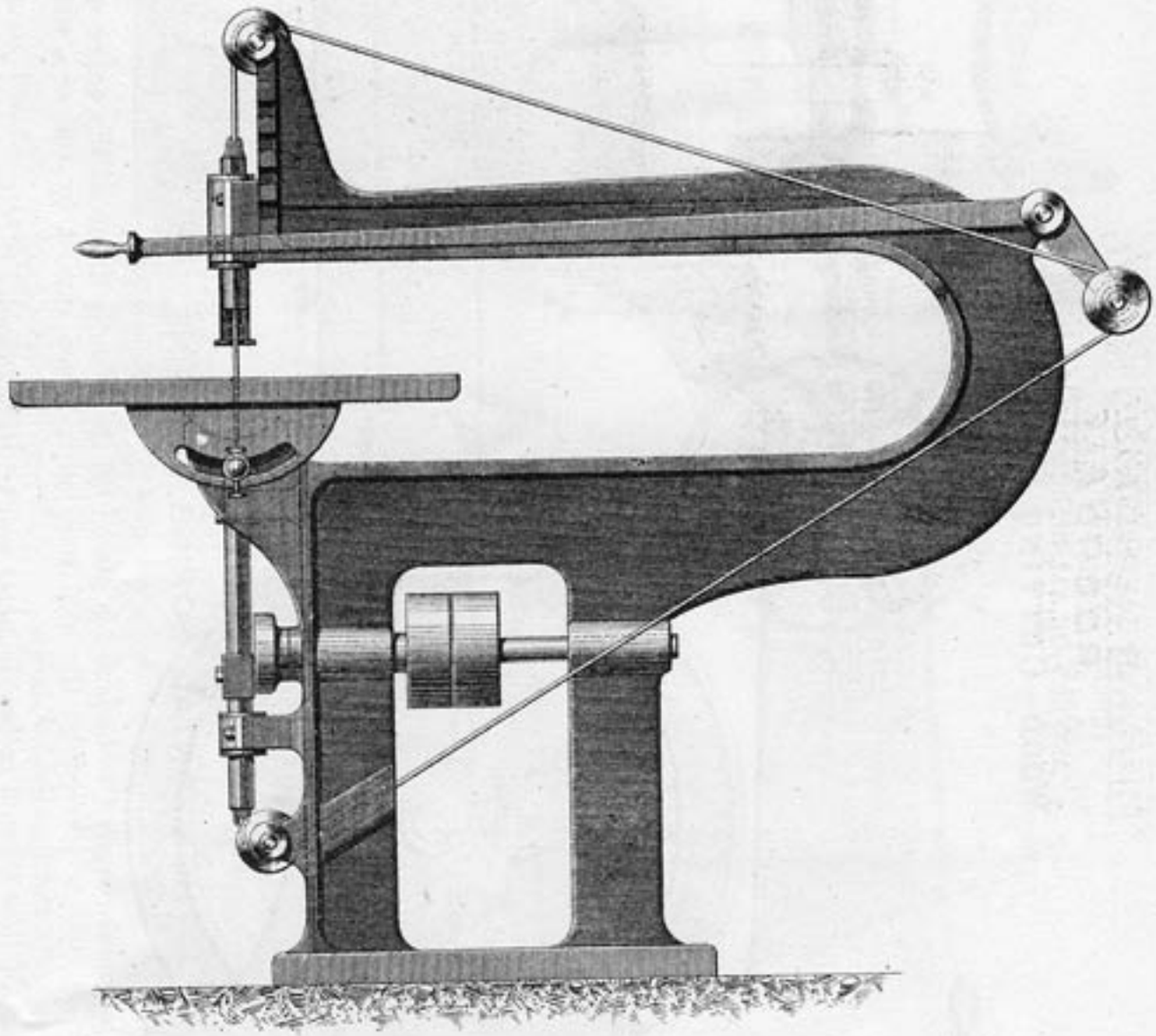
WOOD-CUTTING MACHINERY.

B²



FRET CUTTING SAW.

This Machine is for sawing out curves and irregular work, and is generally employed by cabinet makers, pianoforte manufacturers, joiners, builders, &c.

The table is so arranged as to be canted to a bevel when required to saw at an angle.

All the working parts are of the very best workmanship, and counter-balanced so as to enable it to be driven at a high speed.

Weight, 1 ton 5 cwt. Power, 1 horse.

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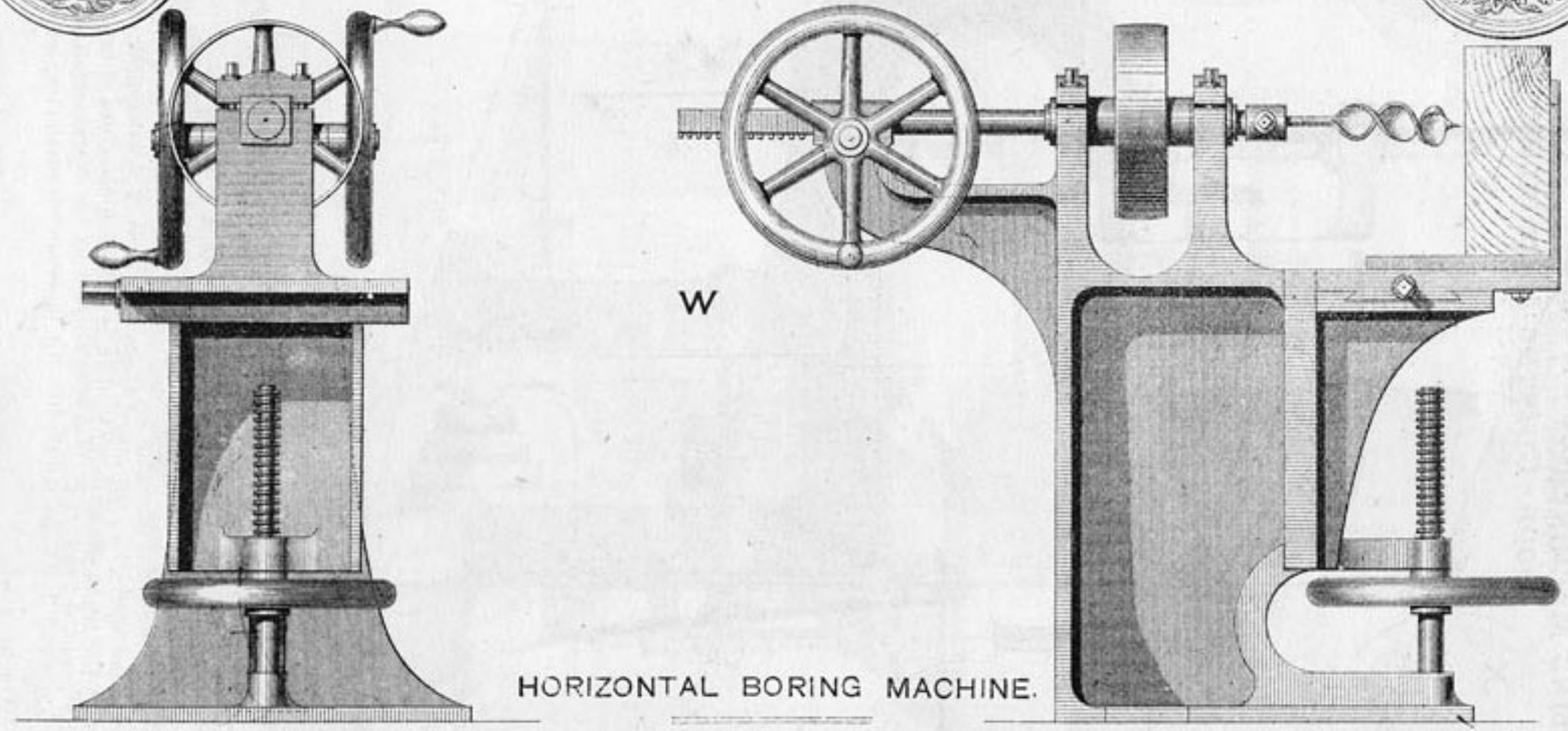
WOOD-CUTTING MACHINERY.



W

HORIZONTAL BORING MACHINE.

