Monarch
Bench Jointers

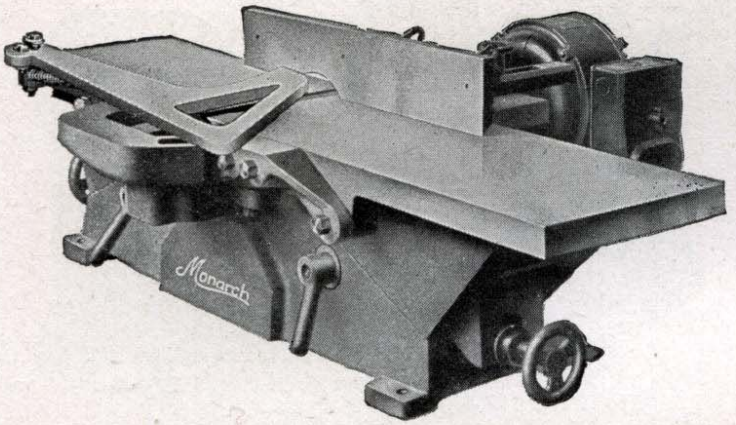


Fig. 951
Eight Inch Jointer with Motor

This Machine is arranged for belt drive or for direct motor drive. The motor for the eight-inch machine is integral with the cutter head shaft and attached to the housing. The motor for the six-inch machine is mounted on a base which also carries the machine.

The Motor regularly furnished is 110—220 volt, 60 cycle, single phase or 220 volt, 60 cycle, 3-phase. Two phase or direct current motors are furnished on special order. Current must be specified.

The 8″ Jointer will be furnished with floor stand when so desired.

No.	X15	X13
Size	Six Inch	Eight Inch
Code Word	Wogup	Wogus
Floor space with motor	23½″x38″	37″x50″
Feeding-in table	8″x18″	10″x24″
Feeding-out table	6¼″x18″	8¼″x24″
Height to working surface	8¼″	10½″
Length and height of fence	20″x3½″	20″x3½″
Diameter and length of head	3″x6″	4″x8″
Speed of cutter head	3450-3600	3450-3600
Diameter of pulley for belt drive	2½″	2½″
Shipping weight with motor	250 lbs.	460 lbs.
Shipping Weight for belt drive	175 lbs.	420 lbs.
Floor stand adds to weight	.....	270 lbs.
Cubic contents, with motor	9 c. f.	10 c. f.
Cubic contents, for belt drive	4½ c. f.	8 c. f.
Floor stand adds	.....	13 c. f.

Bench Jointer Eight Inch

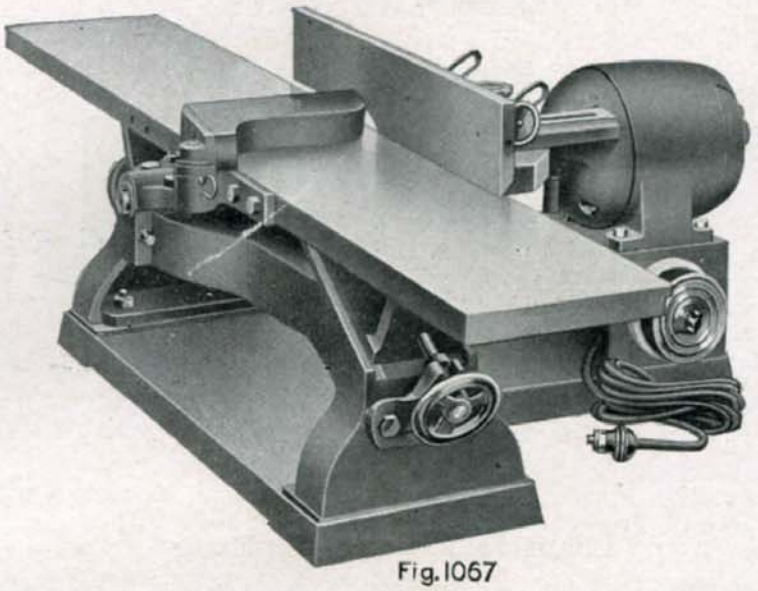


Fig. 1067

Fig. 1067

With ½ H. P. Motor, Code, Wohaf. With 1 H. P. Motor, Code, Wohag

For the use of contractors, builders and others who must necessarily figure close on their jobs, this machine is of particular value, as it will eliminate much slow, hard manual labor, doing in one operation the same work which requires a number of operations with the Jack-plane, Fore-plane and Square, and doing this work much faster and better. The difference between the cost of machine work and hand work frequently means the securing or losing of a profitable job. Furnished with direct motor drive or with Pulley for belt drive.

Regular Equipment: Each machine is furnished with Tilting Fence for bevel work, Automatic Guard, and Knives. We will, at the option of the purchaser, furnish either Round Safety Head or regular Square Head with knives on two sides, the other two sides being slotted for carrying special knives or bits. In ordering, please specify which style head is desired.

SPECIFICATIONS

Length over all, 49″, width for belt drive, 16″.
Width with motor, 30″. Height to top of table, 11½″. Fence, 3¾″x20″.
Pulley, 2½″x2½″. Speed 3600 R. P. M. Weight for belt drive.
Weight with motor, 300 lbs. Export weight adds 75 lbs.
Cubic contents for belt drive, 8 c. f.; with motor, 12 c. f

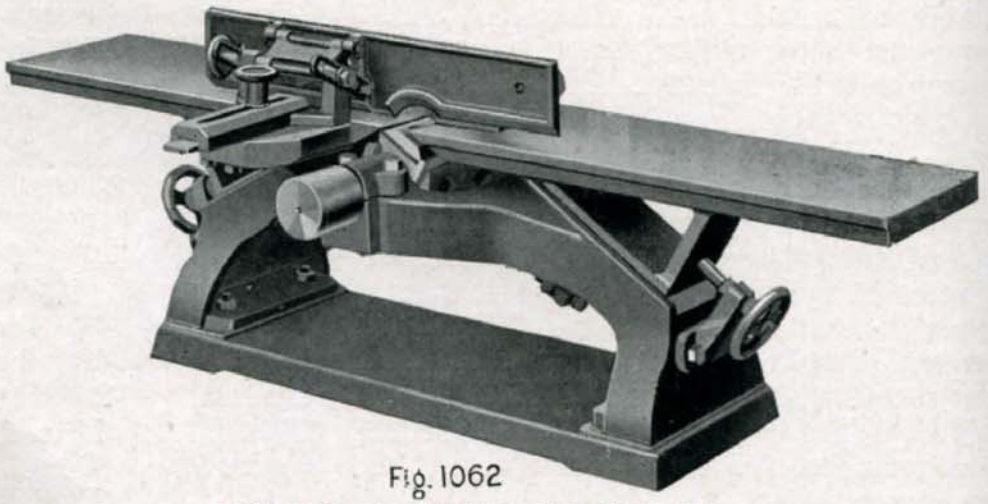


Fig. 1062

With Pulley for belt drive, Code Word, Wohen

Monarch

Ball Bearing Jointer No. X11

Twelve and Sixteen Inch

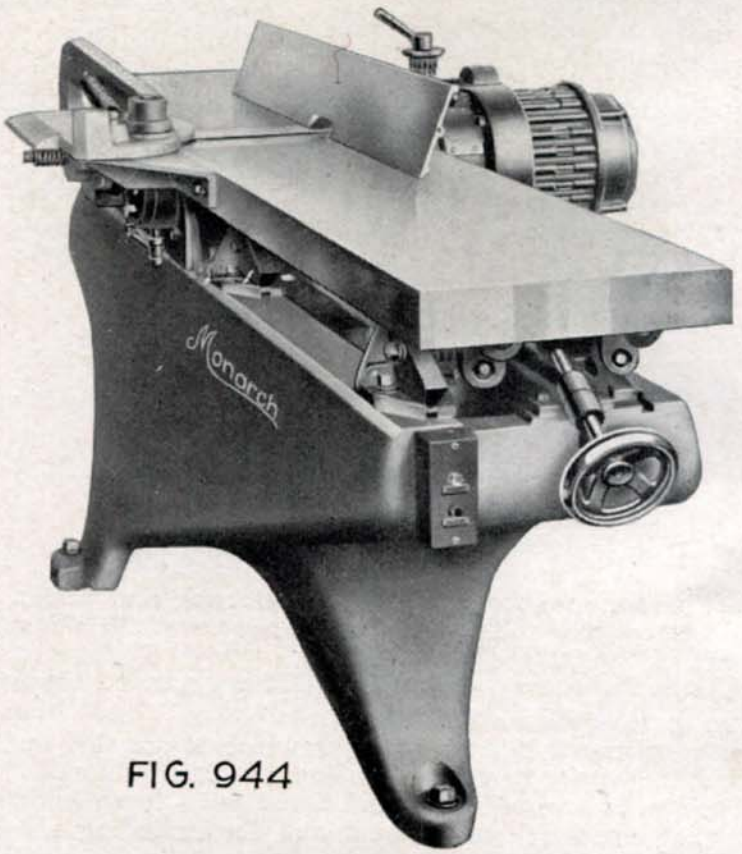


FIG. 944

With Shaftless Motor Drive, Code Word, Wohal

Here is a machine that is not only up-to-date but also distinctly in advance of present-day general practice. A machine that embodies the ideas of eminent woodworking experts and designers. A radical departure from conventional types has enabled us to produce a machine of pleasing design, free from obstructions to the operator; with three-point floor contact which insures against rocking; and a guard that meets the most rigid requirements of safety regulations. The 12″ machine can be furnished with tilting table if desired at extra cost.

The frame is cast in one piece, with wide-spread feet at the feeding-out end and one central leg at the feeding-in end, so as to give clear foot room for the operator.

The tables are heavily ribbed and accurately ground. The feeding-in table is 48″ long and the feeding-out table is 36″ long. The tables are fitted with steel lips but will be furnished plain, if desired, at less cost.

The safety guard is unique in design and is marked by three principal features. When in its operating position the guard covers the head close up to the work passing through, adjusting itself to any width. It can be held open by means of a latch when its use is not desired. It can be thrown over entirely out of the way for rabbetting, without removing from the machine, and when brought back into position it is instantly ready for service. A coil compensating spring neutralizes its weight when thrown over.

Monarch Jointer

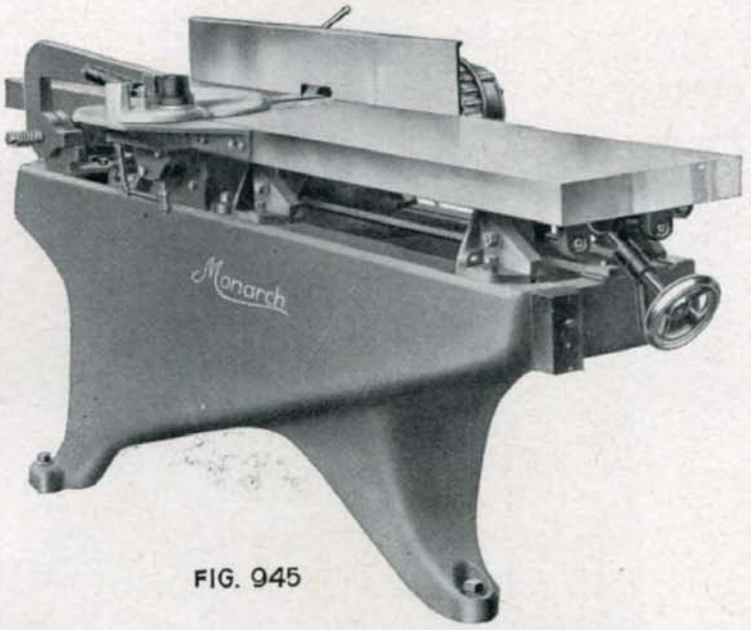


FIG. 945

The fence is actuated by means of a cut rack and pinion and when in position it is clamped fast. The fence has adjustment for alignment with the rabbetting edge of the table. It tilts to any angle to 45 degrees from vertical with positive stops for these two positions. It has parallel traverse across the table.

The head is mounted in a heavy yoke which is doweled and bolted direct to the bed and it cannot move out of line. It is 5″ diameter, of improved design, made of solid forged steel, and fitted with three high speed knives. Provision is made for knife adjustment and for excluding all dust from the bearings.

The machine may be converted from motor to belt drive, or from belt to motor drive, and if preferred the machine may be equipped with babbitted bearings for belt drive only.

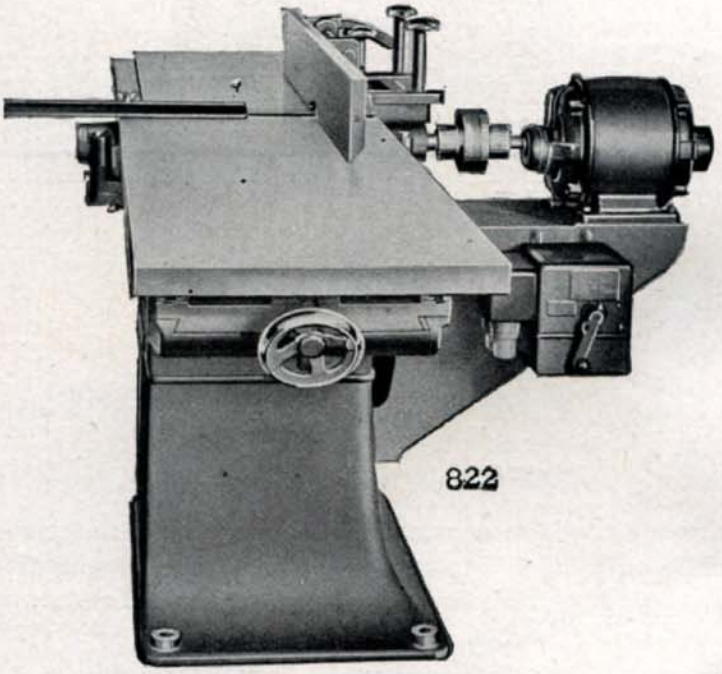
For connection to a factory exhaust system a cast iron hood or chute is fastened to the under side of the yoke inside of the base to which an exhaust pipe may be connected. For individual exhaust a specially designed fan is placed inside of the frame and is driven by a small belt from the head shaft to the fan pulley just outside of the frame, an opening being left in the frame for the pulley shaft to pass through.

The jointer may be equipped as follows:
With ball bearings, with motor on the head.
With ball bearings, with pulley for belt drive.
Motors are for 3-phase, 60-cycle alternating current.

SPECIFICATIONS

	12″	16″
Extreme length	89″	89″
Width over motor and rabbetting arm	38″	42″
Width in-feeding table	15¼″	19¼″
Width out-feeding table	13¼″	17¼″
Depth of rabbetting, max.	⅝″	⅝″
Shipping weight, lbs.	1600	1850
Export weight	1950	2400
Cubic feet	80	96

Hand Jointer



With Direct Motor Drive

The "Jointer" is a necessity in every wood-working shop. Its convenience and ready adaptability to such a large variety of work is so universally understood that it really needs very little explanation.

The Frame is of the pedestal type, strongly braced, insuring strength, rigidity and absence of vibration.

The Tables measure 7′ over all. They are strongly ribbed, planed perfectly true and arranged for rabbetting. Both are mounted on inclines having independent adjustment for different depths of cut, this adjustment being regulated by a screw and hand wheel is in convenient reach of the operator.

Each table can be drawn away from the cylinder without deranging its height, allowing free access and providing for the use of formed cutters and bits swinging in a larger circle than the knives.

The Solid Round Safety Cylinder Head is made of machine steel with long bearings running in self-oiling boxes. Its construction is such as to permit the use of four knives. The angle at which the knives are set insures clean, smooth, rapid cuts in all kinds of lumber. When it is desired to make mouldings two of the knives are removed. A hardened steel throat piece is inserted under the lip of each knife.

Hand Jointer

With Countershaft for belt drive

Motors are mounted on substantial bases and are connected with cutter heads by flexible couplings. Motors and starters are furnished to suit power currents in general use. Ask for Special Bulletins of Jointers with shaftless motor drive and ball bearings.

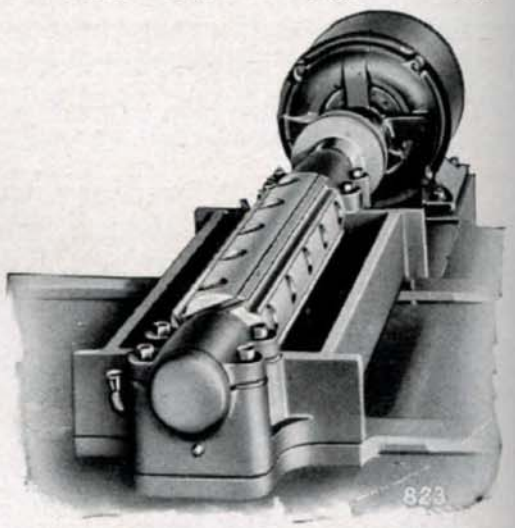
The Fence may be tilted to any angle from 90 degrees to 45 degrees and is adjustable to any desired position, allowing the use of the full width of the knives without removing the fence.

Each machine is equipped with one set of four knives, one socket wrench for cylinder head, one safety guard and one countershaft if for belt drive.