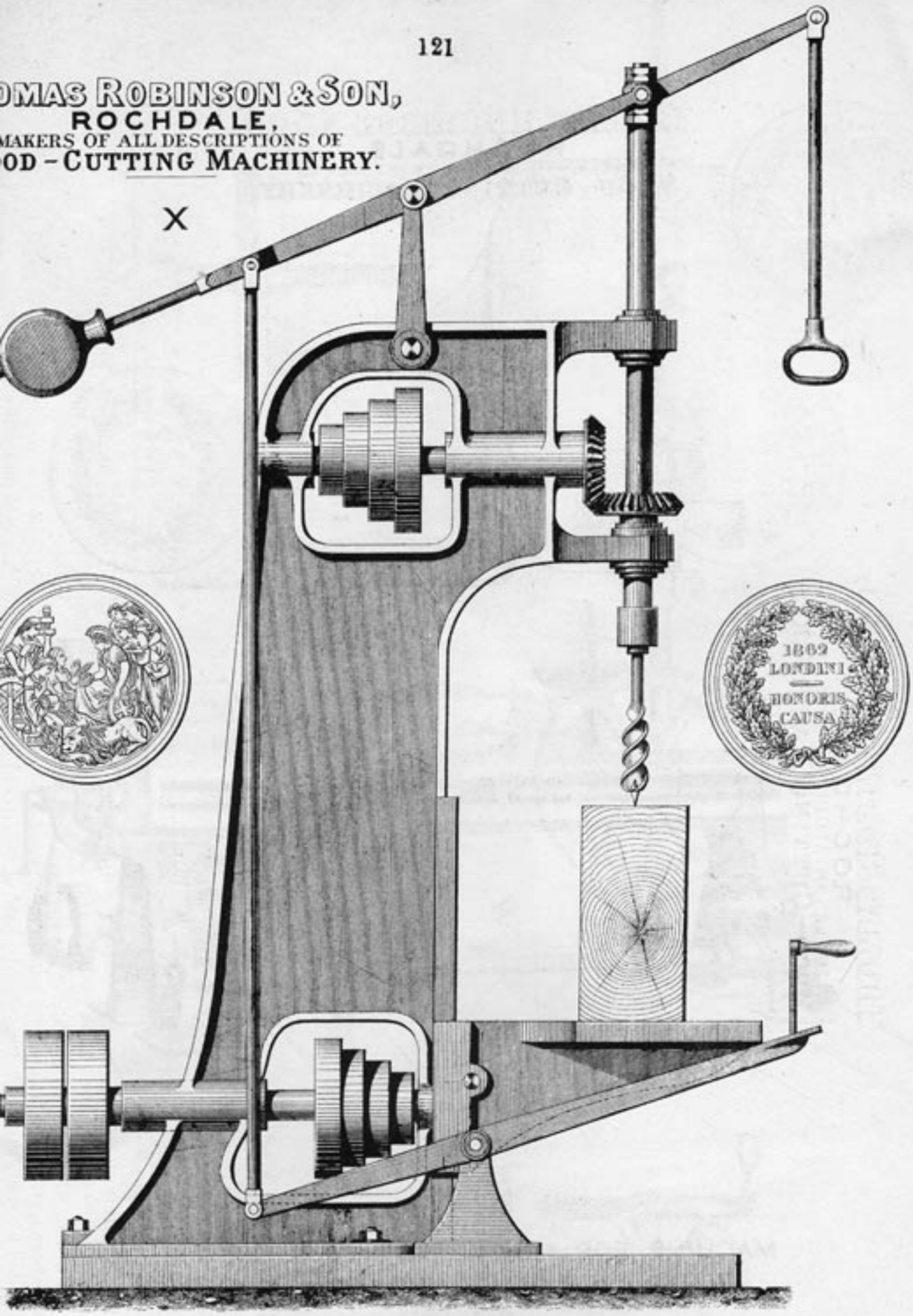
In this Machine the wood required to be bored is placed on the table in front of the auger or boring tool, as shown in Drawing, and is pierced by the said tool being forced into it by the rack and pinion motion, worked by the wheels and handles as shown.

It will bore any size of hole up to 3 inches diameter and 12 inches deep.

The table for carrying the timber can be raised or lowered for various sizes by wheel and screw.

No. 1 Size. Weight, 1 ton. Power, 1-horse.
" 2 " " ½ " " ¼ "

X



VERTICAL BORING MACHINE.

The action of this Machine is the same as that of Drawing W, only that the tool operates vertically in place of horizontally, and is brought down into the timber by a lever pressed down by the workman's foot.

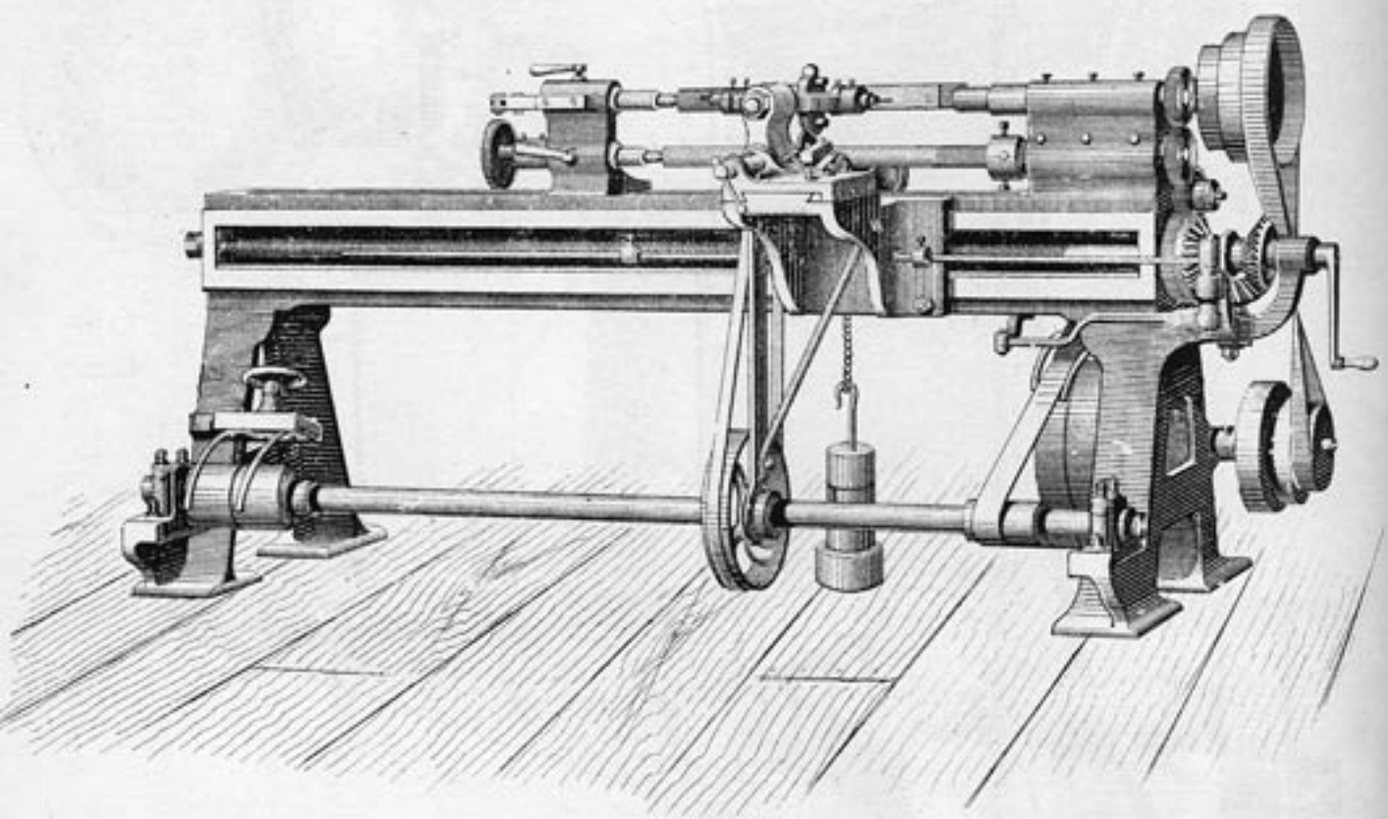
No. 1, to bore holes of any size up to 3 inches diameter, and 16 inches deep.

Weight, 1 ton. Power, 1-horse.

No. 2 size, to bore holes of any size up to 1½ inches diameter, and 9 inches deep. with one speed only

Weight, ¾ ton. Power, ¾-horse.