SPECIFICATIONS

	12″	16″	20″
Floor space, belted machine, inches	27x84	32x84	36x84
Size of Tight and Loose Pulleys	10x5	10x5	10x5
Speed of Countershaft, R. P. M.	800	800	800

	12″	16″	20″
Length front table	47″	47″	47″
Length rear table	35″	35″	35″
Width of tables	16″	20″	24″
Height of tables	34″	34″	34″
Weight belted mch.	1300	1500	1600
Weight belted mch., with motor			
Gross export, belted	1420	1675	1850
Cubic f. with motor			
Cubic ft. belted	40	53	59
Code word with motor	**Wohay**	**Wohbe**	**Wohbo**
Code word belted	**Woham**	**Wohap**	**Wohas**

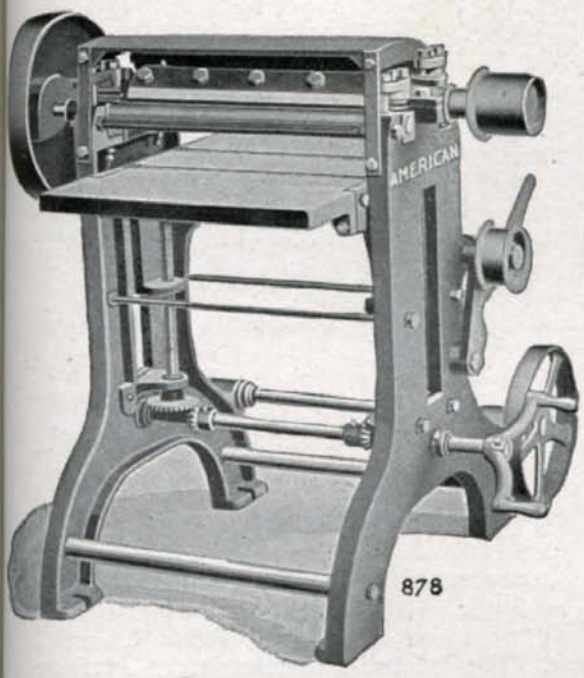


4-Knife Safety Head

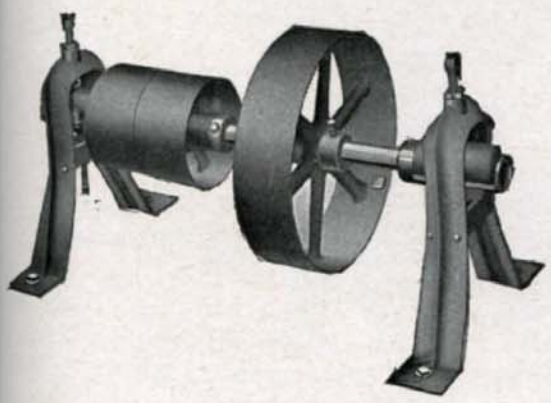
"Jewel" Planer

This **Planer** is designed to meet the needs of small shops and those requiring a light but good, strong, durable single-surfacer for general work at a low price. It is built throughout of the best grade iron and steel, and the workmanship is first class. It's simplicity, compactness and large capacity in proportion to its size, has made it very popular, and secured for it a very large sale.

While somewhat lighter than our "Pony" Planer, it possesses many of the valuable features of that machine, and is amply heavy for the work it is intended to do, being much heavier than any other planer of its class on the market. It works either hard or soft wood equally well, and is particularly adapted to planing short stock. The work turned out is first class and equal to that done by the larger, high-priced machines.



Equipped With Ball Bearings at Extra Cost



Countershaft

The Cutter Head is made from high-grade steel, and is accurately milled and balanced with lips projecting under the cutting edge of the knife to insure smooth work. Its position is not changed when adjusting for different thicknesses of lumber, so that the driving belt remains tight, though belted from any direction. All adjustments are quickly and easily made without loosening any bolts or screws, or disturbing the belts.

It has two **Steel Feed Rolls,** one in front and one in rear of the cutter head, the feeding-in roll being fluted to insure a strong, positive feed. Two speeds of feed are provided for by means of cone pulleys. The feed can be stopped or started instantly by means of a convenient tightener.

The Bed is very stiff, with heavy ribs underneath, and is accurately surface ground and fitted with two steel idle rolls. The rear section is adjustable.

The Planer is built in two sizes to plane up to 16" and 20" wide, and from ¼" to 6" thick. It is furnished with one pair of planer knives, and with or without countershaft, as ordered. Belting is extra. Feed belts require 13½' of 1½". Counter shaft has 8"x4" tight and loose pulleys. Speed, 900 R. P. M. Cutter Head Pulley, 4" dia., 3½" face. Speed, 3600 R. P. M.

16" machine, with countershaft. Shipping weight, 720 lbs.; gross weight, 820 lbs. Cubic measurement, 31'. Code Word, **Wohbu.**

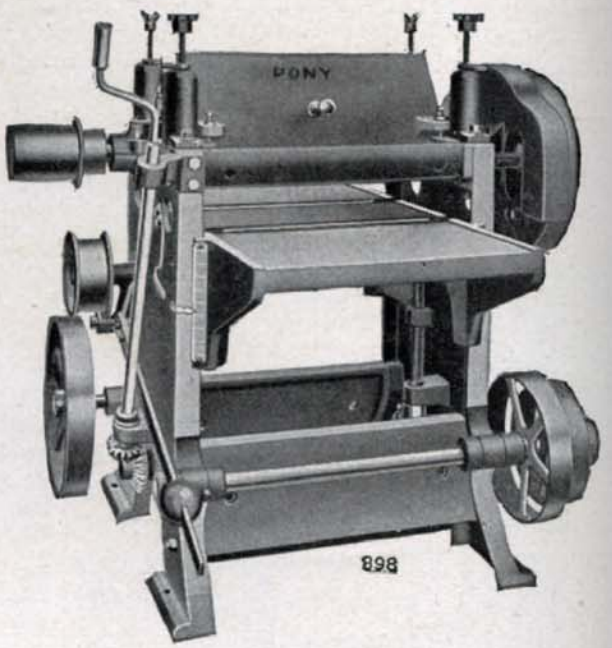
20" machine, with countershaft. Shipping weight, 745 lbs.; gross weight, 930 lbs. Cubic measurement, 35'. Code Word, **Wohce.**

If countershaft is not wanted, deduct 150 lbs.

"Pony" Planer or Surfacer

Modern Design, Compact, Rigid, Handy

This **Single Surfacer Pony Planer** is very similar in design to our "Triump" Planer and Matcher. It is compact and rigid and embodies the very best materials and highest class workmanship. It is intended for all kinds of surfacing and finishing, and will do first-class work on hard or soft wood with great rapidity. It is adapted to planing stock for sash, doors, window casings, panels, etc.; and as the rolls are close to the cylinder, and a pressure bar is provided, it will plane box boards and other short stock in a most satisfactory manner. It has no superior for this class of work.



Equipped with Ball Bearings at extra cost

The Main Frame is designed for strength and stiffness.

The Table is a single casting, deep, strong, heavily ribbed and gibbed to the outer edges of the main frame, to which it can be securely locked at any point, thus avoiding all rocking or vibration. It carries two 3" steel idle rolls, and is raised or lowered by hand screw. Top of table is accurately surface ground.

The Cutter Head is forged steel, accurately milled and balanced, with ample journals and babbitted bearings. It has lips to strengthen the cutting edge of the knives and insure smooth, fine work.

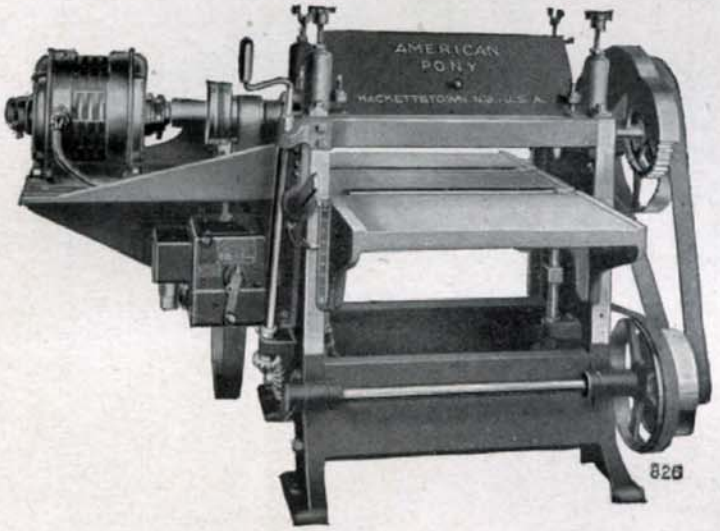
The Feed is positive and powerful, having two 3" steel rolls, one in front and one in rear of the cylinder, both strongly geared, the feeding-in roll being fluted.

Two Rates of Feed are provided and the feed is stopped or started by a belt tightener in easy reach of the operator. Built in two sizes to plane 20" and 24" wide, and any thickness from ¼" to 8". Furnished with countershaft and one pair of planer knives. Belting is extra. Width of cylinder belt, 5".

Feed belts require 20' 3" of 2". Tight and loose pulleys on countershaft, 12"x6". Speed, 800 R. P. M. Cutter Head Pulley, 4½" dia., 5" face. Speed, 3600 R. P. M.

20", weight 1,500 lbs. Code Word, **Woids.**
24", weight 1,700 lbs. Code Word, **Wohco.**
For export 20" machine, gross 1,760 lbs. Cubic measurement, 70'.
For export, 24" machine, gross 2,075 lbs. Cubic measurement, 75'.
If countershaft is not wanted, deduct 215 lbs.
Countershaft shown on preceding page.

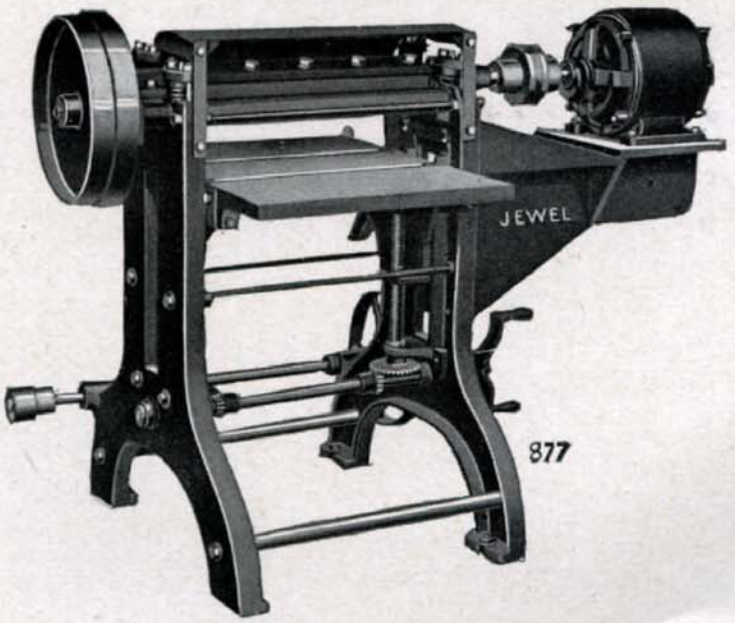
Direct Motor Driven Planers



The illustrations are of our "Pony" and "Jewel" Planers, fully described on preceding pages and equipped with direct motor drive.

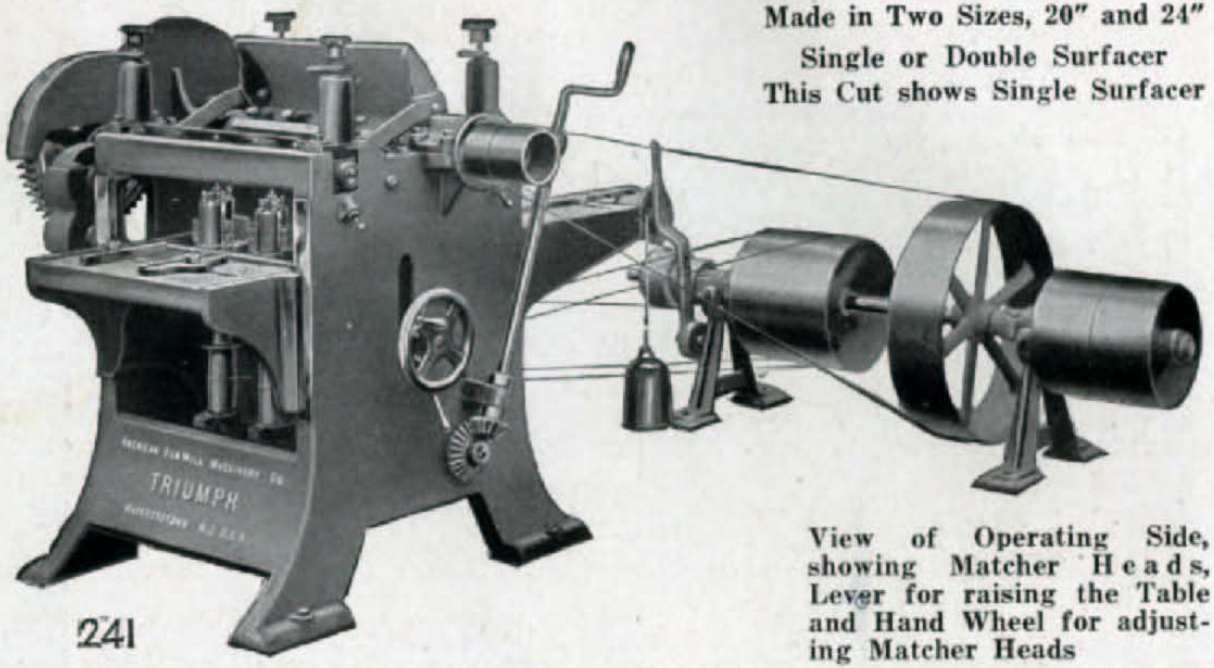
The Motor is mounted on a substantial base attached to the main frame and coupled to cutter head by means of a flexible coupling.

Motors and starters are supplied to suit power currents in general use, and in applying for prices a description of the current should be given.



American "Triumph" Planer, Matcher and Moulder

This is a very compact, rigid machine, and is designed to economize space and withstand the hardest usage, as well as to do the best class of work. There is an entire absence of vibration so common in small planers of this class; hence, the work turned out is uniform and equal in quality to that of large, expensive machines. The workmanship and material throughout are of the highest grade. It is adapted to the use of Saw Mills and small Planing Mills having limited room and power, where a machine is required for a large variety of work, such as planing and matching, beading, working flooring, ceiling, siding, casing, wainscoting, and a large variety of moulding and trim.



241

Made in Two Sizes, 20" and 24"
Single or Double Surfacer
This Cut shows Single Surfacer

View of Operating Side, showing Matcher Heads, Lever for raising the Table and Hand Wheel for adjusting Matcher Heads

The Table is cast in one piece and is deep and strong, being heavily ribbed and having arched braces under side. It is surface ground on top and has a right hand guide to prevent the material from leading against the side frame. The slides are long and placed far apart, being fitted to the outer edges of the main frame, to which they are gibbed, thus securing the greatest rigidity and least possible wear.

The Cylinders are made of forged steel and are accurately milled on four sides, with projecting lips to strengthen the cutting edge of the knives; two of the sides being slotted to carry beading and moulding knives in addition to the regular planing knives, which do not have to be removed when beading and moulding is being worked.

Matcher Spindles are unusually large and run in long babbitted boxes, ample provision being made for thorough lubrication.

"Triumph" Planer, Matcher and Moulder

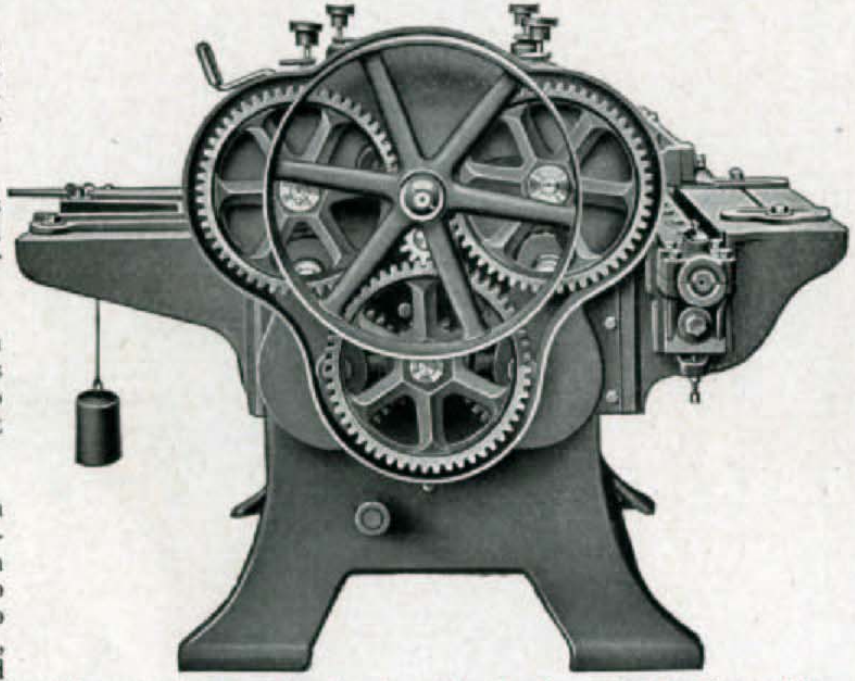
The Matcher Frames are also very strong and are carried by 1 1/8" round steel guides at top and bottom, provision being made to easily take up any wear or lost motion. One of the matcher spindles is adjustable by means of a hand wheel at the side of the machine and has an eccentric clamp for instantly securing it in any desired position.

Matcher Heads are made of bronze of standard design and will carry Matcher, Edger or Moulding bits 1/8" thick and up to 2½" wide. Shimer heads can be used when desired. Moulding knives can also be used on the main cylinder where the cut is not over ⅞" deep.

Chip Breakers. A heavy adjustable chip breaker is placed in front of the cylinder, which also acts as a hood. It may be swung back to expose the knives. Each matcher head has a chip breaker, one of which is self-adjusting.

Pressure Bar is adjustable and prevents any vibration of material between the cylinder and matcher heads. This pressure bar and the front chip breaker may be set close to the cylinder for special smooth surfacing and can be set out so as to clear moulding bits when used.

The Feed is very simple, powerful and positive, with steel rolls 3" diameter, turned from the solid, the top feeding-in roll being fluted. The feed is driven by a belt from the countershaft, to which a belt tightener is attached so that the operator can stop or start the feed at will. Two rates of feed are provided, namely 35' and 42' per minute, and the change from one to the other can be quickly and easily made.



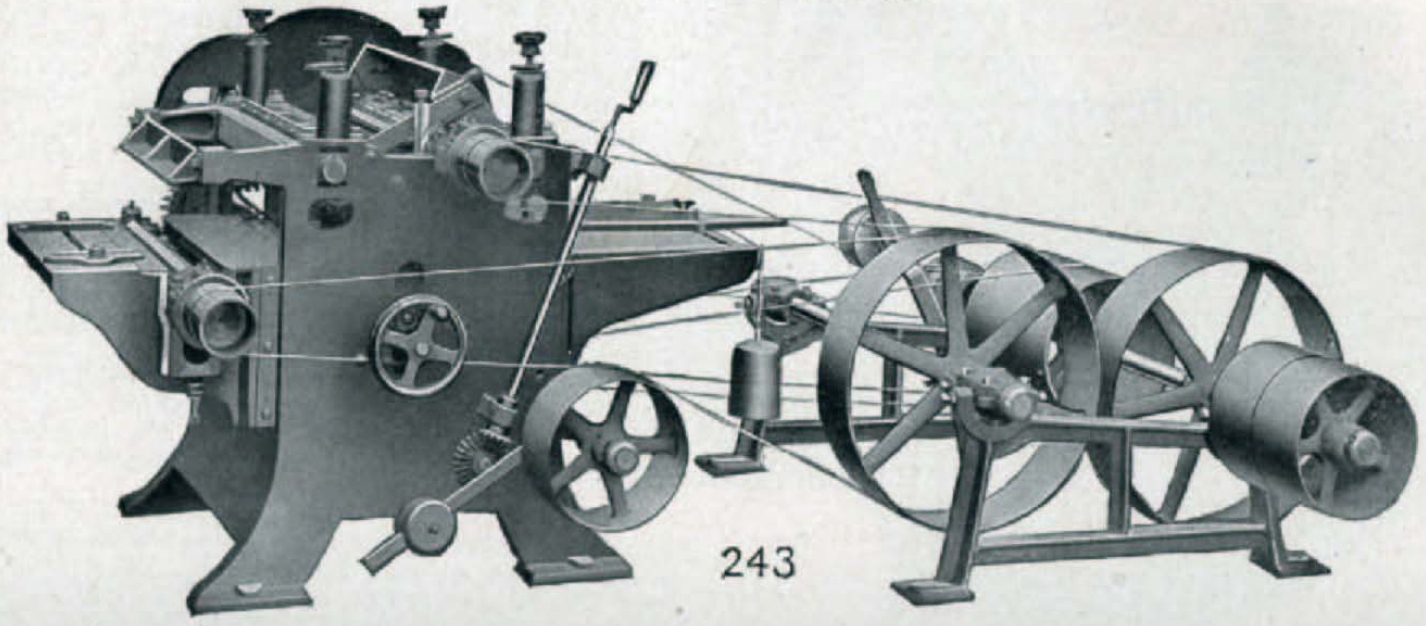
View of Feed Side, showing Double-Geared Machine with all Four Feed Rolls Driven

Each planer and matcher furnished with one set of planer knives, two beading bits, four 2" edging bits and one set standard matcher bits for 1" flooring. Belts are furnished, when wanted, at extra cost.

The Cut shows the machine double geared with both top and bottom rolls driven, but they are also furnished single geared with the top rolls only driven, when so desired.

Double Surfacer "Triumph" Planer, Matcher and Moulder

Cut shows Double Surfacer

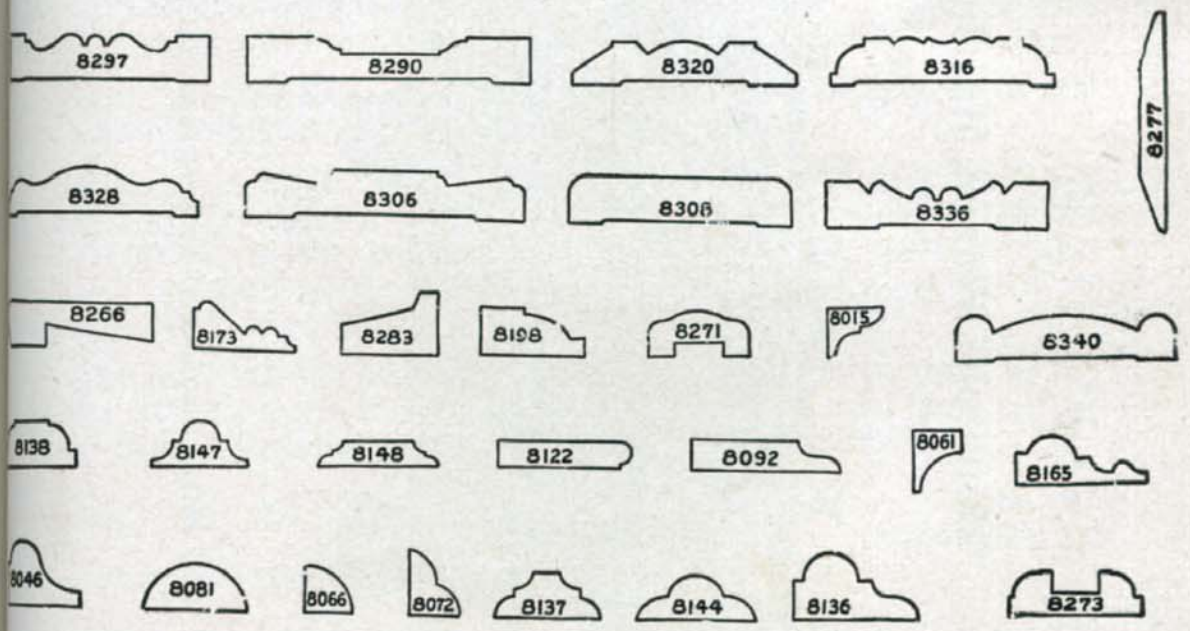


View of Operating Side, showing the Double Countershaft furnished with it, also Belt Tightener for stopping the Feed, and Method of Belting up the Machine

"Triumph" Planer, Matcher and Moulder

	Single Surfacer		Double Surfacer	
Planes any Width up to	20″	24″	20″	24″
Planes any Thickness from	⅜″ to 6″	⅜″ to 6″	⅜″ to 6″	⅜″ to 6″
Matches or Edges up to 2″ thick and up to	10″ wide	14″ wide	10″ wide	14″ wide
Tight and Loose Pulleys should run 800 R. P. M.	12″x6″	12″x6″	12″x6″	12″x6″
Floor Space, including Countershaft	8′6″x6′	8′6″x6′4″	9′x6′	9′x6′4″
Distance from center of Cylinder to center of Countershaft	5′6″	5′6″	5′6″	5′6″
Shipping Weight	2,250	2,440	2,850	3,000
Weight Packed for Export	2,750	2,850	3,450	3,700
Dimensions Packed for Export	90 c. f.	97 c. f.	108 c. f.	117 c. f.
Main Cylinder Belt, 6″ wide	14′8″	14′8″	16′	16′
Lower Cylinder Belt, 6″ wide	Not used	Not used	14′3″	14′3″
Feed Belt, 3″ wide	15′4″	15′4″	15′4″	15′4″
Two Matcher Belts, 3″ wide, each	14′3″	14′3″	14′3″	14′3″
Code Word	Woher	Wohet	Wohex	Wohfe

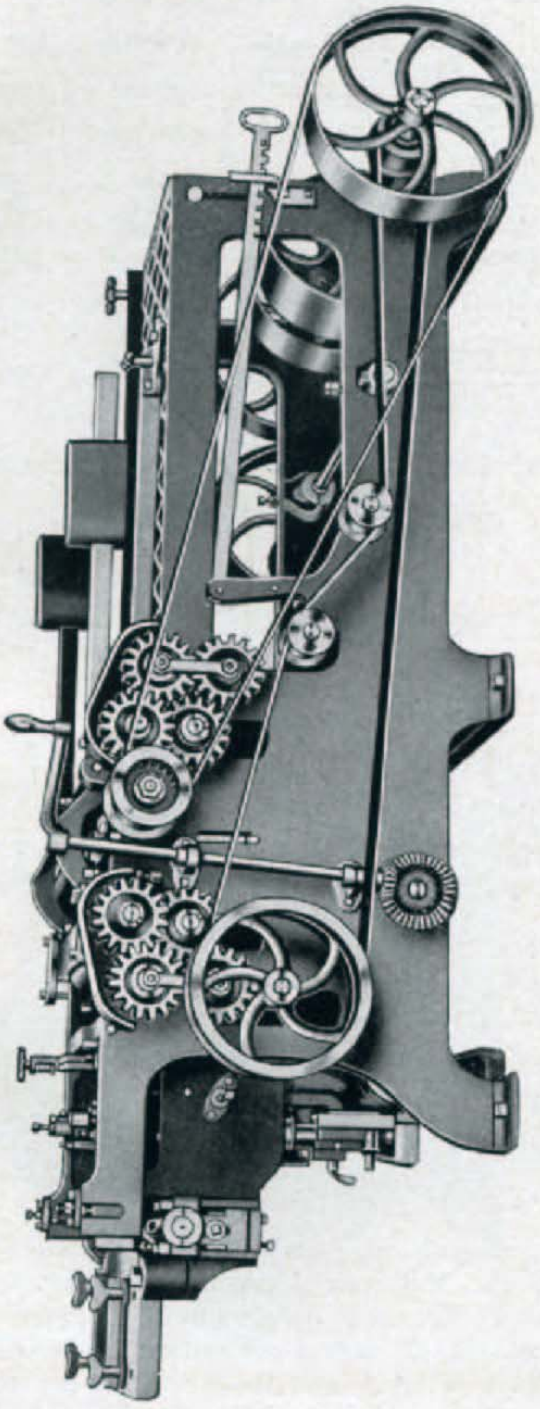
Some of the Shapes Which the "Triumph" and "Monarch" Can Work



These cuts show a small selection of the many varieties of moulding, trim, flooring, siding, etc., that can be worked successfully on the Corley Planers and Matchers. We can supply knives for any of these designs and many others. A set of knives comprises ordinarily from four to six, according to pattern selected, and the price per set varies according to shape and width of moulding selected. Moulding knives are sold by the inch in length, and should be measured across the cutting edge.

We also furnish regular Planer Knives for any make or size of planer.

"Monarch" Planer, Matcher and Moulder



Made Either Single or Double Surfacer. (Cut Shows Double Surfacer)

"Monarch" Planer, Matcher and Moulder

To meet the demand for a somewhat heavier machine than our "Triumph," we now offer our "Monarch" Planer, Matcher and Moulder, which is compact and rigid, and capable of turning out a large quantity of first-class work.

It is entirely self-contained and has the countershaft mounted on the main frame at the rear of the machine. The bed is very stiff and extends back over the countershaft.

Every part of the machine is in easy reach of the operator from the outside and is readily changed from surfacing and matching to surfacing only.

The Cylinders are made of the best grade solid steel forgings, and are slotted on four sides so that beading or moulding bits having a depth of cut not over 1¼" may be used without removing the planer knives.

Both cylinders are fitted with perforated pulleys, the top cylinder being double belted, and the lower one single belted. The journals on the top cylinder are 1⅞"x9" and those of the lower one 1⅞"x8", and the bearings are lined with best grade of babbitt.

The Pressure Bar and **Chip Breaker** are adjustable so as to provide ample clearance for moulding knives and bits.

Matcher Spindles are 1⅜" diameter and run in long babbitted bearings, which are self-oiling. They can be dropped below the bed when surfacing only is being done. Steel matcher heads are furnished, but **Shimer Heads** can be used when desired, and will be furnished at extra cost.

The machine will plane 24" wide, and any thickness from ⅜" up to 6". It will match from 2½" up to 12" in width, and from ⅜" up to 2" thick. Rate of feed from 30 to 60 feet per minute.

Each machine furnished with one set of 24" Planer Knives, two Novelty Siding Knives, four 2" jointer knives, two beading bits and one set of matcher bits.

Tight and Loose Pulleys on countershaft 12"x6½" should run 900 to 1,000 R. P. M. Belting required: Single surfacer, 31' of 4", 53' of 3"; Double surfacer, 48' of 4", 53' of 3". Belts are extra. From 10 to 15 H. P. required.

	Weight Net	Weight Crated	Weight Boxed for Export	Size of Case	Floor Space	Code Word
Single Surfacer	3,900	4,200	4,400	9'x4'x4'	11'x5'	Wohfo
Double Surfacer	4,350	4,600	4,800	9'x4'x4'	11'x5'	Wohfu

Four Speed Head Stock M. T. Lathe

CONTROL IN MOTOR

Code Word, Wohge

No. — MMT

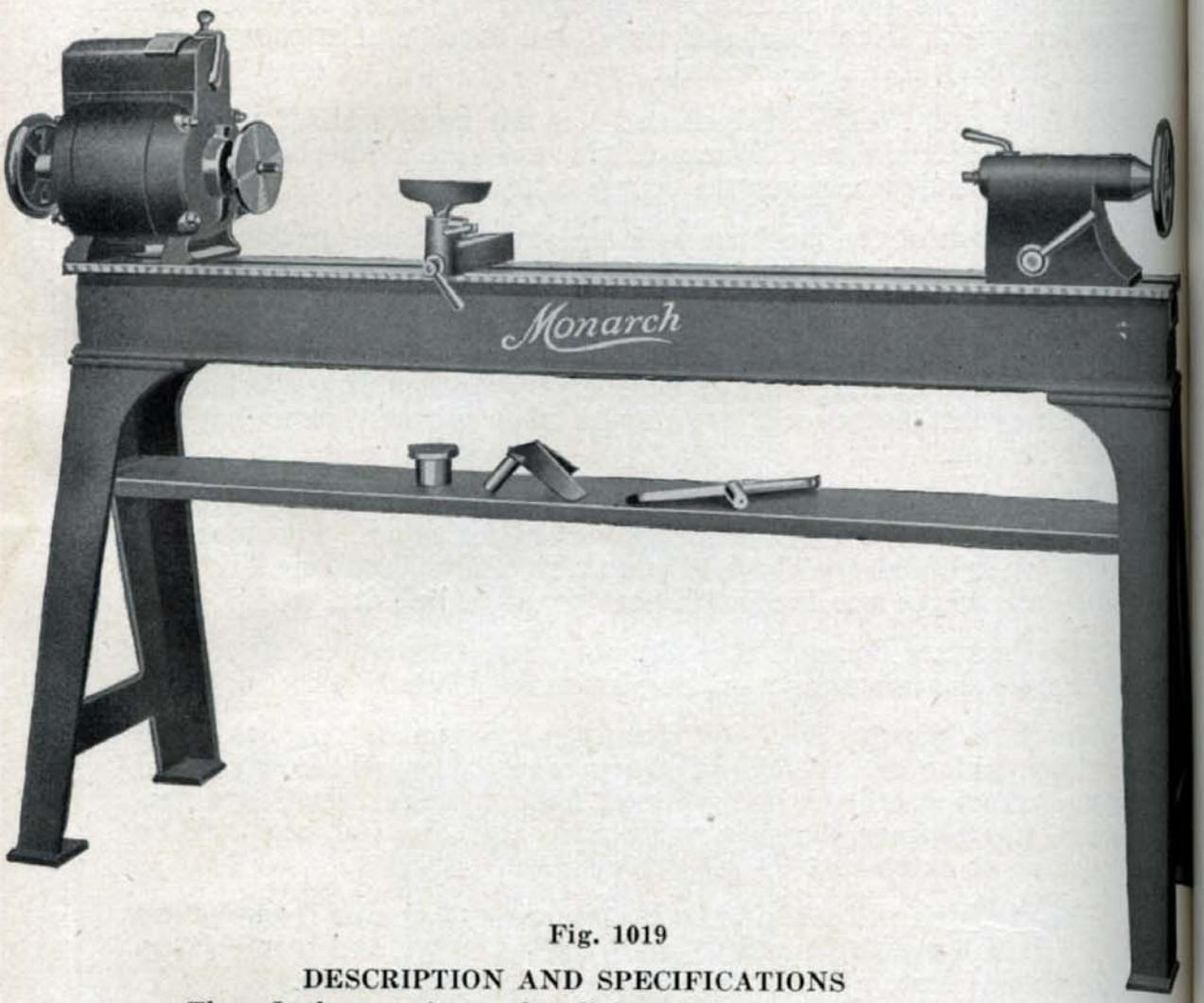


Fig. 1019

DESCRIPTION AND SPECIFICATIONS

These Lathes are designed as light weight machines yet strong enough to meet the severe requirements of Industrial Schools, Pattern Shops and Woodworking Departments of Factories.