V



MACHINE FOR MAKING WHEEL SPOKES AND HAMMER SHAFTS.

This Machine is a Lathe with double headstocks, in one of which is placed an iron pattern of the shape of spoke required, and in the other the wood for a spoke. A revolving cutter, mounted on a sliding carriage, operates on the timber; the said carriage moves to the shape of spoke by the action of the blank pattern, and longitudinal motion is given to the carriage by a screw.

Weight, 1¼ tons. Power required, 1-horse.

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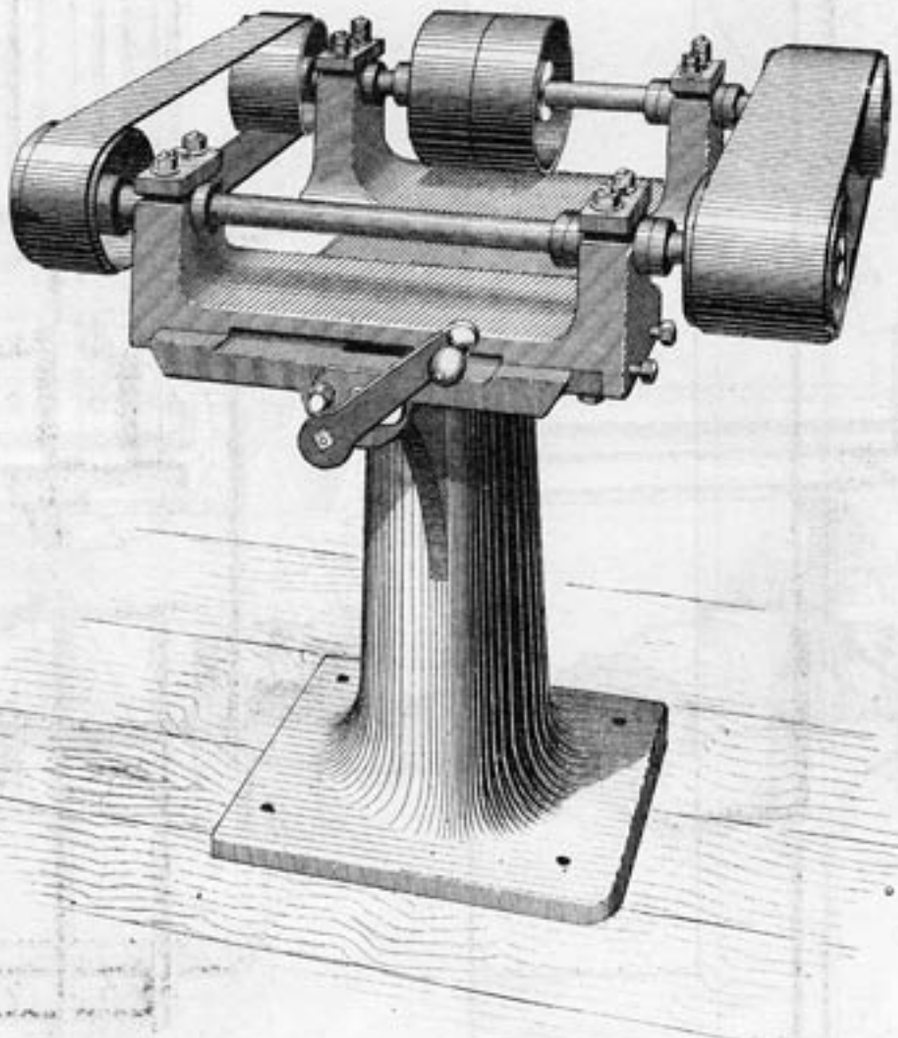
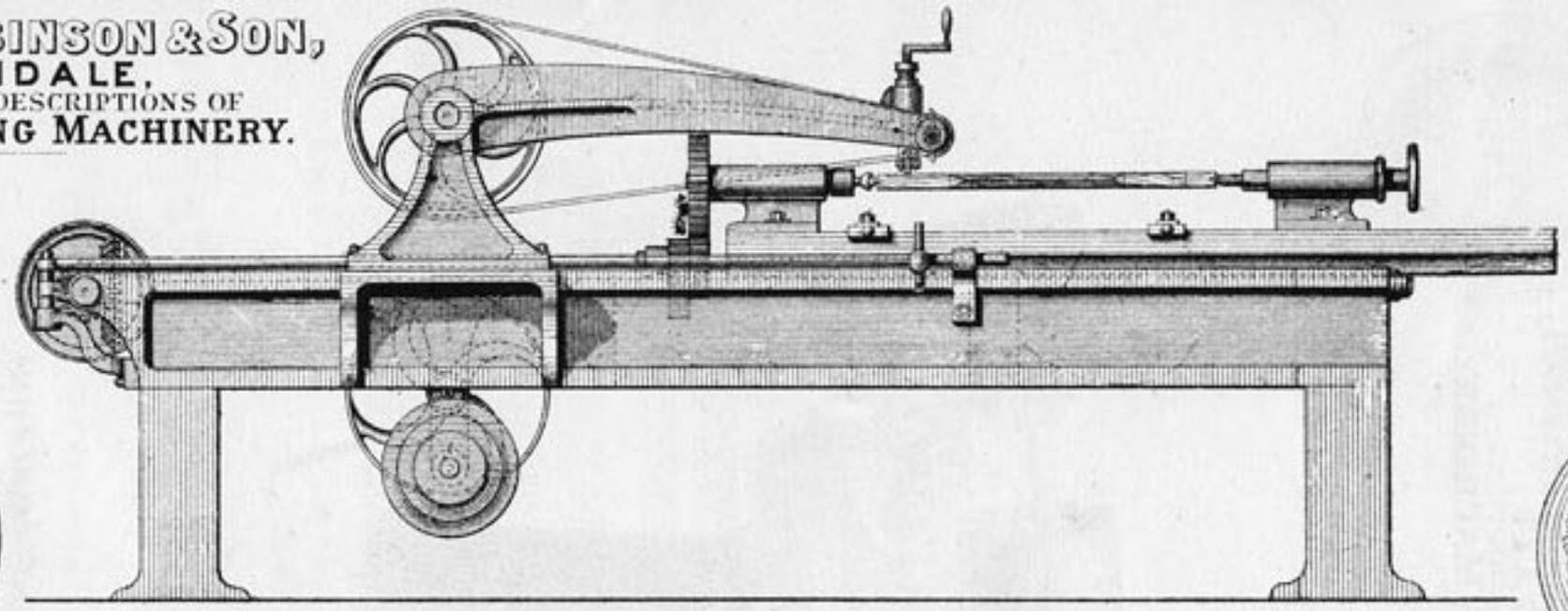
V. 1.



SPOKE POLISHING MACHINE.

The Machine here represented consists of two endless sandpaper bands, which are mounted on pulleys for the purpose of cleaning up, and finishing shafts and spokes, &c., after they leave the lathe.

Weight, 5 cwt.