The Bed is of the same general design as our MT Fig. 819 Lathe. It is cross-girted with brackets which form a knife edge on top to prevent holding of dirt or shavings.

The Legs are of the skeleton type, attractive design, strong and rigid.

The Motor Head Stocks are for 3-Phase, 60 Cycle, 220 Volt Current only, having four speeds, of approximately 600, 1200, 1800 and 3600 R. P. M. The Motor is wound two ways but is guaranteed at full ½ H. P. at the lowest speed developing more horsepower at the higher speeds.

The Control is built on top of the Motor and fully inclosed. The various speeds are obtained by a convenient handle within easy reach of the operator indicated by a dial.

Head Stock Spindles are threaded at both ends for face plates. The Motor Head Stock is fitted with a 7" combination hand wheel and face plate at outer end of spindle which may be removed when large face plate is used.

Tail Stock is of box design with screw spindle having 5″ range of travel. It is fitted to the bed and secured by a quick acting eccentric clamp.

The Tool Rest regularly furnished may be adjusted up and down and to and from the work. It will swing to any angle and is locked to the bed by an eccentric clamp.

Hand Feed Carriage with compound tool rest will be furnished at extra cost. The lateral travel covers the entire distance between centers. The transverse movement is 6°. The swivel is provided with degree graduations and graduations will also be provided for lateral and transverse movements at small extra cost.

SPECIFICATIONS

Swings over Bed .....12″
Swings over Tool Rest .....8⅝″
Movement of Tail Stock Spindle ....5″
Height to top of Bed .....37″
Height to center of Spindle .....43″
Spread of legs on Floor .....20″

Length of Bed ....50″, 62″, 71″, 74″, 89″, 99″
Distance between centers 24″, 36″, 42″, 48″, 60″, 72″
Net Weight, Lbs. 550, 590, 610, 630, 670, 770
Shipping Weight, Lbs. 650, 690, 710, 730, 770, 880

REGULAR EQUIPMENT

1—¾″ spur center
1—½″ cup center
1—conical center
1—2½″ screw chuck
1—6″ face plate
1—6″ angle rest
1—12″ "T" rest
1—drift rod
1—7″ combination hand wheel and face plate on outer end of arbor.

EXTRA EQUIPMENT ON ORDER

Hand feed carriage with compound tool rest (travels entire distance between centers.)
Floor Stand and 14″ face plate for outside turning.

"TURNING TOOLS"

All Turning Tool Prices Include Handles and Sharpening.

Can furnish as many sizes, styles and groups wanted.

Fig. 1042

Group "A" Fig. 1042
Code Word, Wohgu

1—1″ skew chisel
1—1″ spear point chisel
1—1″ straight chisel
1—1″ turning gouge
1—½″ round nose chisel
1—⅛″ parting tool
1—6″ inside caliper
1—6″ outside caliper

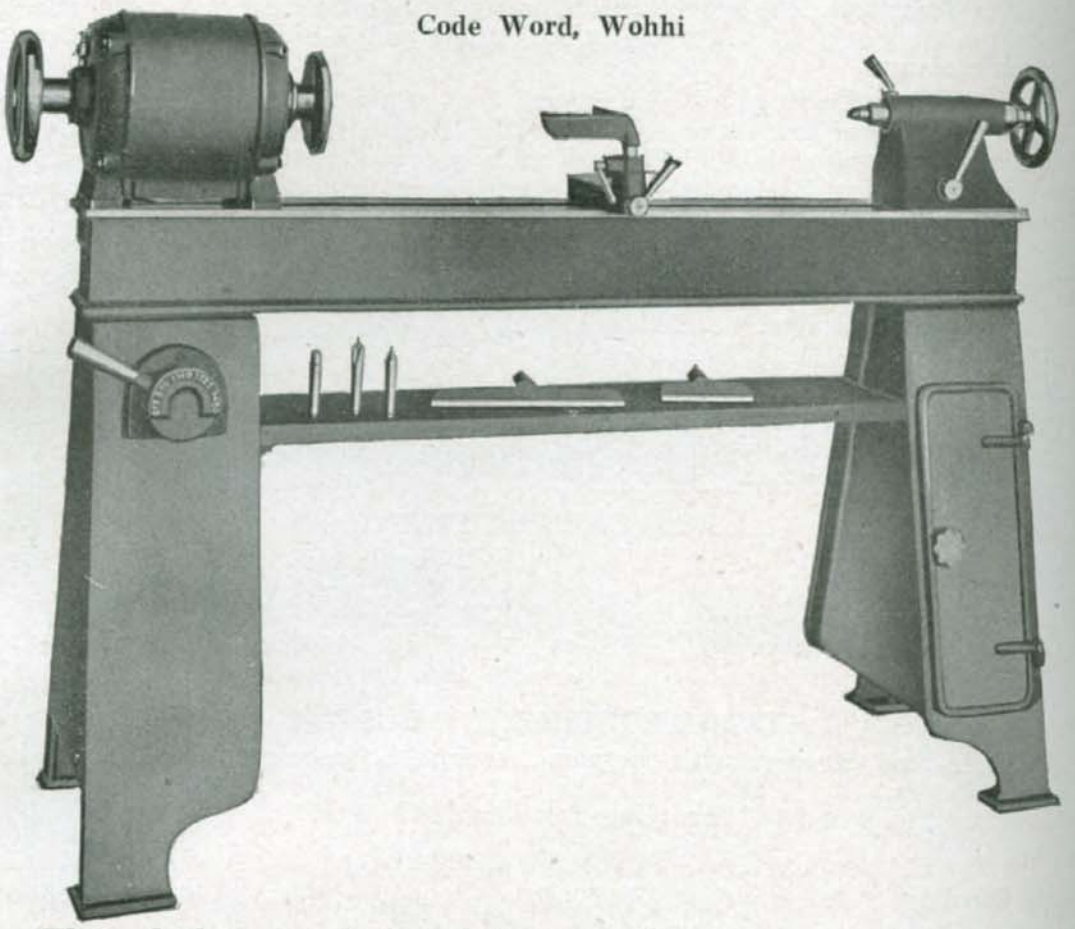
Group "B" Fig. 1042
Code Word, Wohha

1—½″ skew chisel
1—1″ skew chisel
1—1″ spear point chisel
1—1″ straight chisel
1—½″ turning gouge
1—1″ turning gouge
1—½″ round nose chisel
1—⅛″ parting tool
1—6″ inside caliper
1—6″ outside caliper

Manual Training Lathe

With Motor Head Stock

Code Word, Wohhi



These lathes are designed to meet the severe requirements of industrial schools and will commend themselves to the most critical investigator.

The bed is cross-girted with brackets which form a knife edge on top to prevent holding dirt or shavings.

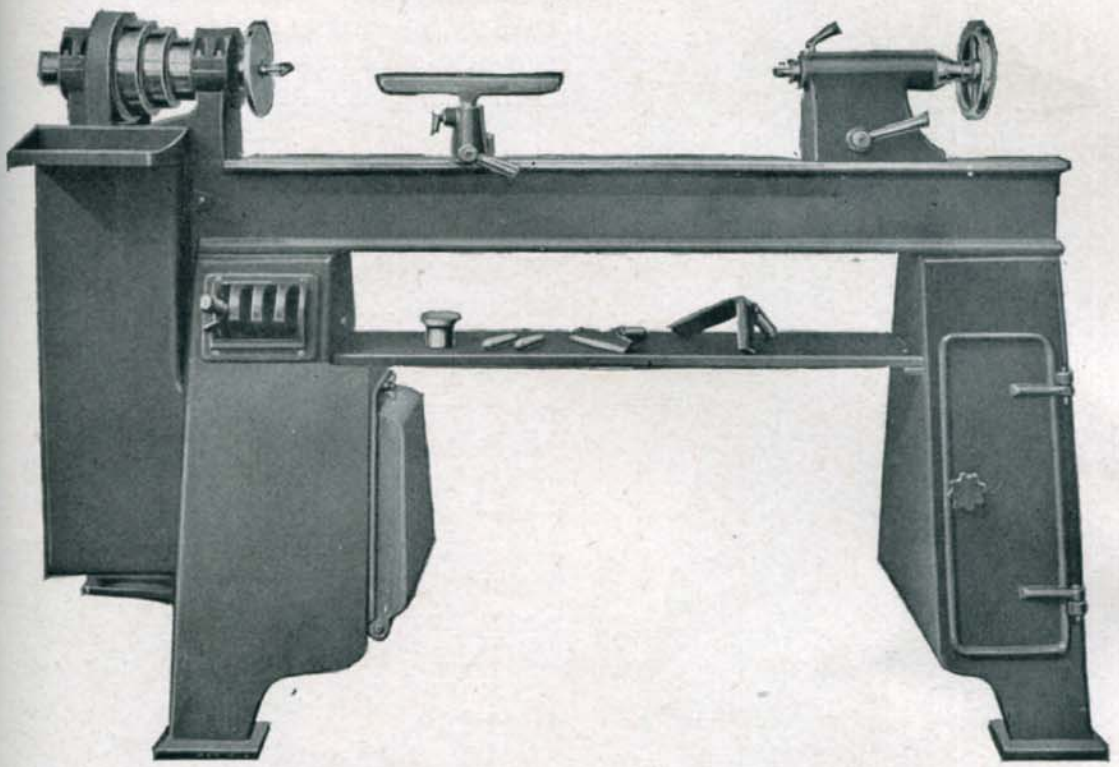
Cabinet Legs are of an attractive design, strong and rigid. The left hand leg of the Motor Head Stock Lathe (Figs. 819 and 846), forms a complete enclosure for the controller and a large door in the rear provides easy access. The control lever is outside convenient for the operator and is indicated for the various speeds. All wiring is concealed.

The motor for the belted type lathe (Figs. 761-2-3 and 852), is contained within the leg, a large door being provided for easy access. When this door is closed no chips or other refuse can reach the motor.

Head Stocks for both motor and belted types are planed to fit the bed and the spindles run in ball bearings. Motor Head Stocks are for 3-phase, 60 cycle, 220 volt current, having four speeds, of 570, 1140, 1725 and 3450 R. P. M. Direct Current head stocks are furnished on special order.

Manual Training Lathe

Code Word, Wohhi

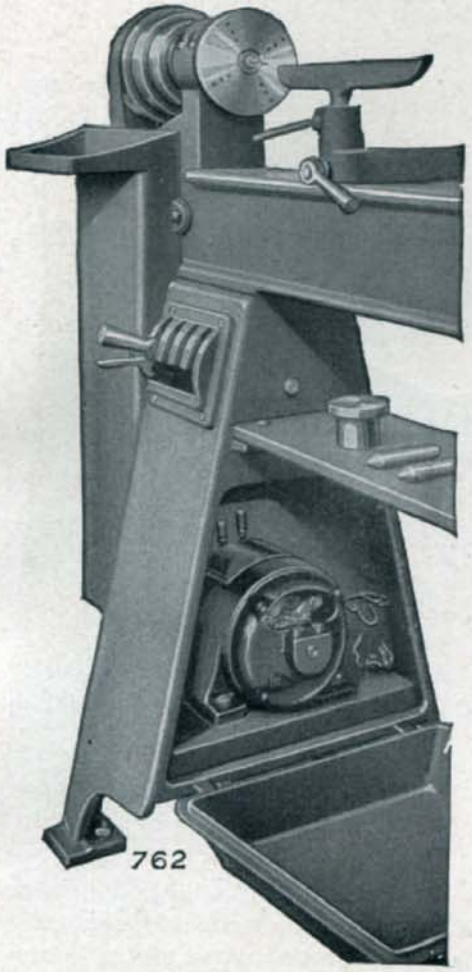


Belted head stocks are provided with four-step cone pulleys, the lower cone being direct connected to the motor shaft and fitted with an adjustable ball bearing for end of shaft opposite the motor. For this type of lathe motors are furnished for 1, 2, or 3-phase, or direct current. The one-handle control feature eliminates all hand shifting of belt. Dropping the handle releases the belt tension and the machine comes to a stop. A convenient brake provides for quick stopping. The handle may be moved instantly from one notch to another for shifting the belt and four speeds are obtained—835, 1200, 1730, and 2450 R. P. M.

Head Stock Spindles are threaded at both ends for face plates. Lathe with motor head stock is fitted with a 7" combination hand wheel and face plate at outer end of spindle which may be removed when large face plate is used. On the belted lathe the end of spindle is provided with a cap to cover the thread when face plate is not used.

Tail Stock is of box design with screw spindle having 5" range of travel. It is fitted to the bed and secured by a quick-acting eccentric clamp. Offset tail stock, having a movement of 1" in either direction, with quick adjustment, will be furnished at extra cost.

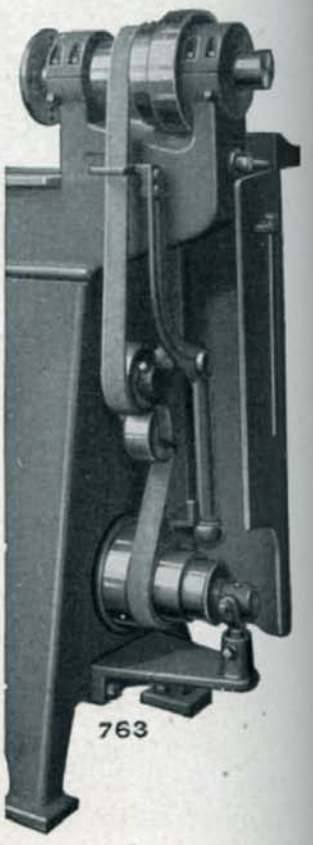
The **Tool Rest** regularly furnished may be adjusted up and down and to and from the work. It will swing to any angle and is locked to the bed by an eccentric clamp.


762

Hand Feed Carriage with compound tool rest will be furnished at extra cost. The lateral travel covers the entire distance between centres. The transverse movement is 6″. The swivel is provided with degree graduations and graduations will also be provided for lateral and transverse movements at small extra cost.

For outside turning a floor stand and 14″ face plate are furnished.

Covers for head stock and belts are furnished for belted type lathes as illustrated by Fig. 852. These provide a complete enclosure for the head stock and belt assembly.

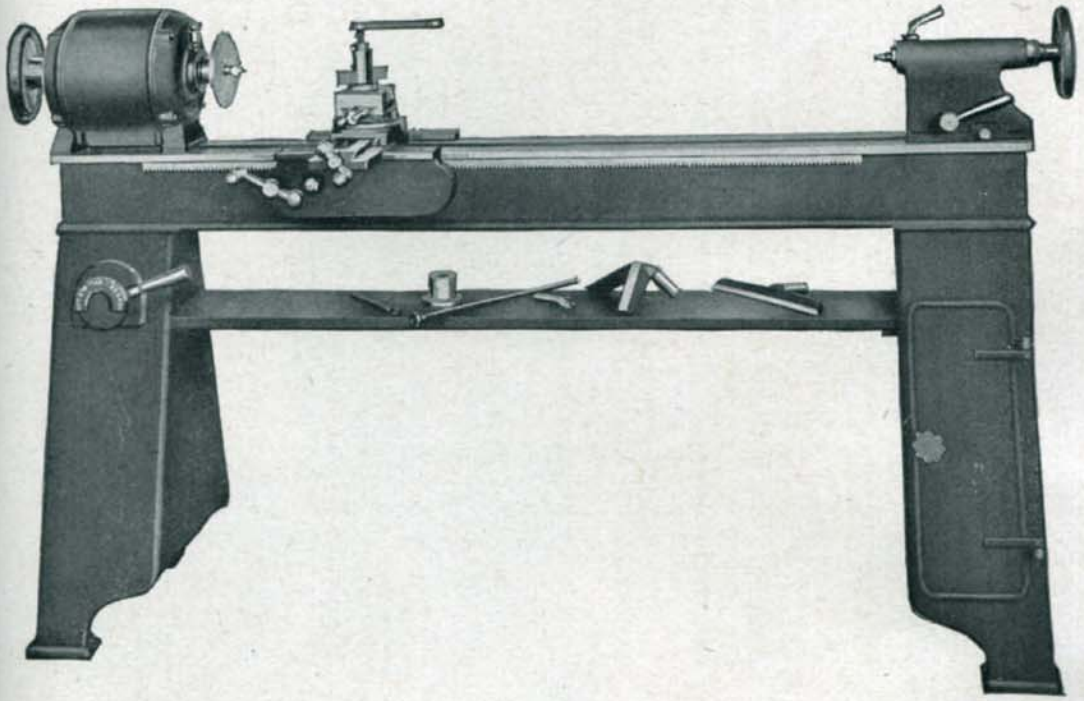

763

All lathes swing 12″ over the bed and 8⅝″ over the tool rest. Distance from floor to top of bed 37″, and to centre of spindle 43″. Extreme width on floor, 22″.

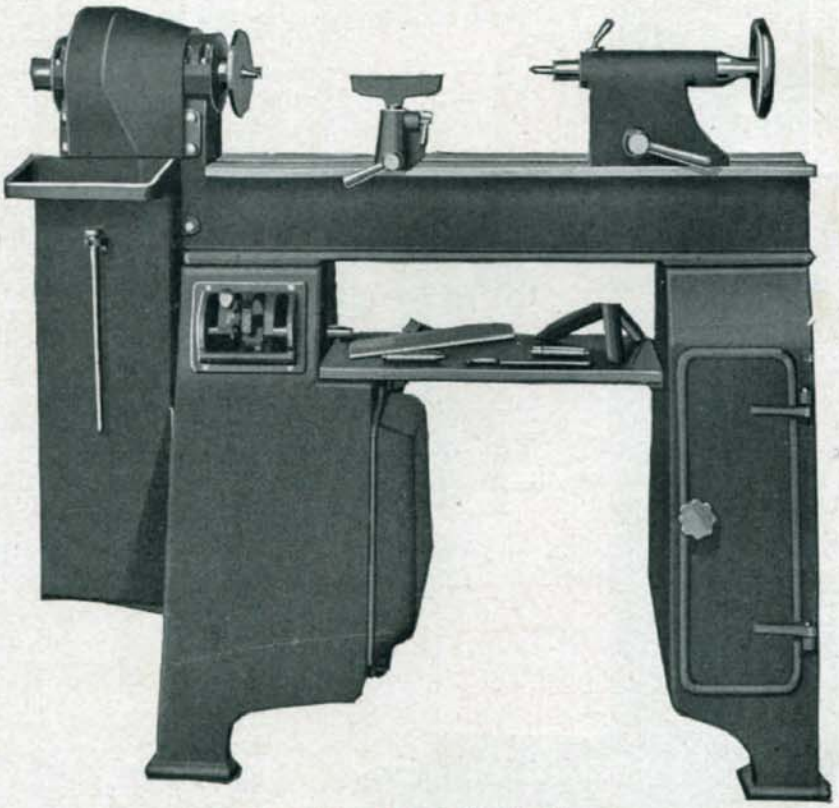
Equipment—One ¾″ spur center; one ½″cup center; one conical center; one 2½″ screw chuck; one 6″ face plate; one 6″ angle rest; one 12″ T rest; one drift rod. Belt is furnished with belted lathe.

Dimensions and Weights

Length of bed	50″	62″	71″	74″	89″	99″
Distance between centers	24″	36″	42″	48″	60″	72″
Shipping weight, with Motor	900	940	960	980	1020	1125
Shipping weight, less Motor	820	860	880	900	940	1050
Weight with Motor Headstock	840	880	900	920	960	1070
Boxing for export adds	100	110	120	150	160	200

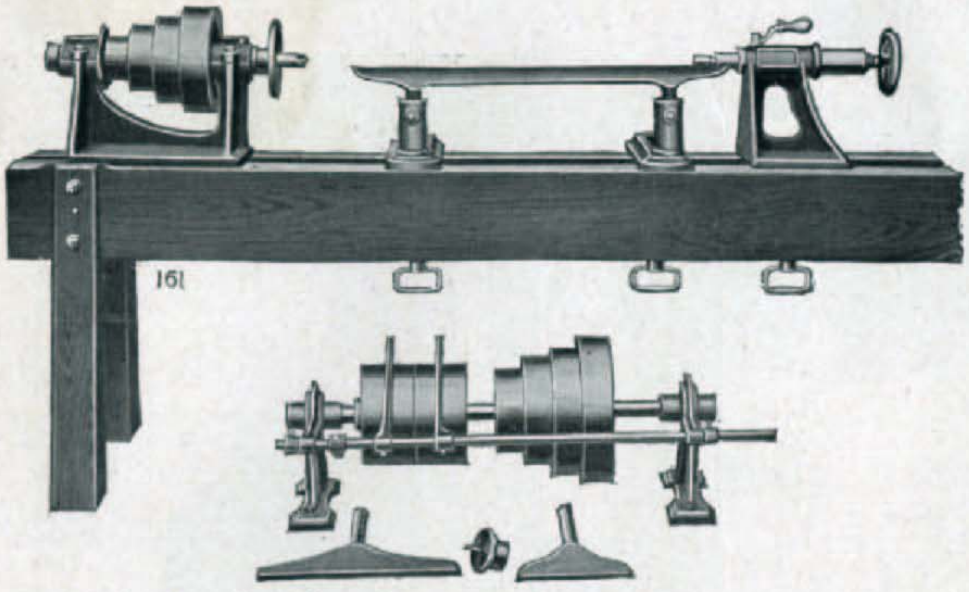


Hand feed Carriage with compound tool rest for either motor head stock or belted type lathes.



Lathe With Head Stock Cover

Wood Turning Lathes



Our Wood Lathes possess every desirable improvement and convenience. They are well built, neatly finished, and will stand the hardest kind of turning.

The Head and Tail Stocks are made heavy and rigid, so as not to spring or chatter when running. The bottoms of the head and tail stocks are planed on a mandrel, so that the centers come exactly in line when fitted to the shears.

The Spindles and Centers are made of the best steel. The cone driving pulleys are made of iron. The bearings of the head stock spindle are lined with genuine babbitt.

The Countershaft is complete, with shifter, and will be furnished with iron cone pulleys.

The parts furnished with a single-end lathe are the head and tail stocks, one each spur and cup center, one face plate, one screw face plate, two rest stands and three tool rests of different lengths, three clamp bolts for the stands and tail stock, countershaft with shifter. The **Double-End Lathe,** besides the above parts, is furnished with a floor stand with adjustable rest and one large rear face plate for turning large circles, for which an extra charge is made. The wood bench is not furnished unless specially ordered, at extra cost.

DIMENSIONS

Swing	Face of Cones	Changes of Speed	T. & L. Pulleys	Speed of Countershaft	Weight	Gross Weight	Cubic Measurement	Code Word
12″	2″	4	6″x3½″	800	340	490	13′	**Wohib**
16″	2″	4	8″x4½″	700	430	580	14′	**Wohic**
20″	2½″	5	10″x4½″	600	480	640	14′	**Wohif**

Fixtures for **"Double-End"** or **"Pattern"** Lathe, add 90 lbs. to above weights.

Monarch Bench Band Saws

No. X9
12" size

No. X20
16" size

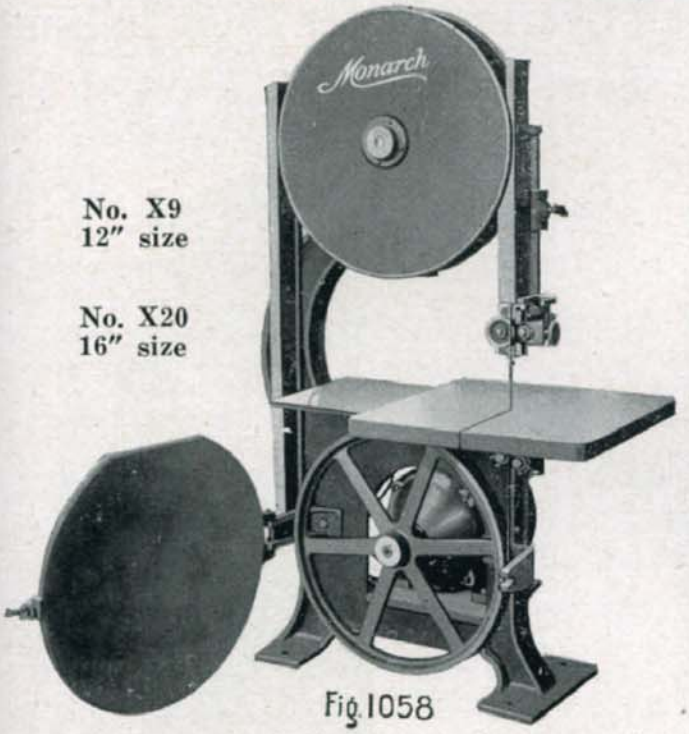


Fig. 1058

The small Band Saw, which may be operated from a lighting current or by belt from any convenient power, is so universal in its use as to be indispensable in shops not provided with large machines.

The table is of cast iron, surface ground and with babbitted throat for the saw. It tilts to any angle up to 45 degrees and is held by a positive clamp.

The upper wheel alignment is by means of a convenient hand wheel and the saw may be trained while the saw is in motion. The lower wheel is mounted on the motor shaft and the entire assembly is adjustable for alignment. For belt drive the lower wheel is mounted on a shaft with pulley to receive the belt.

The saw tension is regulated by means of a hand wheel, screw and compensating spring. It may be adjusted while the saw is in motion.

The wheel guards are of solid construction, securely fastened to the main frame. The Lower Guard is cast iron and hinged to a rigid frame and is easily opened for access to lower wheel or motor. When closed it is locked by a thumb nut which prevents vibration or noise. The Upper Guard, of sheet iron construction, is fastened to the bearing casing but at the same time provides easy access to the upper wheel and saw blade. They cannot sag or get out of place. The saw is also protected by a long guard at the back between Upper and Lower Wheels. Also an adjustable sheet iron guard extending from roller guide to top of Wheel.

The saw guide is of the latest improved anti-friction roller type.

The machine will be furnished as illustrated, with direct connected motor, or with pulley for belt drive. The standard motor is single phase—110-220 volt for 60 cycle current. Three-phase or direct current motors furnished on special order. When furnished with single phase motor a circuit breaker starting switch is furnished.

Size of machine	12"	16"
Height over all	35"	45½"
Length	22"	29"
Width	16"	23"
Size of wheels	12"x1"	16"x1¼"
Size of table	12"x12"	16"x16"
Max. Distance between table and guide	6"	8"
Distance from saw to column	12"	16"
Speed	1725	1150
Pulley for belt driven machine	4"	5"
Shipping weight with motor, lbs.	220	400
Shipping weight for belt drive	155	320
Export weight, with motor, lbs.	260	440
Cubic contents, C. F.	7½	13
Code Word	Woidy	Woife

Monarch 20 in. Ball Bearing Motor Built In Band Saw, No. 72

Fig. 1005
Front View

Fig. 1004
Rear View

Here is a Band Saw of the latest approved design, it was built to meet the most rigid requirements of safety regulations.

Every moving part is fully guarded, except the portion of Saw Blade in the cut.

The Upper Wheel is mounted on Ball Bearings, the best type obtainable, and applied to arbor making its lubrication a simple matter.

The Lower Wheel is mounted directly on the Motor Shaft, allowing the maximum of power for useful work.

Roller Saw Guides may be used both above and below the table.

Rubber Bands are securely fastened to the face of both Wheels.

The bottom of Frame forms an enclosure for Saw Dust.

Tension on Saw is obtained by means of screw and spring.

Motors of ½, ¾ and 1 H. P. may be used and furnished for the following Electric Currents:—

110, 220, 440-volt, two and three phase, 60-cycle, 875 R. P. M.

550-volt, three phase, 60-cycle, 875 R. P. M.

550-volt, three phase, 25-cycle, 715 R. P. M.

110, 220, 440-volt, two and three phase, 25-cycle, 715 R. P. M.

220, 440, 550-volt, three phase, 50-cycle, 970 R. P. M.

110, 220-volt Direct Current, 850 R. P. M.

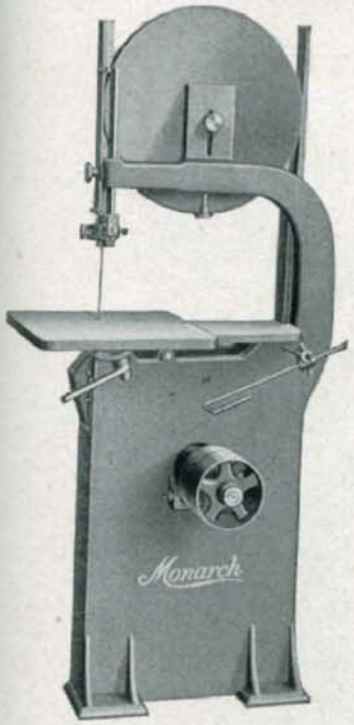


Fig. 1031
Can also be furnished without power, with tight and loose pulley as per Fig. 1031. Ball Bearings in top and bottom wheels.

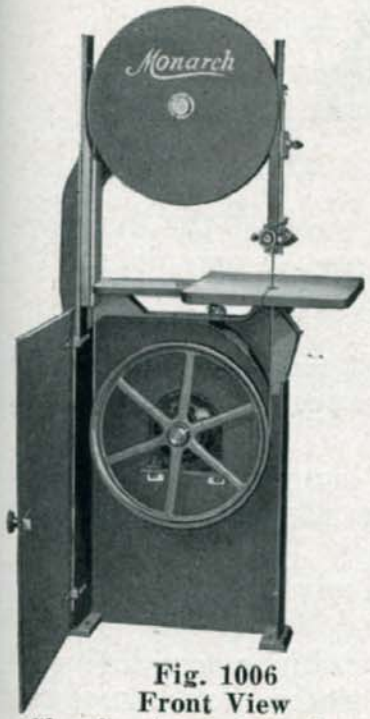


Fig. 1006
Front View
Showing lower guard open.

SPECIFICATIONS

Table—Length	21⅝″
Width	17¾″
Height	38¾″
Tilts 45° to right.	
Tilts 5° to left.	
Auxiliary Table:—	
Length	10½″
Width	9¾″
Wheels—Diameter	20″
Width of rim face	1½″
Saw Blade—Maximum length	11′ 6″
Saw guide raises above table	10½″
Distance between Saw and Frame	20½″
R. P. M. of Wheels	900
Horse Power ½, ¾ or 1.	
Over all height	73″
Floor Space—Length	35″
Width	22″
Weight, Net	450 lbs.
Weight, Shipping	600 lbs.
Cubic Contents	33 Cu. Ft.
Code Word with Motor Drive	**Wohig**
Code Word with Tight and Loose Pulleys	**Wohil**

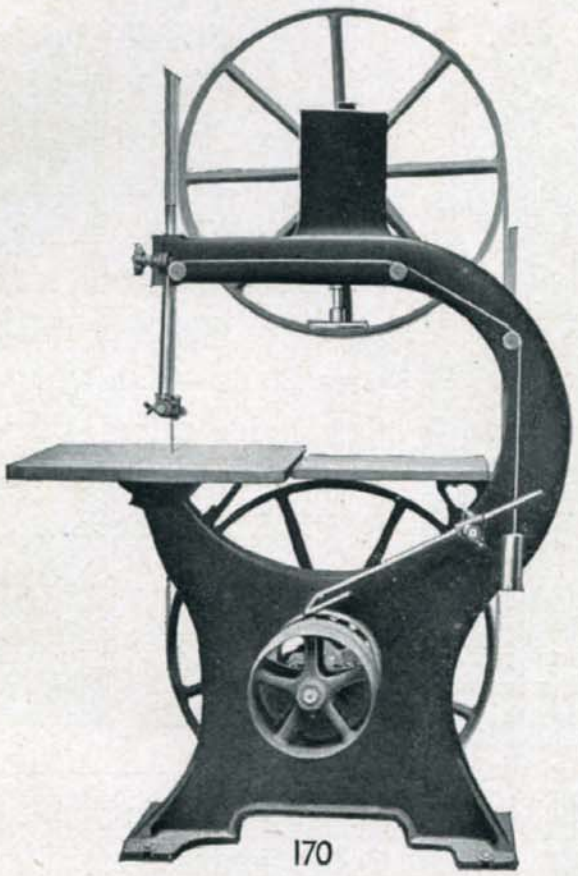
If less Motor, specify if wanted with Ball or Babbitted Bearings in lower wheel. Top wheel always furnished with Ball Bearings.

REGULAR EQUIPMENT

⅜″ Saw Blade, 11′ 6″ long.
Roller Saw Guide.
Brazing Tongs.
½ H. P., 3-phase, 60-cycle, 875 R.P.M Ball Bearing Motor.

Tilting-Table Band Saws

20″, 27″ and 36″



36″ Machine

These machines are built from new patterns of the most approved design. The frame is cored out and cast in one piece, with very broad base, insuring stiffness, good floor space, and absence of vibration.

The Table is iron, accurately planed, and may be tilted to any angle up to 45 degrees. It is held securely in position by a positive clamping device.

The Guide Bar is planed true and counterbalanced. All machines are fitted with Wright non-friction saw guide above the table and plain guide below.

The Belt Shifter will receive a belt from any direction above or below the floor, and is right at the operator's left hand.

Wheels are accurately turned and balanced, rims covered with rubber, and so made throughout as to guarantee them remaining round, and running true. Fitted with positive and convenient training device.