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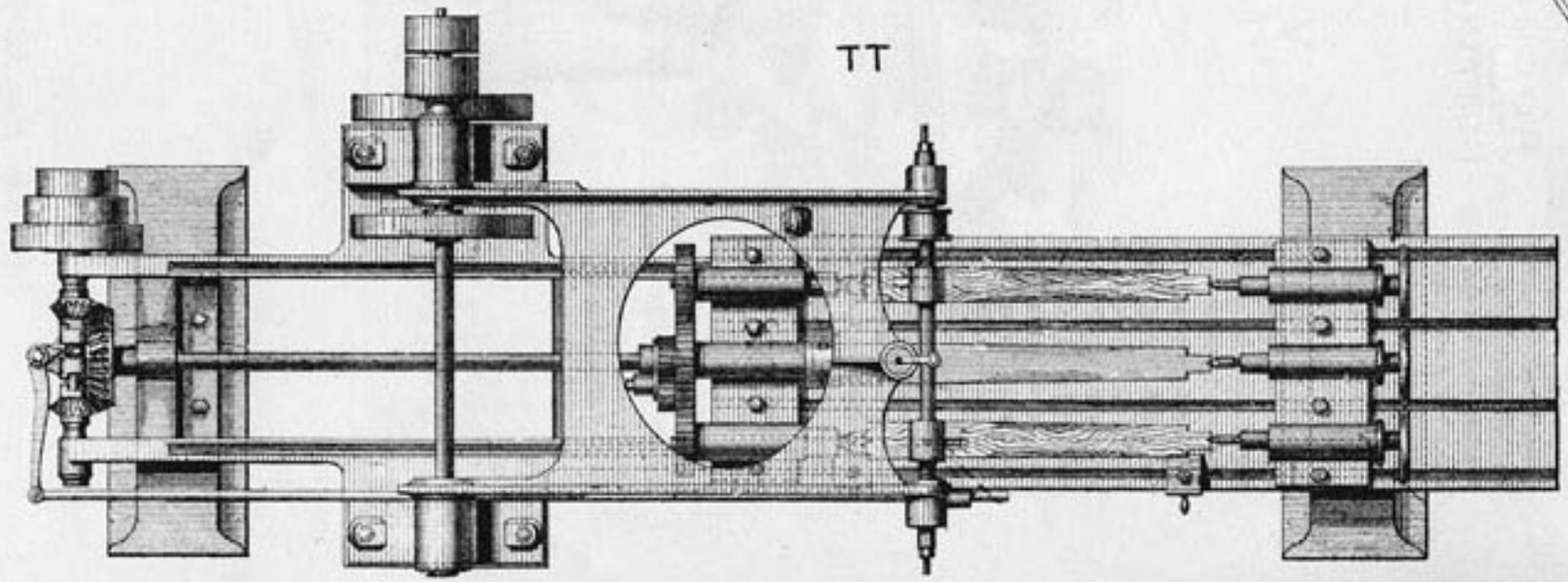


MACHINE FOR MAKING TWO OR MORE SPOKES OR HAMMER SHAFTS AT ONE OPERATION.

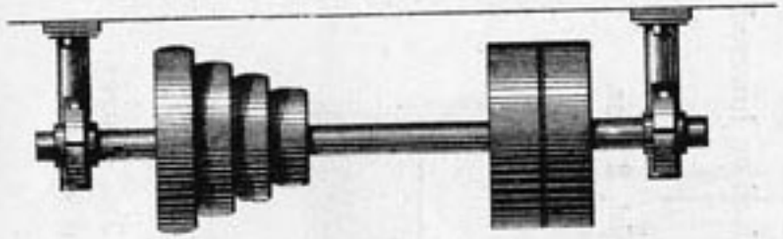
TT

MACHINE FOR MAKING TWO OR MORE SPOKES OR HAMMER SHAFTS AT ONE OPERATION.

The action of this Machine varies from the one as per Drawing V, in that the action of the cutters is in a line with the timber, instead of across it.

The pattern of work to be done is placed in the centre headstock, and the timber to be cut on each side; the whole being fixed on a table, which is travelled to and fro by a screw, driven as shown, during which movement the block carrying the cutters and guides is raised or lowered by the turning of the pattern.

Power required, 1-horse. Weight, 2 tons.



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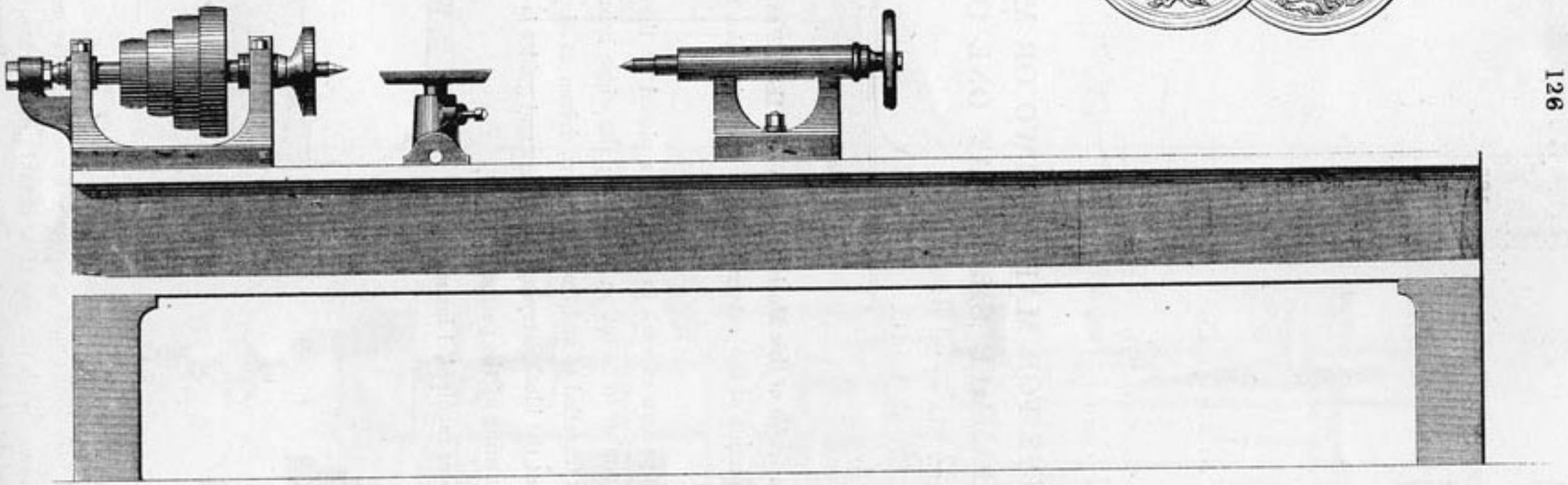

WOOD AND IRON TURNING LATHE.

The annexed Drawing represents a strong 9in. Lathe, with iron bed 14 feet long, for turning wood or iron.
It is provided with hand rest.

Weight, 1 ton.

Power, nominal.

GAP LATHE FOR WOOD AND IRON.

The Lathe is fitted with fast and loose headstocks, 9in. centres, and bed 14ft. long; sliding carriage for tool holders moved with rack and pinion. With the gap clear it takes in 5ft. diameter.

Weight, 1½ tons. Power, nominal.

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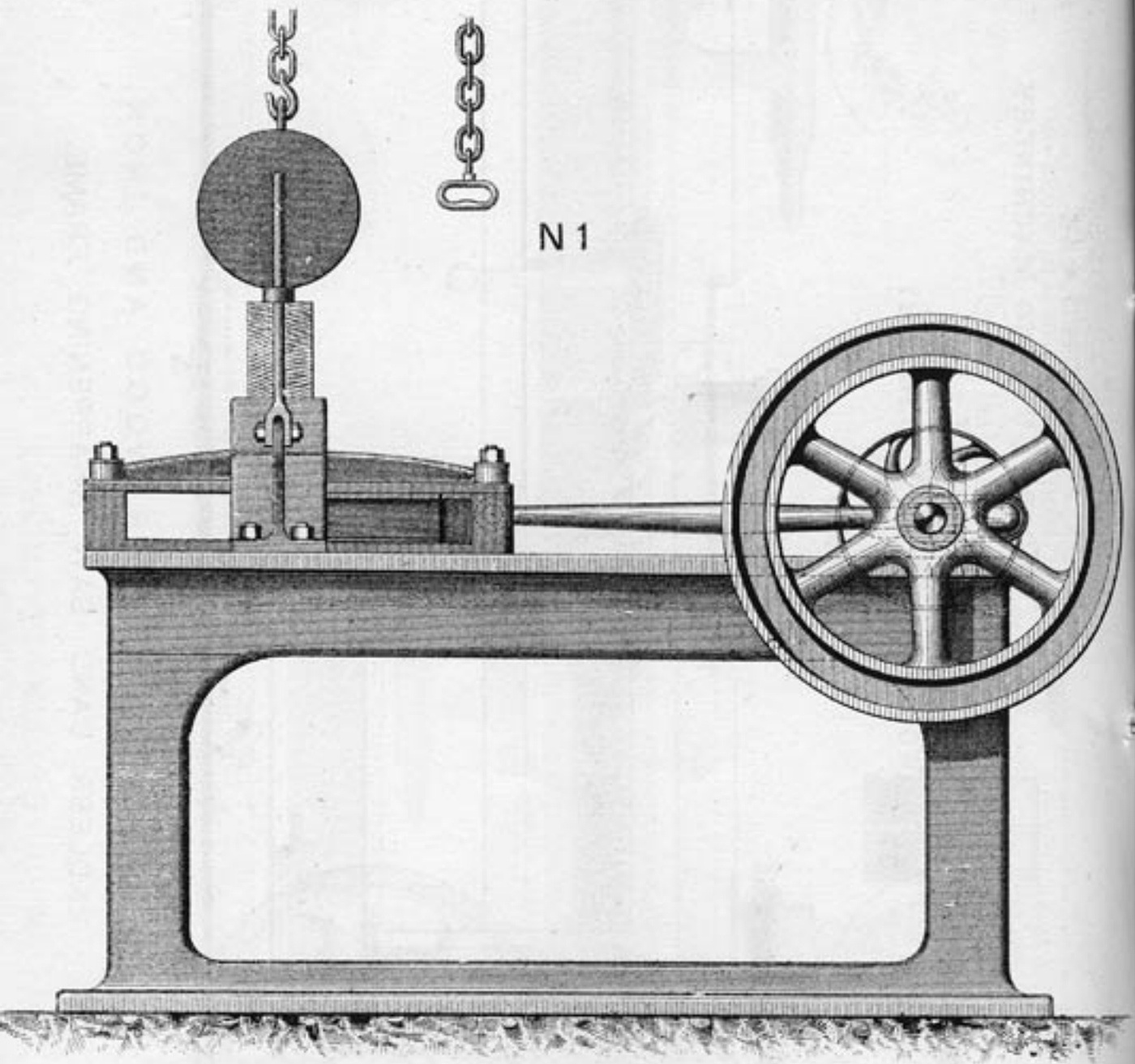