Band Saws

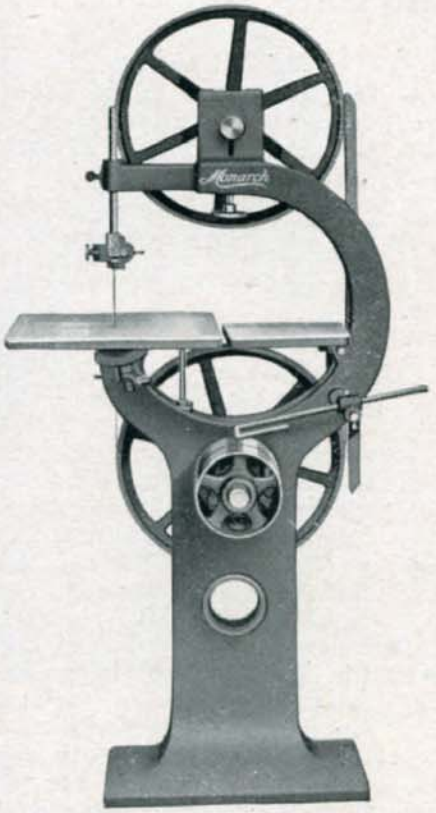
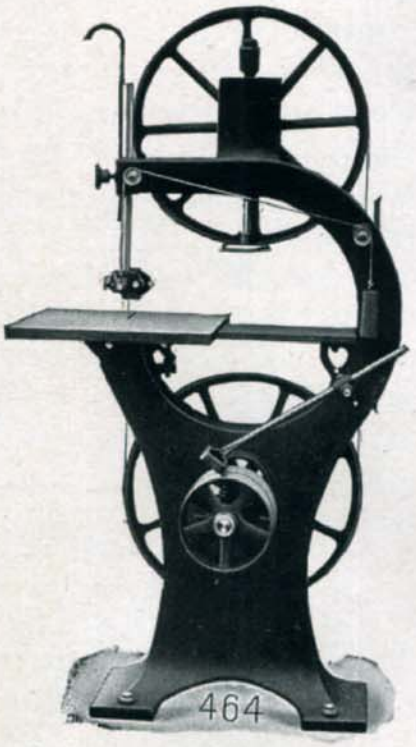


Fig. 1063

20″ Machine



27″ Machine

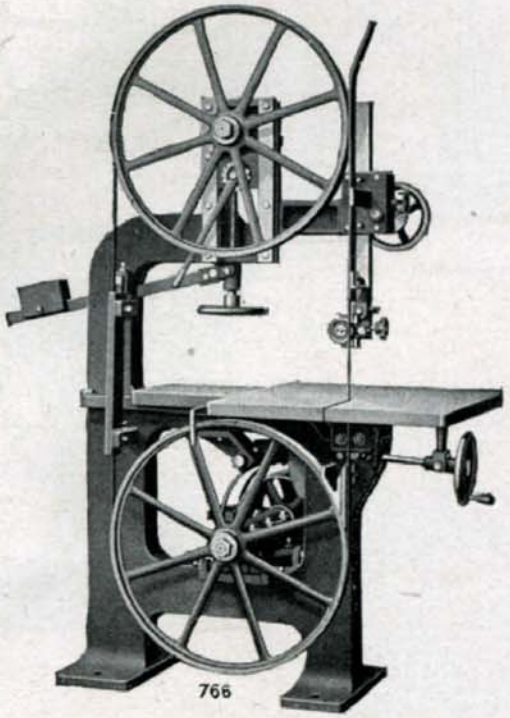
Each machine is furnished with guides as shown above, brazing clamp and tongs and one blade—½″ on 36″ and 27″ and ⅜″ on 20″ machine. 36″ and 27″ machines also furnished with ripping guide.

Motor, motor base and wheel guards furnished at extra cost. Can be furnished with Ball bearings at small extra cost. The 20″ machine is regularly furnished with ball bearings in top wheel.

SPECIFICATIONS

Size of Wheels	20″	27″	36″
Size of Table	22″x18″	22″x26″	28″x32″
Distance from Saw to Frame	20″	27″	36″
Guide Raises above Table	9″	12″	14″
Length of Blade	10′ 5″	14′	18′ 6″
Size of Tight and Loose Pulleys	7″x3″	10″x3½″	12″x4″
Speed of Pulleys, R. P. M.	400-450	400-450	400-450
Shipping Weight	450	940	1,400
Weight, Boxed for Export	550	1,140	1,650
Measurement in Cubic Feet	20	40	60
Code Word	**Wohja**	**Wohip**	**Wohim**

30-Inch No. 93 Band Saw


766

The Straining Device for the upper wheel is of wide range and very sensitive, due to the use of both spring and weight.

The Slide Head carrying the upper wheel bearings slides in a groove in the column and is held in place by steel gibs.

The table is made unusually rigid by extensive ribbing on the under side. It is cast face down to insure a clean surface, and after being machined is scraped and polished. A hand wheel and screw are provided for tilting the table to 45 degrees for bevel sawing and a brass index and pointer register the position of the table. A locking device fastens the table in any position.

Loose Pulley. Any one familiar with the use of high speed machinery will appreciate the advantage of our loose pulley construction. A brass bushing is fastened on the shaft, hollowed out next to the shaft to retain oil, which passes to the outer wearing surface through small holes. Over this bushing the pulley revolves and the wear of the pulley cannot affect the shaft. This bushing can be replaced without disturbing the shaft.

SPECIFICATIONS

	30"
Code Word	Wohji
Size of Wheels	30"x2"
Size of Table	20"x32"
Height of Table	36"
Distance from Saw to Frame	30"
Guide Raises	15"
Length of Blade	16'
Tight and Loose Pulleys	12"x4"
Approximate Speed	600
Net Weight	1,350
Shipping Weight	1,675
Export Weight	1,750
Cubic Contents	60 c. f.

Brazing clamp and tongs and one ¾" blade furnished with each machine

Guards

36" Band Saw
with wheel guards and motor drive

These machines will be equipped with hinged wheel guards, or completely guarded. The upper doors are made of wire mesh and the lower doors wire mesh or solid iron as may be preferred. When completely guarded in addition to the wheel guards, wheels are protected by guards on the opposite side and between the doors where the saw would be exposed. A guard also follows the guide and no part of the blade is exposed except at the cutting point.

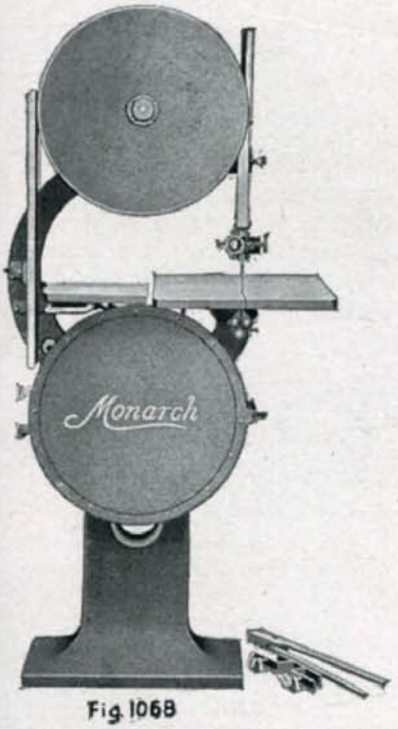
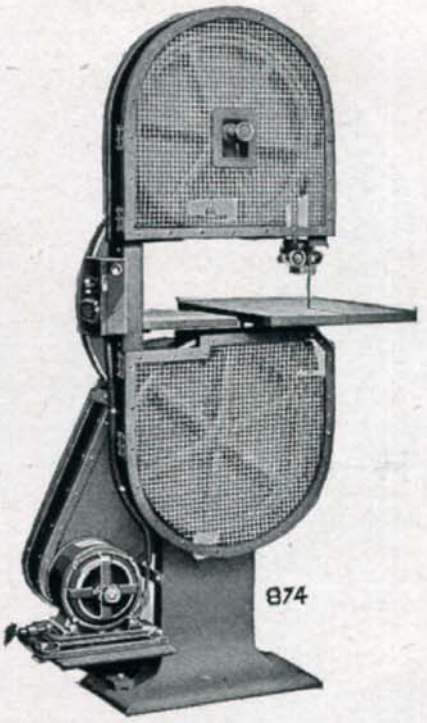


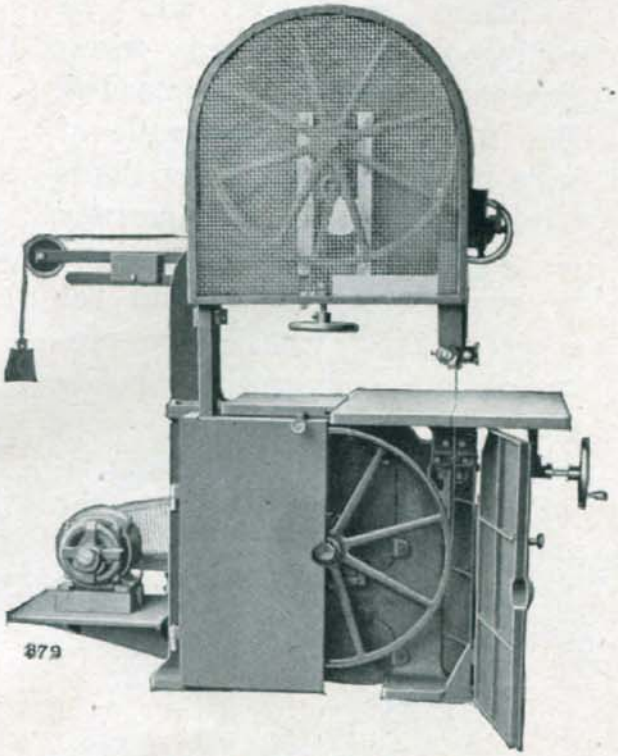
Fig. 1068

20" Band Saw
with wheel guards



20" Band Saw
Fully guarded, Motor drive

Motor Drive

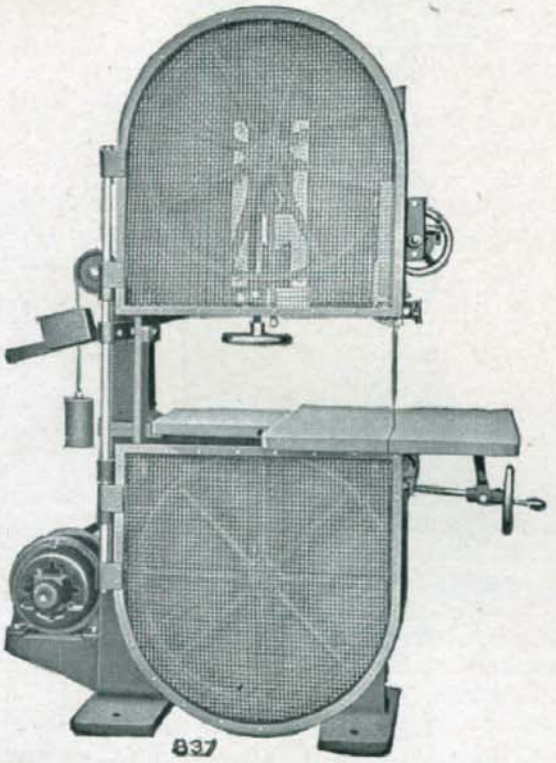


Fully guarded with cast iron lower doors

The motor is mounted on the base of the machine with belt drive from motor to the lower shaft. The motor is mounted on rails to provide ample take-up for the belt.

A suitable starting switch is furnished.

Motors are furnished for any standard electric current and prices will be quoted on receipt of specifications of the current to be used.

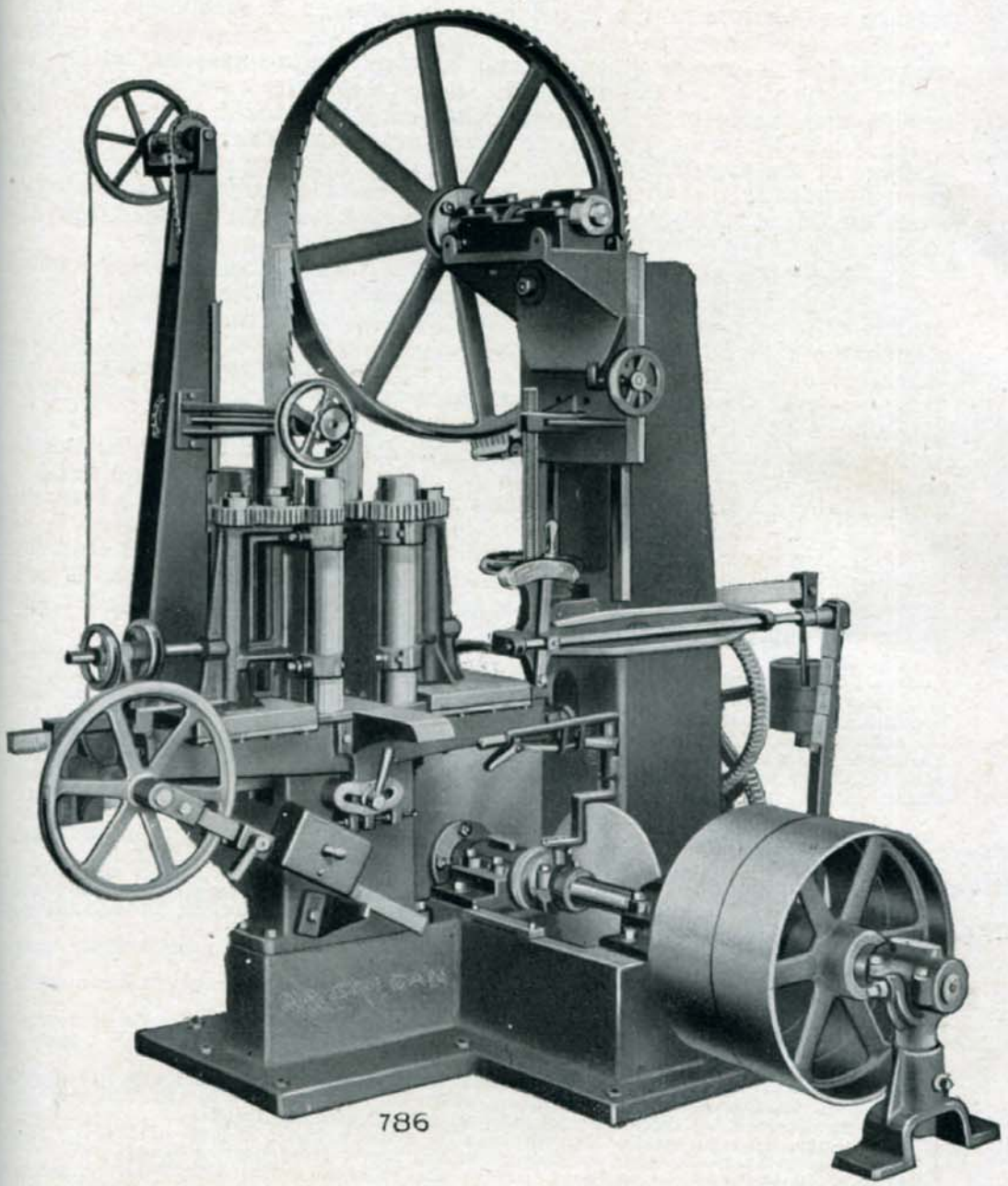


Fully guarded with wire doors

Fully guarded with belt guard. Belt idler not now used. Motor adjustable for belt tension.

42″ Band Resaw

Code Word, Wohka



This Band Resaw is an ideal machine for resawing stock rapidly and economically, up to 24″ wide and any thickness up to 8″. It is especially adapted to sawing veneer, etc., in furniture factories.

The Base is large and heavy, providing a splendid floor bearing and a solid foundation for the column, feed works and lower wheel shaft. The top surface of the base, as well as the parts mounted upon it, are planed to insure accurate fitting.

The Perpendicular Column is cast hollow, and placed as close as practicable to the wheel shafts. It furnishes the most direct support for the top wheel and its parts and on account of its great strength and rigidity permits operating the machine at top speed without vibration.

42" Band Resaw

Wheels. The lower wheel is of the heavy web type serving as a counterbalance and maintains the speed of the saw when it encounters knots. The top wheel is of the open type, having eight spokes. It is made as light as is consistent with proper strength and is therefore always susceptible to the action or speed of the lower wheels. Both wheels are carefully turned on the outside and inside of the rims and accurately balanced. They are secured to the shafts by means of flanges shrunk on the shafts and fitted to the faced surfaces of the wheels by heavy bolts. The wheel shafts are of large diameter, ground perfectly true and revolve in long, self-oiling adjustable bearings. The lower shaft has three bearings, giving support to both sides of the driving pulley.

The Feed Works. Consist of four driven rolls placed just close enough to clear the saw blade. The rolls have an automatic receding movement to accommodate the varying thickness of the board, a lever and weight tension restoring the rolls to their normal position. The roll housings have adjustable journal bearings, the back part which receives the thrust being of bronze, and also made that they may be set up by a screw to secure the correct relative alignment of the rolls.

Feed Roll Housings are mounted on a planed rail, all of which can be set at once for straight or bevel sawing. A half turn on the large hand wheel actuates the cut pinion and steel racks, causing the self-centering feed rolls to open instantly to the full width, or to completely close. The feed is driven from the lower wheel shaft and should the saw slow down the feed will do likewise. The friction on the lower wheel shaft, shifted by means of a lever, provides a fast or slow feed and abundant power, the power being transmitted to the rolls by compound gears.

The Guide Stand is built in proportion to other parts of the machine and is fitted to planed surface. Our saw guides are simple in construction. The top guide has tool steel roller back thrust for saw blade and revolves with the movement of the blade in dust-proof self-oiling bearings. It is counterbalanced and can be instantly raised or lowered by the operator from his natural position by a slight turn of hand wheel. It can be locked to any desired position. The lower guide is of the plain type. Both guides have hard wood side pieces, and both swing back out of the way to give the operator free access to the saw. This movement being accomplished without the aid of a wrench.

SOME LEADING FEATURES

Excepting the outside support for the lower wheel shaft, this Band Resaw is wholly self-contained.

The wheel shafts with their bearings are adjustable, to maintain perfect alignment at all times. The wheels are attached truly and securely to their shafts by an improved method.

Top Wheel has universal adjustment which allows the operator, in his natural position, to give the desired lead to the saw while it is in motion.

The Feed can be instantly adjusted to run fast or slow, and may be instantly stopped or started without change of position on the part of the operator.

Feed Rolls can be speedily set for siding, and also be instantly spread for a thick piece of stock and just as quickly closed for a thin piece.

The Back Half Bronze Feed Roll Journals, that take the pressure of rolls, in contact with stock, being resawed, are adjustable for wear where it actually occurs. This improved feature is peculiar to our machine alone.

The feed rolls are made sensitively and positively self-centering, yet one set of rolls can be locked to position while the opposite set yields for the variation in the thickness of stock. A screw is provided for hair line and independent adjustment of rolls.

The guides may be quickly thrown back to allow a rapid change of blades. They are adjustable every way—for light or heavy gauges, for wide or narrow blades.

The top guide is counterbalanced, and by our patented device it may be instantly raised or lowered for wide or narrow boards.

When it is remembered that a band saw blade is strained above and below the sawing point, it becomes plain why a piece of steel as thin as 19-gauge may be successfully used.

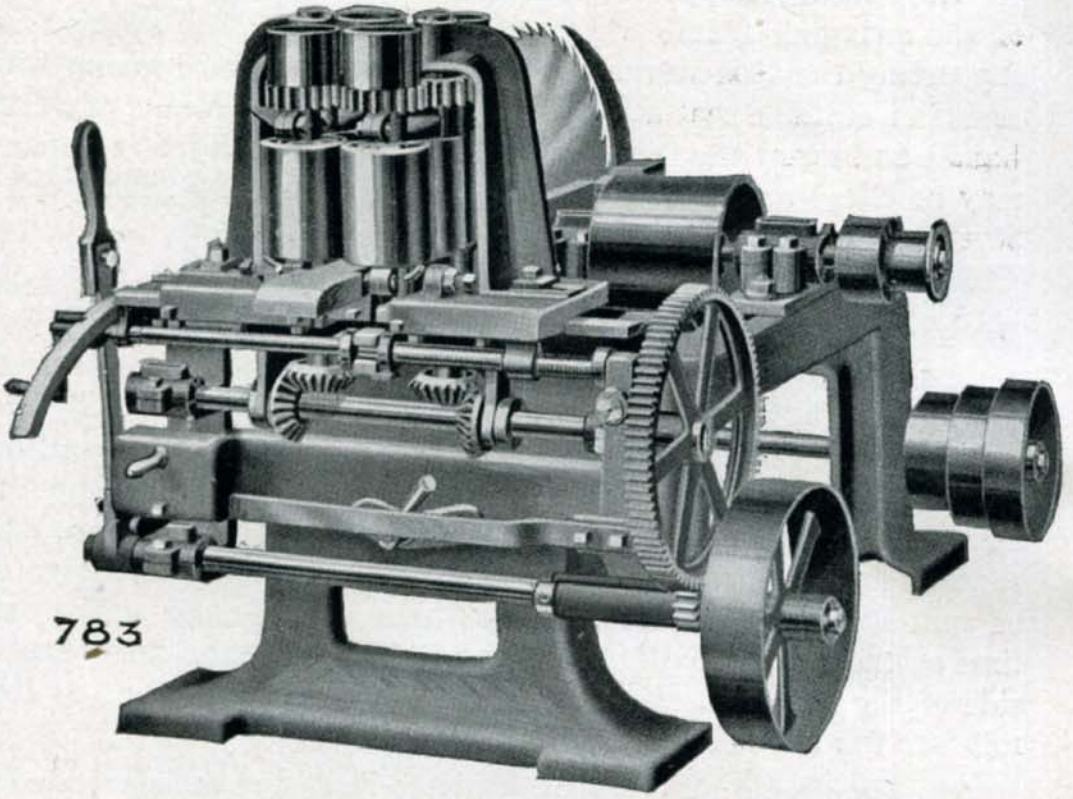
EQUIPMENT

One 4½" blade 21'6" long, 19-gauge, teeth spaced 1½" point to point, brazed, swaged and filed, ready for use. Thinner blades, or blades with finer or coarser teeth supplied at same cost. Improved brazing frame and iron, saw guides, guard for lower wheel, also wheel brushes for wheels, and an assortment of different size wrenches.

DIMENSIONS AND WEIGHTS

Home shipping weight	5,200 lbs.
Export shipping weight, boxed	6,000 lbs.
Cubic measurement	125'
Floor space over all	6' x 8'
Extreme height	8'
Diameter of feed rolls	3½"
Extreme height of feed rolls	24"
Wheels	42" dia. x 4" face
Diameter of lower wheel shaft	2 7-16"
Diameter of top wheel shaft	2"
Tight and loose pulleys	22" dia. x 6½" face
Speed of tight and loose pulleys,	600 r.p.m.

Circular Resaws, 24″, 30″, and 36″



Code Words, 24″, Wohki; 30″, Wohle; 36″, Wohlo.

This is a very powerful and compact machine capable of rapid and accurate resawing. It will split successfully hard or soft wood and saw straight or bevel, making it particularly desirable for saw and planing mills, furniture factories, etc. The frame is extra heavy, has broad foot plates, and will stand solidly on the floor.

The Feed Works consist of four 5½″ rolls strongly geared and held to their work by a heavy weight. The feed is driven from the saw mandrel by means of an intermediate countershaft so arranged to permit the tilting of the feed-roll frame without changing the tension of the driving belts. The feed can be instantly stopped, started or reversed. Two changes of feed are provided, of 50 and 75 linear feet per minute, with a saw speed of 1500 R.P.M. Faster feeds furnished if desired. Each set of feed rolls is carried in a cradle frame in such manner as to permit a thick board following a thinner one, or vice versa, and have all four rolls engaged with the ends of outgoing and in-feeding boards, even though they be of different thicknesses.

24″, 30″ and 36″ Circular Resaws

The housings supporting the cradle frames are gibbed to the rail of the swinging frame which supports them. The swing frame supporting the feed works has a large semi-circular bearing which rests in a suitable seat made part of the frame. By means of a crank handle and screw the frame, with entire feed works resting upon it, may be tilted as a whole by a single operation, for such work as bevel sawing.

The rolls are made self-centering to permit a board to follow another of different thickness without making a separate adjustment of the rolls and sawing both boards exactly in the centre. Or, if desired, either set of rolls can be made stationary by simply tightening a nut, while the opposite yields, thus enabling the operator to cut a quarter or half inch from a board any thickness up to 4 inches. Another excellent feature is that the feed rolls are made to work close up to the board rest, so that a strip half inch high can be split if necessary. Both sets of rolls are adjusted at the same time or one independently of the other, by a crank on the operating side of the machine. On the 24″ and 30″ machines the top front rolls are left off, not being required.

The Mandrel is 1 1/16″ diameter, with self-oiling bearings yoked together and fitted in planed, grooved ways on the frame, to adjust forward as required, allowing for all wear on the saw and keeping the saw close to the rolls. The machine can be made to carry two saws at once, so as to permit the cutting of three thin pieces of stock at one operation.

A planing attachment will be furnished on order at additional cost, for the purpose of jointing or planing the edges of boards and removing the ragged edges which the saw may leave in passing through the board. Illustration of this attachment will be furnished on application.

General Information

A 24″ saw splits 9″ wide. Mandrel pulley 9″ diameter, 8″ face, on 24″and 30″ machines and 12″ diameter 9″ face on 36″ machines, speed for 24″ saw, 1,500 R. P. M.; 30″, 1,200 R. P. M. Floor space required for 24″ and 30″ machines, 5′x5′. Shipping weight, 24″ and 30″ machines, 1,700 lbs. Boxed for export, 2,100 lbs. Cubic contents, 100 C. F.

A taper ground saw with 1½″ hole is furnished with each machine. Belts are not furnished. Belting required, 7′ of 2½″ and 10′ 8″ of 4″.

Ball Bearing Drum and Disc Sander

No. X8

Fig.1090

This machine is built as a plain drum sander or a combined drum and disc sander.

Bearings—The best grade ball bearings are used requiring the minimum of power to operate and relieving the worries about lubrication.

Main Frame—Is cast in one piece of cored form with large flanged base measuring 23x28½" at the floor. A Deflector plate directs the air from both the drum and the disc to a large opening in the rear of the machine. The suction created carries the dust to the same place where a screen is placed allowing the air to pass through but stopping the dust so it can not be mixed with the atmosphere of the work shop.

Motor—Is mounted in the frame on a hinged base—the weight of motor keeping the belt in tension. The deflector plate above mentioned prevents dust from coming in contact with the motor.

Drum Table—May be adjusted to the height of sand paper on the drum and may be swung to a vertical position where it is automatically held or it may be removed entirely without removing a single screw. When drum table is in vertical position the space available for curved sanding extends over the whole upper half of drum and some distance below its center.

Disc—Is mounted on end of drum shaft outside of main frame. It is entirely inclosed with a guard below the table and has its back and sides guarded above the table. To remove the disc it is only necessary to loosen two screws in top guard and three screws in mandrel collar and lift disc table out of quadrants.

Disc Table—Is mounted in quadrants which allow it to be set at 45° each way from the horizontal. The table always pivots in the plane of the face of the disc. The table may always be returned to the horizontal position without any adjustment by swinging a stop into position. A groove is machined in the table to take a bevel guide.

Drive Belt and Pulleys—Are entirely inclosed.

Drum Shaft—Is 1 7-16" dia. and the end on the side opposite disc is threaded and small face plate furnished to which a spindle sander, etc., may be attached.

Ball Bearing Drum Sander

No. X8

Fig. 1092

SPECIFICATIONS

Size of drum table	21½"x32"
Height of drum table	39"
Diameter of drum	10"
Length of drum	16"
Size of disc	18"
Size of Disc Table	10"x25"
Height of disc table	34"
Motor	
H. P.	1 or 2
Full load R. P. M.	1750
Pulley on motor dia. and face	5½"x2"
Pulley on shaft dia. and face	6"x2"
Belt width	1½"
R. P. M. Drum and Disc	1600
Floor space	32x39
Weight—Domestic shipping—Drum and Disc Sander	865 lbs.
Weight—Domestic shipping—Drum Sander only	725 lbs.
Weight—Export shipping—Drum and Disc Sander	1065 lbs. cu. ft. 28
Weight—Export shipping—Drum Sander only	925 lbs. cu. ft. 26

Combined Machine—Code Word, Wojgo
Drum Sander only—Code Word, Wojgu

REGULAR EQUIPMENT

Miter Gauge
1 H. P. Motor
2 H. P. Motor extra on order
1 small face plate for small cylinder sanders.

Motorized Hollow Chisel Mortiser

No. X1

The XI Vertical Hollow Chisel Mortiser is designed for light mortising in hard or soft woods. It is a well made tool and free from vibrations and the chisel is held rigidly at all points of stroke. The same will mortise 3½" deep with ½" chisel in hardwood, or with ⅝" chisel in softwood; and will bore 4" deep with ¾" bit and is easy to operate.

¾" hollow chisels may be used.

A vertical motor is mounted on chisel ram, which is operated by foot power and slides on ways, gibbed to take up wear.

Bit spindle is direct connected to motor shaft and has a speed of 3600 R. P. M.

Adjustable stops control depth of hole without altering height of table.

Foot lever and connections are adjustable for stroke and power.

Table slides, up and down, in and out and to left or right, on machined ways gibbed to take up wear. The first two sets of movements being controlled by hand wheel and screw, the last by hand wheel, rack and pinion, and is regulated by stops. The table tilts 45 degrees to right or left.

A clamp on front of the table, operated by hand wheels holds stock against the stop at back of table. Renewable wooden top to table for through mortising. Adjustable hold down and top back stop.

By removing the table assembly from the ways, a door 30" wide may be mortised.

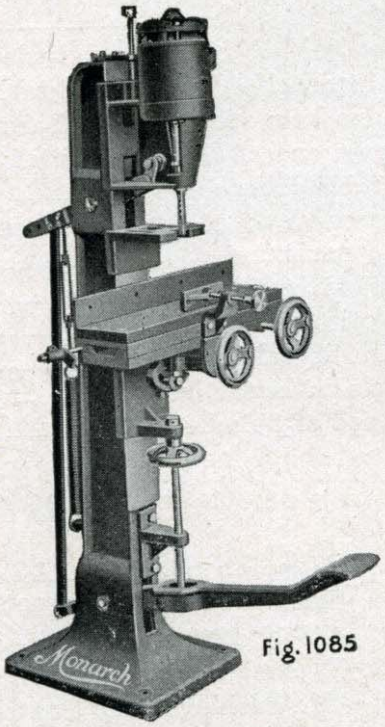


Fig. 1085

Direct Motor Drive
Code Word, Wojge

SPECIFICATIONS

Height over all	66"
Floor space	36"x40"
Length of Table	24"
Width of Table	6"
Vertical Adjustment of Table	12"
Travel of table in and out	4"
Travel of table lengthwise	12"
Travel of table clamp	3¾"
Dist. Center of Chisel to back stop (max.)	4¾"
Dist. End of Chisel to table top (max.)	13"
Adjustment of depth stop	4"
Vertical travel of chisel	4"
Dia. of hole in spindle for bits	½"
Dia. of hole in chisel ram	1⅛"
Shipping weight	530 lbs.
Export weight	620 lbs.
Cubic contents	22 cu. ft.

One ⅜" chisel and bit, two bit bushings and two chisel bushings and one ½ H. P. Motor, 3600 R. P. M., are furnished with each machine.

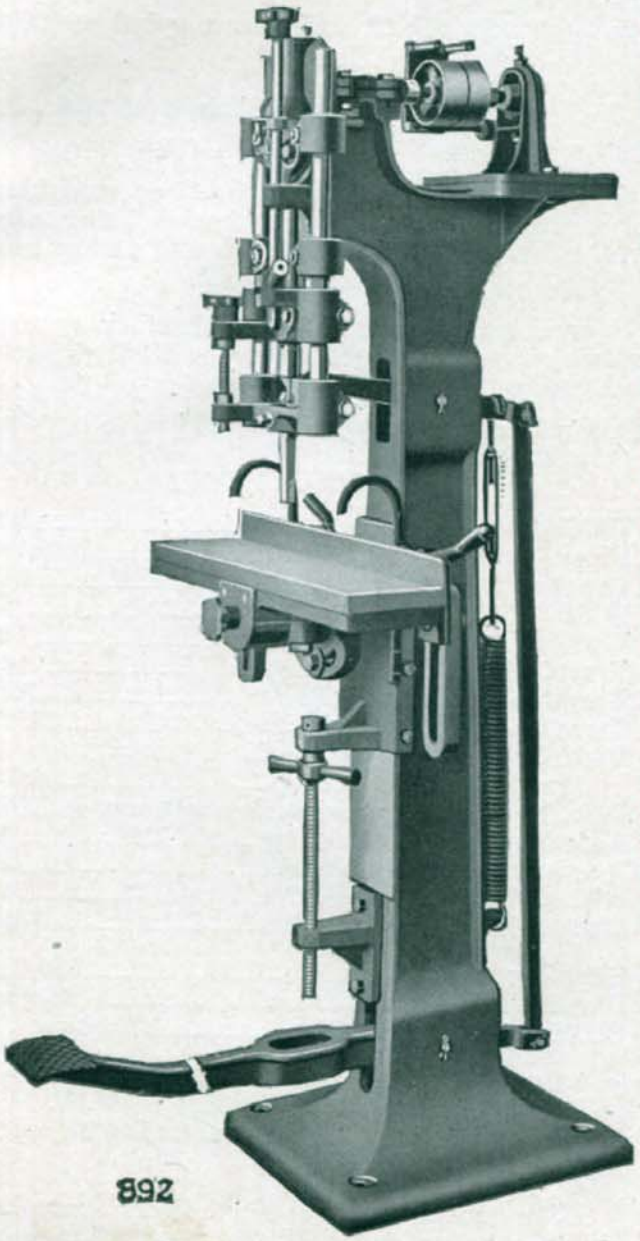
The motor may be for direct current, single, two or three phase alternating current.

Belt Driven Vertical Hollow Chisel Mortiser

No. 892

This machine is designed to operate easily and to give maximum production with ½″ or smaller chisels and ¾″ or smaller boring bits, and will perform these operations in hard, dry wood. Chisels up to ¾″ may be used.

The frame is cast in one piece and is provided with a base of ample dimensions to insure a firm support.



Code Word, Wohmy

The gear shaft is fitted with 4″x1½″ tight and loose pulleys and an outer bearing for shaft—a handy belt shifter is also provided.

All necessary adjustments are provided for.

SPECIFICATIONS

Height over all	70″
Floor space required	24″x40″
Length of table	24″
Width of table	6″
Vertical adjustment of table	11″
Horizontal adjustment of table	4″
Table tilts, either side	45 degrees
From end of chisel to top of table (maximum)	12″
From center of chisel to fence (maximum)	4¼″
Adjustment of depth stop	4″
Vertical travel of chisel	3¾″
Hole in spindle for bits	½″
Hole in chisel bar	1⅛″
Speed of Spindle	2400

Shipping weight	500 lbs.
Export weight	700 lbs.
Cubic contents	24 cu. ft.

One ⅜″ chisel and bit, two bit bushings and two chisel bushings furnished with each machine.

Single Spindle Shaper and Router

No. X19

Code Word—Wohnu

FIG. 1046

High Speed Motorized Machine, equipped with high grade Ball Bearings.

Here is a Machine up-to-the minute in design and workmanship. A high grade, high speed, single spindle Shaper. All refinements required for particular work are incorporated in this Machine at a very low cost. A Machine designed primarily as a light weight Shaper but with the metal so arranged to give ample strength where most required. It will cut without reversing, against, across, as well as with the grain. The high speed spindle (8400 R. P. M.) eliminates the necessity of reversing as required in the slower speed Machines.