SPLINT CUTTING MACHINE.

This Machine will produce 5,000 double splints, equal to 10,000 matches, in a minute.

The wood is first cut at the saw bench into convenient pieces, and after being steamed, is dropped into the box which holds it on all four sides, but allows a weight to press it on to the cutters.

The cutters consist of a series of lancet knives and a broad plane iron, which work in a sliding frame, driven by a crank. The lancet cutters dividing it, and the plane iron slicing it into splints, which fall below.

The cutters can be adjusted so as to cut matches of different sizes.

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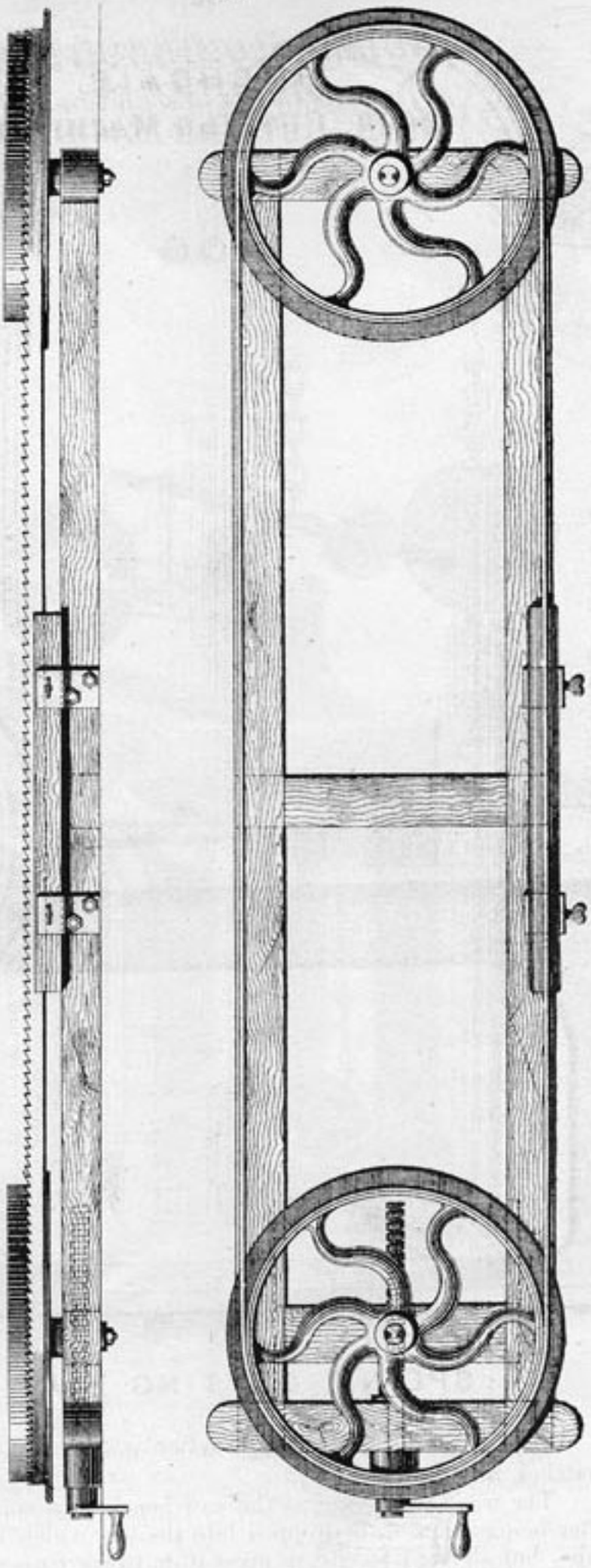
V V



ENDLESS BAND SAW SHARPENING FRAME.

The Frame shown in accompanying Drawing is for the purpose of sharpening Endless Band Saws.

The Saw is placed in exactly the same position as when working in the Machine, and held tight in a pair of ordinary saw clamps whilst being sharpened.

The Saw is stretched on the two pulleys as shown, and sharpened the same as an ordinary Saw.

Weight, 5 cwt.

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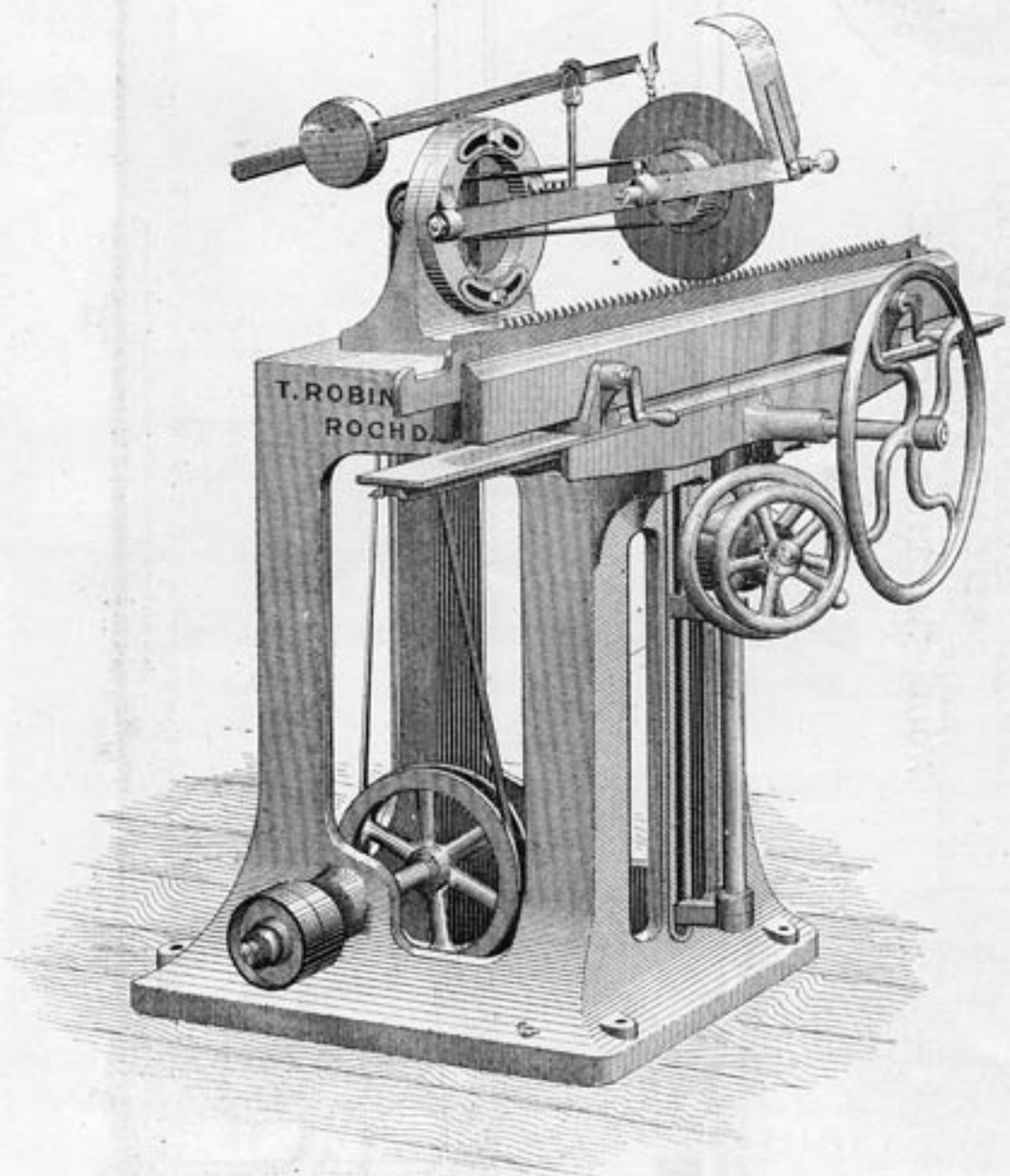
QQ



SAW SHARPENING MACHINE.

QQ

SAW SHARPENING MACHINE.

This Machine is for the purpose of sharpening Saws for both Vertical Timber and Deal Frames, and Circular Saw Benches.

The Saws for Vertical Frames are held in a Vice similar to that used in ordinary hand sharpening, and can be moved along in either direction by rack and pinion.

The sharpening disc, which is an emery wheel, is in a balance swing carriage, arranged to set at any angle, so as to easily alter for both gulletting, topping, and bevilling.

The teeth are completely finished without any filing.

The circular saws are fixed on a spindle, to rise and fall according to the size of saw, and are sharpened the same way as the vertical saws.

The saving is computed to be 25 per cent.

Weight, 1 ton. Power required, nominal.

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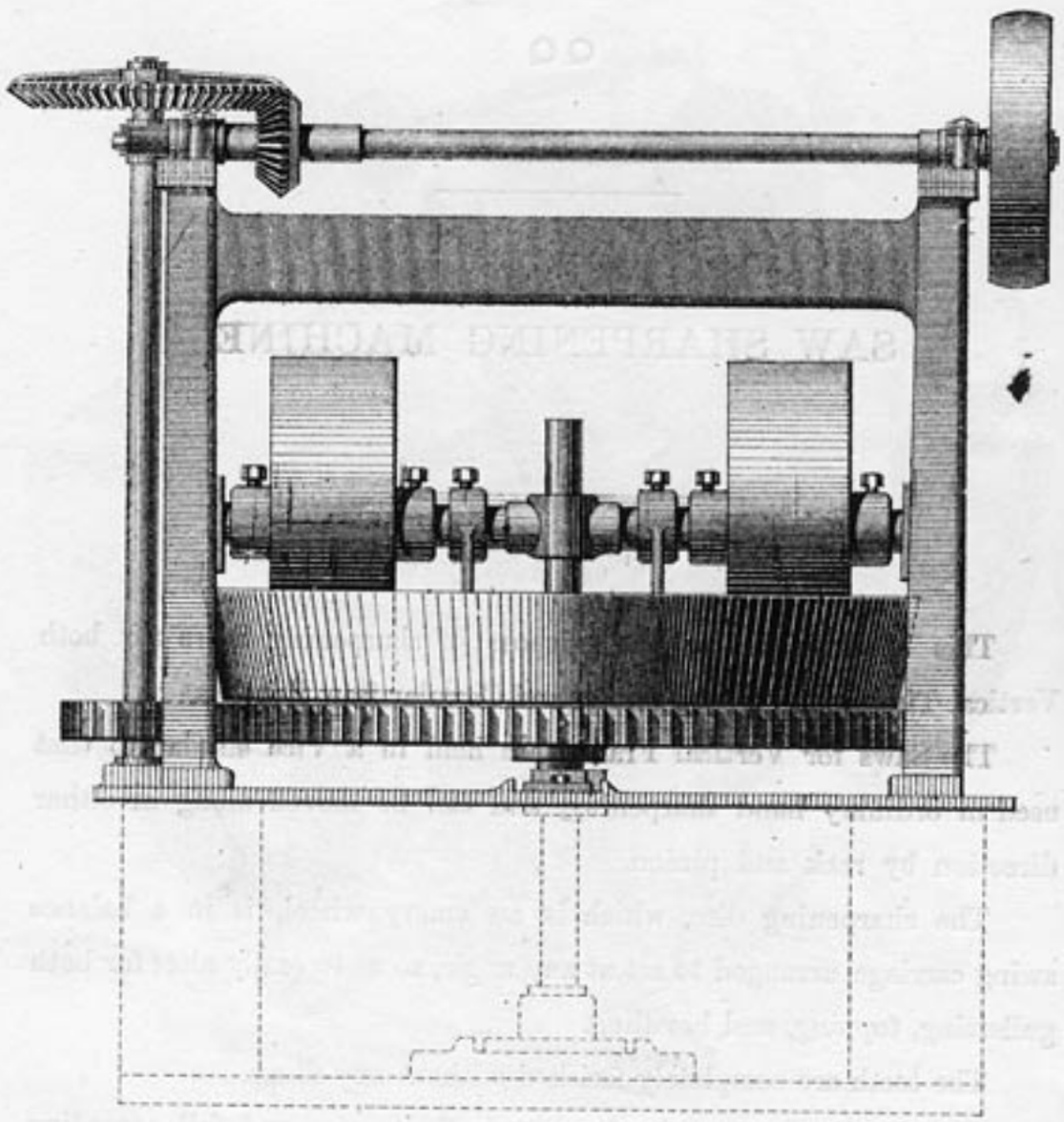
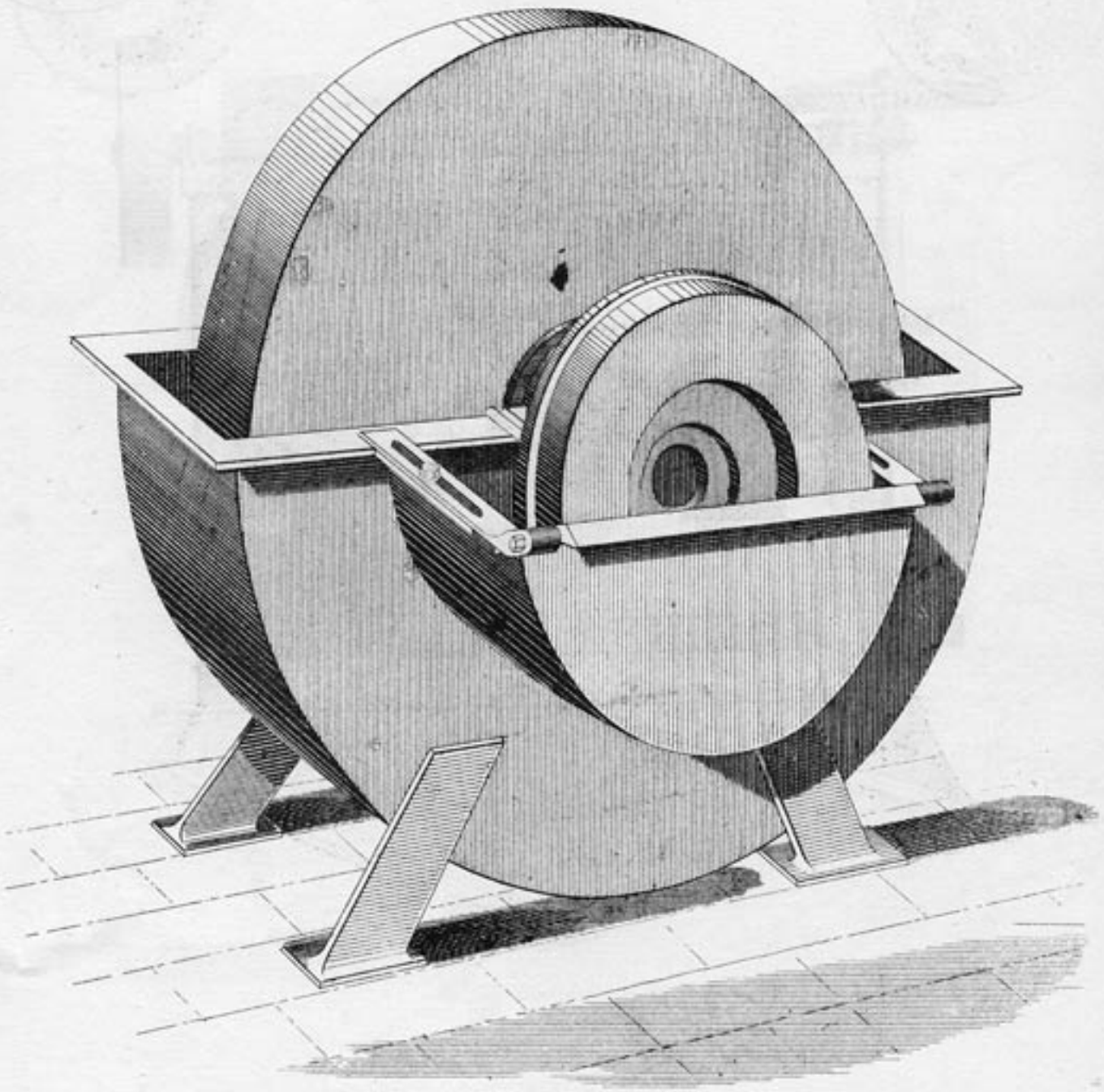


MORTAR MILL.

The Mill shown in the above Drawing consists of a pan 6 feet diameter, made to revolve by means of wheel and pinion, as shown. The rollers, which are solid and 3½ft. diameter, crush the mortar, &c., by their own weight. The Mill can also be fitted with steam cylinder if required.

Total weight, 7½ tons. Power required, 4-horse.

Y



GRINDING MACHINE FOR PLANE IRONS.

Consists of a Sandstone 4 feet diameter, running in a cast-iron trough, with segment Ayrshire stones affixed outside the trough to one end of the shaft.

In working, the plane irons or cutters are first ground down on the Sandstone, and then set to a fine edge on the Ayrshire stone.

Weight, about 1 ton. Power, ½-horse.

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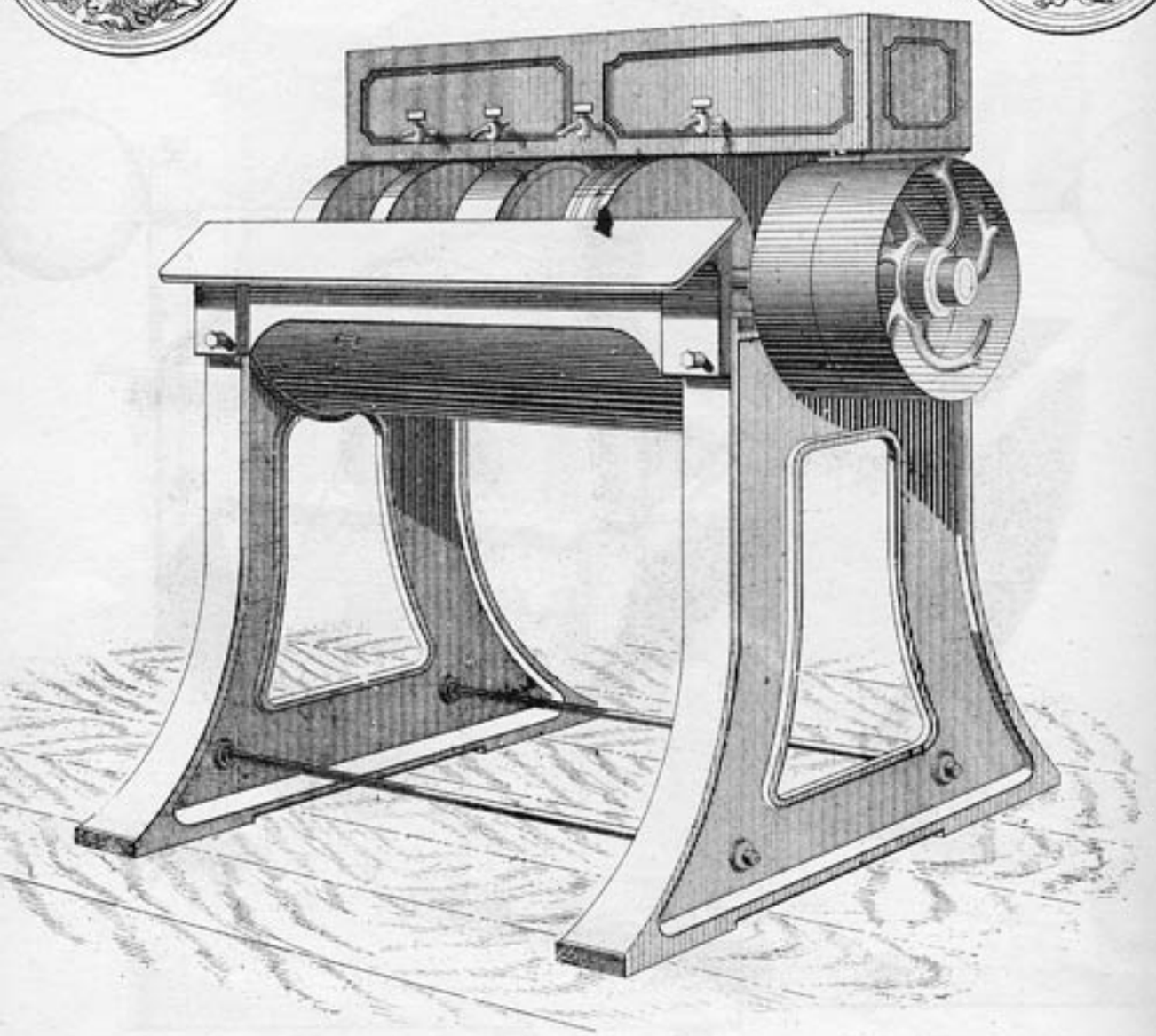
Z



GRINDING MACHINE FOR MOULDING IRONS.

Consists of two Ayrshire and two soft Sandstones, mounted, as shown, on a spindle running in a trough, with cistern over, having taps to let the water flow on the stones as they revolve. The stones are so shaped on the edge that they will sharpen any shape of moulding iron.

Weight, 5 cwt.

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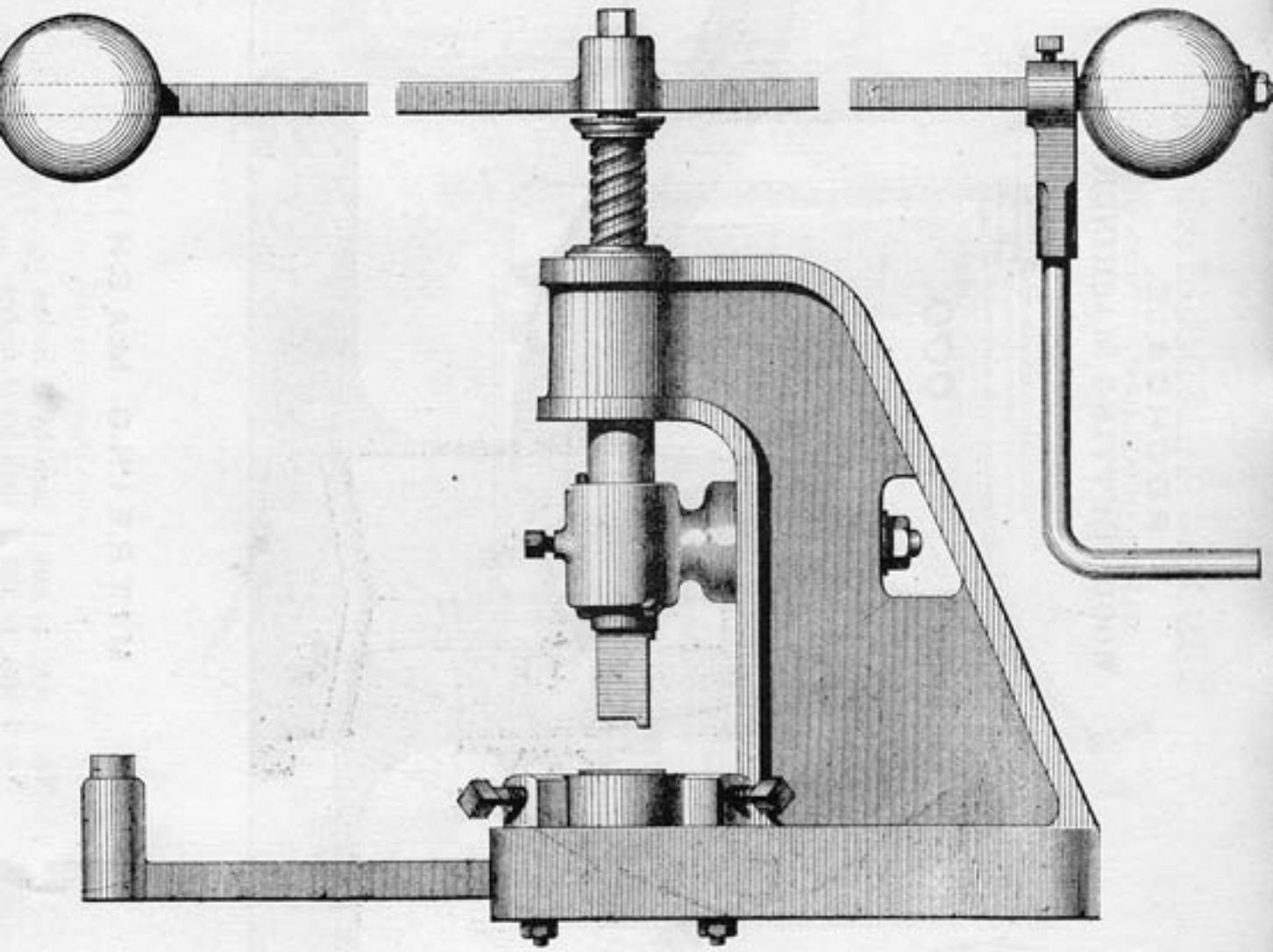
WOOD-CUTTING MACHINERY.

LL



FLY PRESS.

This Machine is arranged for punching out teeth of saws after they have got too short, and saves considerable time in filing.

A sliding bar, with a centre pin, is attached, for the purpose of accurately punching the teeth of circular saws.

Weight, 12 cwt.

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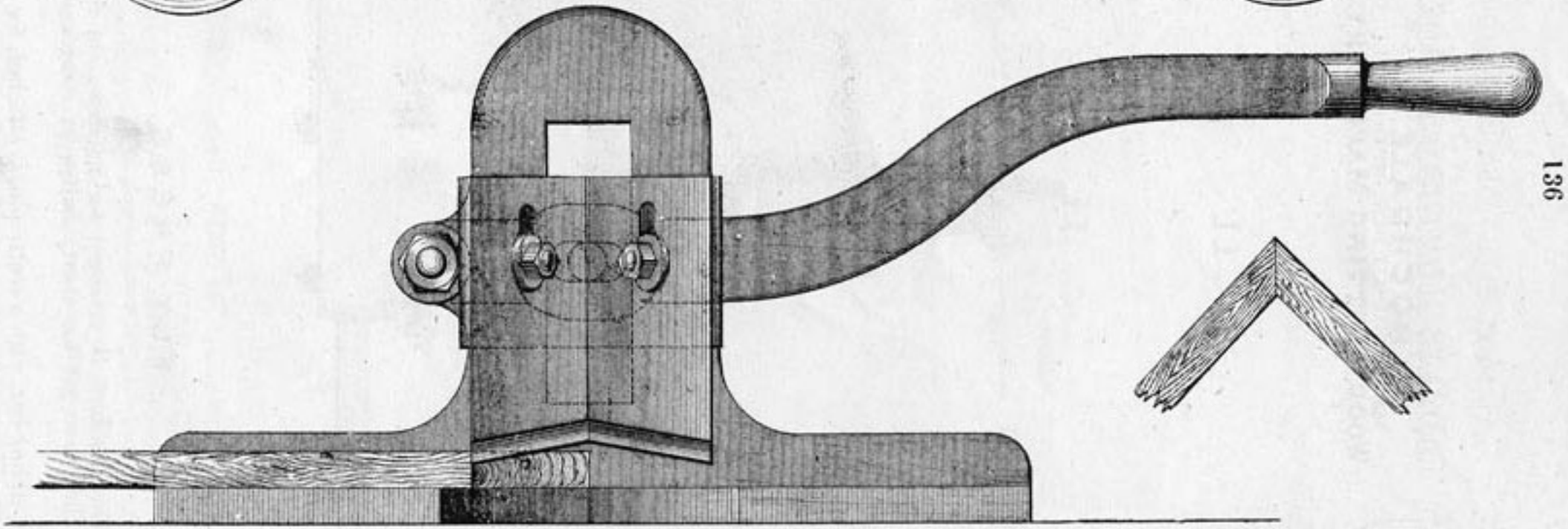
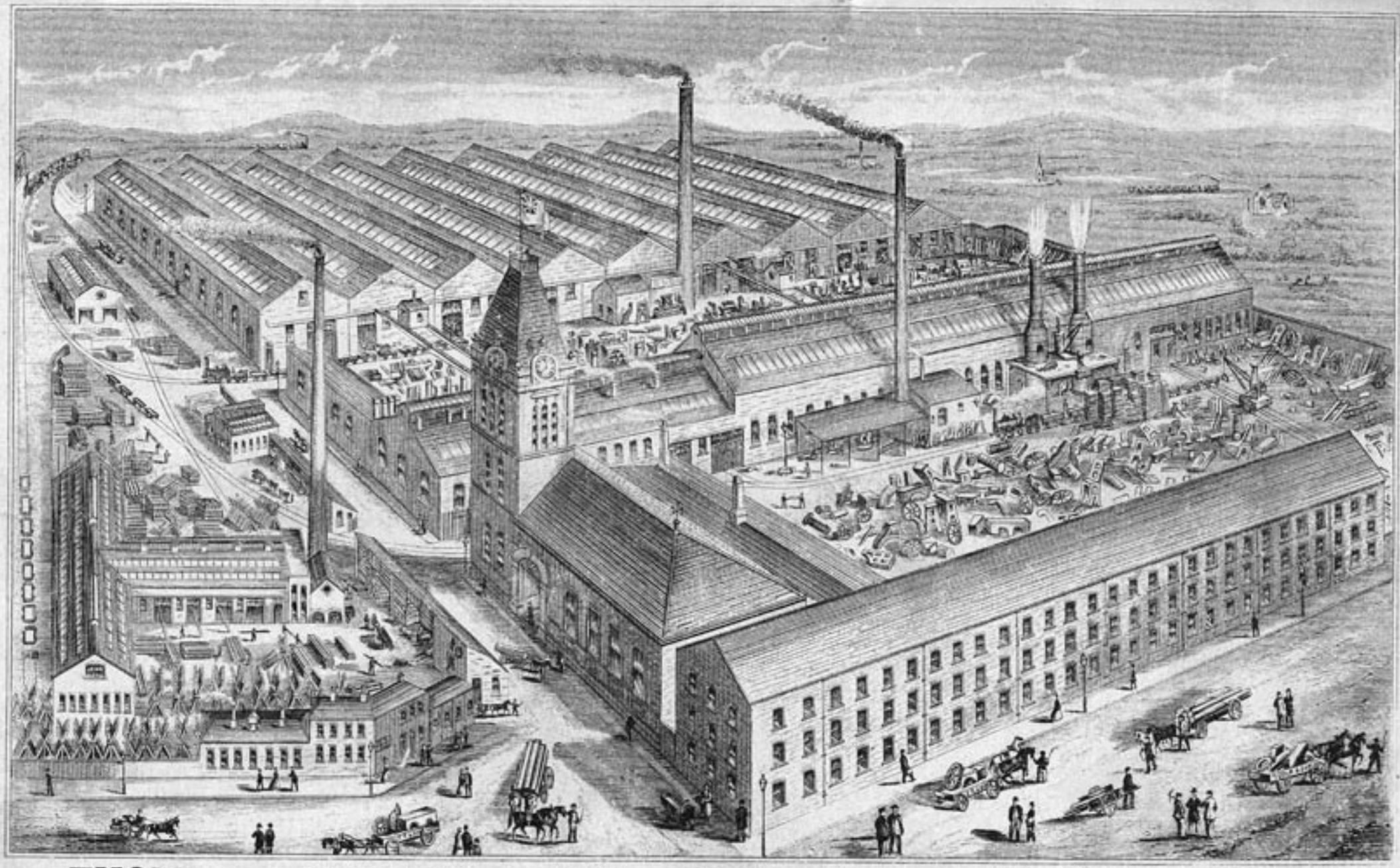
OOO



MITREING MACHINE.

No. 1 size, to cut 1 inch by 4 inches ... ...
No. 2 size, to cut 1 inch by 2 inches ... ...



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