Single Spindle Shaper and Router
No. X19

THE SPINDLE is exceptionally heavy and runs in the best obtainable Ball Bearings, eliminating the necessity of having to take down and rescrape. It is raised and lowered by means of a foot lever or by a hand lever, allowing the use of a routing bit.

THE TABLE is well ribbed and detachable, least weight consistent with strength and rigidity.

THE MAIN FRAME or column is cast in one piece, Motor and Belt being completely assembled inside of frame.

There can be no oiling troubles and the Machine is always ready to respond. The High Speed is obtained without excessive cost or cycle changes, by belting direct from Motor to Spindle; the belt is always held at proper tension by means of a conveniently located spring.

SPECIFICATIONS

Diameter of Spindle ..... 1 1/16"
Diameter of Thread at top of Spindle ..... 1"
Diameter of Removable Top of Spindle where collar fits ..... 5/8"
Length of Removable Top of Spindle where collars fit ..... 4"

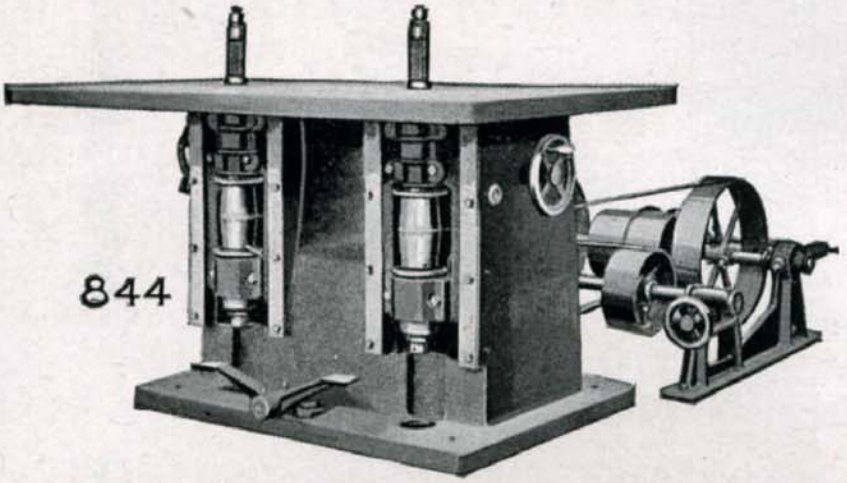
Machine regularly furnished with Routing Chuck for ½" Shank Bits and ½" Routing Bit.

1" dia. x ¼"
1" dia. x ½"
1" dia. x ¾"
1" dia. x 1"
} Size of Spacing Collars

2 Chuck Collars ½"x1½"
26" x 36" size of Table.
4¼" Diameter of Hole in Table.
1¾" Diameter of Hole in Rings.
5½" x 2¼" Diameter and Face Driving Pulley.
2½" x 2¼" size of Spindle Pulley.
8400 R. P. M. Speed of Spindle.
3600 R. P. M. Speed of Motor.
21" x 36" Floor Space.
Horse Power of Motor, 1 H. P.
4" Vertical Adjustment of Spindle.
9½" Distance from Front Edge of Table to Center Line of Spindle.
18" Distance from Side Edge of Table to Center Line of Spindle.
36" Height from Floor.
Width of Driving Belt, 2".
Shipping Weight, 620 lbs.
Export Weight, 675 lbs. Cubic contents, 28 C. F.

Double Spindle Shaper

Code Word, Woict



The Frame is unusually large and heavy, having a base 33x43 inches. Machine weighs 2,200 pounds.

The Spindles are 24 inches apart, measuring $1\frac{13}{16}$ inches diameter below table. Both spindles revolve in self-oiling bearings. The bearings below the table are 7 inches long, and the bottom bearings are tapered and revolve in phosphor-bronze boxes. Either spindle can be dropped entirely below the table.

The Table is in one piece, made of iron, measuring 60x40 inches. A cutter with 6½ inches swing can pass through table opening. This table extends 18 inches in front and 18 inches on outside of the spindles.

The Countershaft can be placed close to the machine to give a straight pull to the spindles, making them run steadier. A tightener is provided for taking up the slack in the belts. A treadle in front starts and stops the machine.

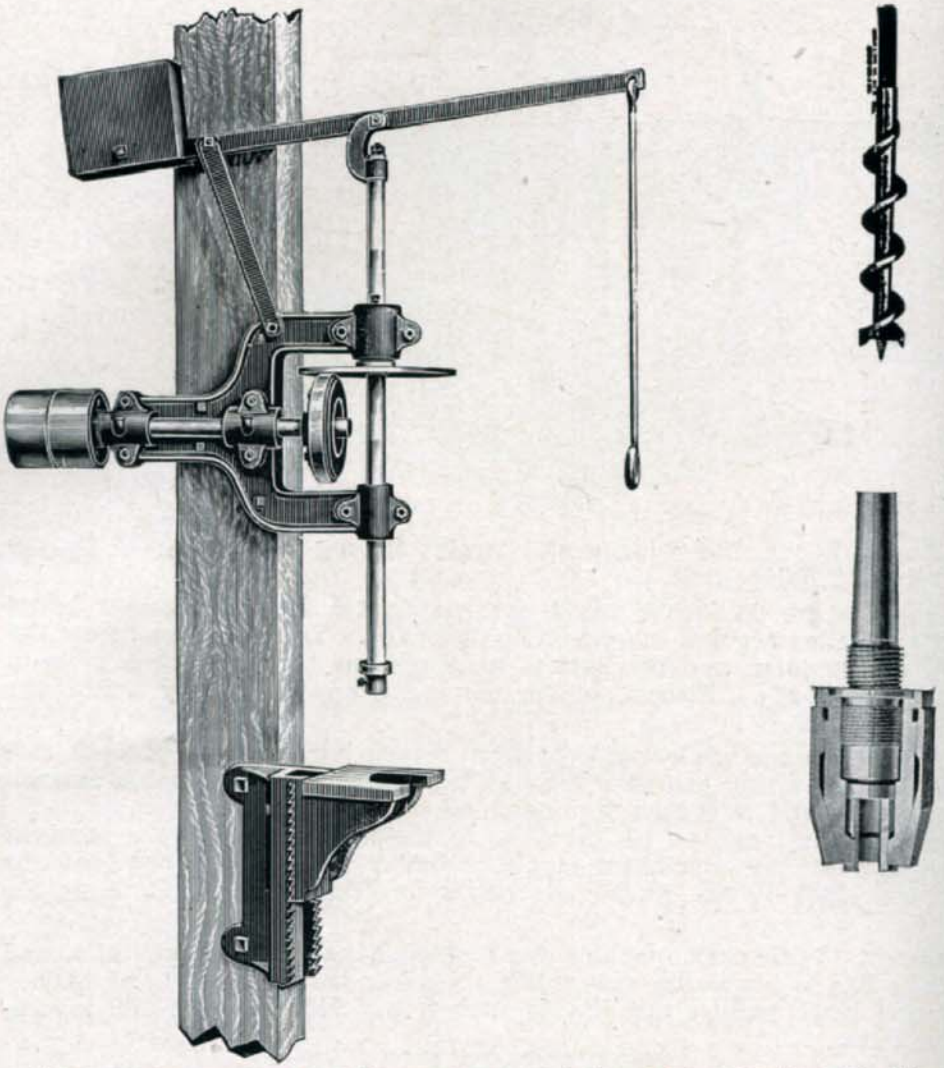
Equipment. With each machine we furnish a pair of straight bits, and fill-up collars for each spindle, concentric rings for table and countershaft.

Tight and loose pulleys are 10x4½ inches, and should make 800 revolutions per minute.

SPECIFICATIONS

	Double Spindle Shaper
Size of Base	33"x43"
Size of Table	40"x 60"
Front of table to spindle	18"
From side of table to spindle	18"
Diameter of spindle opening	6½"
Diameter spindle above table	1¼"
Diameter spindle below table	$1\frac{13}{16}$"
Distance between collar and nut	6"
Distance center to center of spindle	24"
Spindle pulleys	4"x7¼"
Speed of spindles	4500 R. P. M.
Receiving pulley on countershaft	10"x4½"
Speed of countershaft	800
Drive pulley on countershaft	20"x4½"
Horse power required	5 H. P.
Shipping weight	2200 lbs.
Gross weight for export	2600 lbs.
Cubic measurement	75 c. f.

"Noiseless" Boring Machine



The accompanying cut illustrates a **Friction Drive Boring Machine,** which is intended to be erected on any convenient post. The first of these machines we built especially for our own use in our shops, and have now had the same machine in daily use for 25 years. Operators of wood-working plants who have seen the machine in operation have unanimously declared that it is the most desirable machine of its kind they have ever seen. Its operation is absolutely noiseless and the speed of the spindle can be varied at will to suit the requirements of the work. In putting this machine on the market we know its actual value as a time saver and positively guarantee satisfaction.

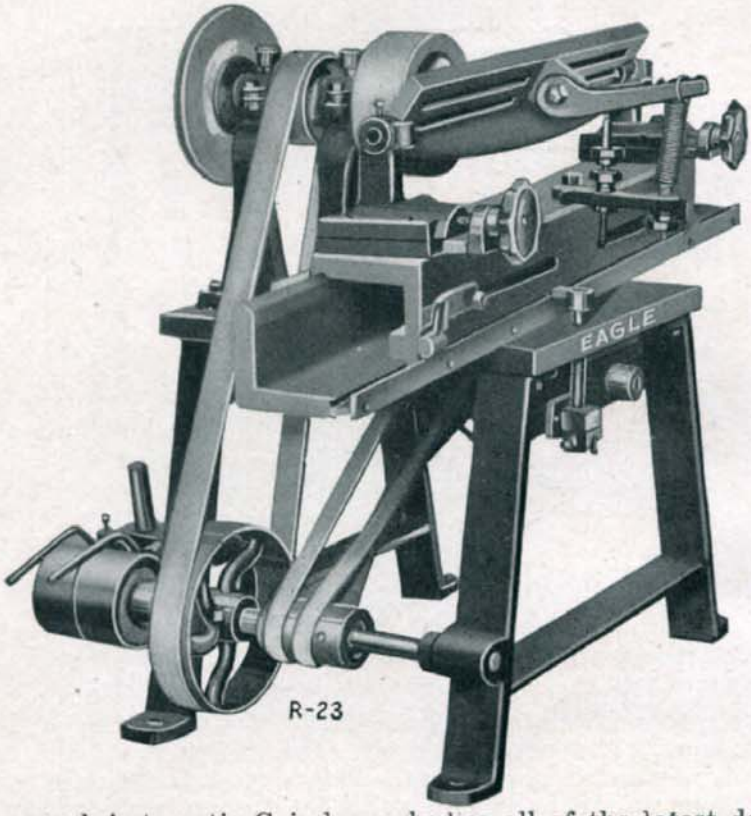
A universal chuck that will hold any size shanks from 0" to ¾" can be fitted, at extra cost, if desired. We can also furnish the bits, when desired, from ¼" to 2" by sixteenths, with ½" shanks and 6" or 12" twist. It will bore a hole 14" deep and up to 2" diameter.

Steel spindle, $1\frac{7}{16}$". Stroke, 14". Hole in end of spindle, ½".
From post to center of bit, 8". Fits any post from 6" to 14".
Tight and loose pulleys, 6"x4". Speed, 400 to 500 R. P. M.
Weight, with table, 300 lbs. Weight, without table, 270 lbs.
Gross weight, with table, 300 lbs. Gross weight, without table, 270 lbs.
Cubic measurement, 8'.
Code Word, complete, with table, **Wohod.**
Code Word, without table, **Wohoh.**

EAGLE

AUTOMATIC KNIFE GRINDER

MODEL "G"



This improved Automatic Grinder embodies all of the latest developments in a machine for grinding knives up to 44″ in length.

The feed and reverse mechanism has been greatly simplified and all of the working parts are fully protected from grit and slime by the broad, square table. The top slide which moves on triple bearings, completely protects the essential gears from grit.

The machine is made in three sizes for grinding knives up to 26″, 32″ or 44″ lengths. The wheel shaft is made double end to carry a plain wheel at the outer end for tool grinding or for use with saw gummer attachment as supplied with each machine.

Each machine is furnished with one 6″x2½″ cup wheel, one emery dresser, necessary wrenches and inside belts.

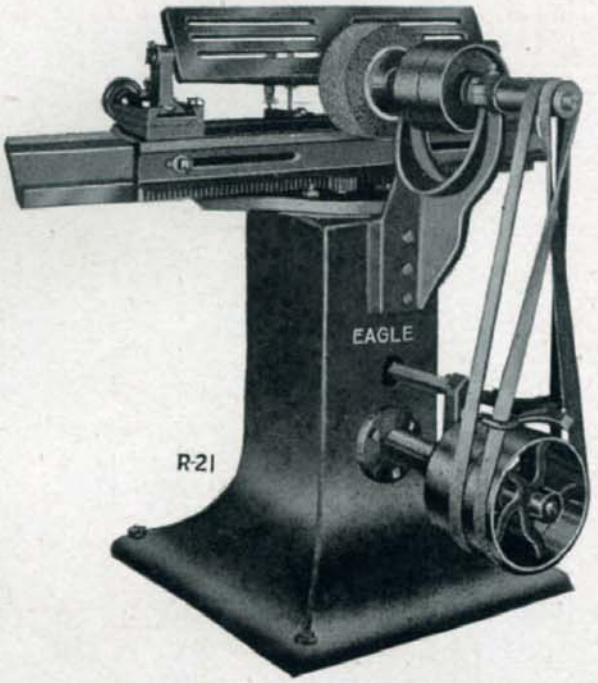
The countershaft is equipped with 4″x2½″ tight and loose pulleys and belt shifter. Speed of countershaft 600 to 700 R. P. M. Power required ½ to ¾ H. P.

Furnished also with ½ H. P. motor belted to the countershaft at extra cost.

WEIGHTS AND DIMENSIONS

Size of machine	26″	32″	44″
Extreme height	32″	32″	32″
Length over all	48″	54″	66″
Width over all	27″	27″	27″
Shipping weight	375	385	415
Weight for export	400	425	450
Cubic measurements	18′	19′	20′
Code Word	Wohoj	Wohok	Wohon

Eagle Automatic Knife Grinder
MODEL "A"



STYLE "A"—REAR VIEW

The illustration, Figure R21, herewith is of the original style "A" Knife Grinder with spring tension cross feed. For thirty years this machine has been rendering splendid service and complete satisfaction to hundreds of users. Its adaptability to the grinding of knives with either concave or straight edges by use of the cupped wheel and the possibility of swinging the knife bed to any angle necessary for hollow grinding have made it an all around suitable machine for general grinding. A gravity water attachment is furnished.

This machine may be equipped with a full automatic geared cross feed but the regular spring cross feed is recommended as being equally effective and more easily adjusted. *Geared cross feed* will be supplied only if specified.

The Style "A" Machine is built in four lengths for taking knives up to 26", 32", 44" and 54" in length, each machine is furnished with an 8x3½" cup wheel, emery dresser, wrenches and feed belts.

Tight and loose pulleys are 6"x2½" and should run from 700 to 900 R. P. M.

The machine also may be fitted for motor drive.

Weights and Dimensions.

Size of Machine	26"	32"	44"	54"
Extreme Height	40"	40"	40"	40"
Length over all	50"	55"	70"	82"
Width over all	34"	34"	34"	34"
Shipping Weight, lbs.	565	610	810	850
Export Weight, lbs.	595	655	855	940
Cubic Measurement	16'	17'	19'	20'
Code Word	Wohor	Wohot	Wohov	Wohoz

Eagle Saw Sharpeners

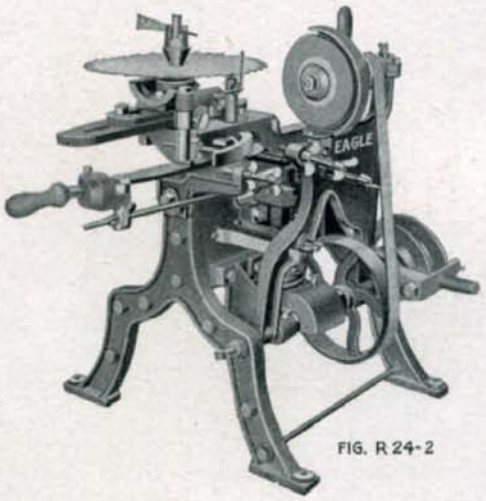


FIG. R 24-2

No. 1 Sharpener for Saws 6″ to 30″ Dia.

The No. 1 machine is illustrated above. The No. 2 is made with extended legs to rest on floor, and will take saws up to 54″ diameter.

Their extreme simplicity and ready adaptation to the different diameters and gullets make them particularly desirable. They sharpen the teeth of the saws more quickly than can be done by hand and keep the teeth perfectly gummed, of uniform size and shape, and the saws perfectly round and true.

The machines will handle all ordinary saws, and can be arranged to sharpen metal cutting saws with teeth as fine as four to the inch.

Motor drive furnished when desired at extra cost.

The No. 1 machine is mounted on a low box table in which it is packed for shipment.

Two emery wheels, 6″ diameter, and from ⅛″ to ½″ thick are furnished with each No. 1 machine, and two 8″ diameter ¼″ to ½″ thick with each No. 2 machine; also emery dresser, wrench and inside belt is furnished.

On the No. 1 the tight and loose pulleys are 4″ diameter, 2¼″ face and should run 900 R. P. M., the same size pulleys are furnished on the No. 2 and should run 600 R. P. M.

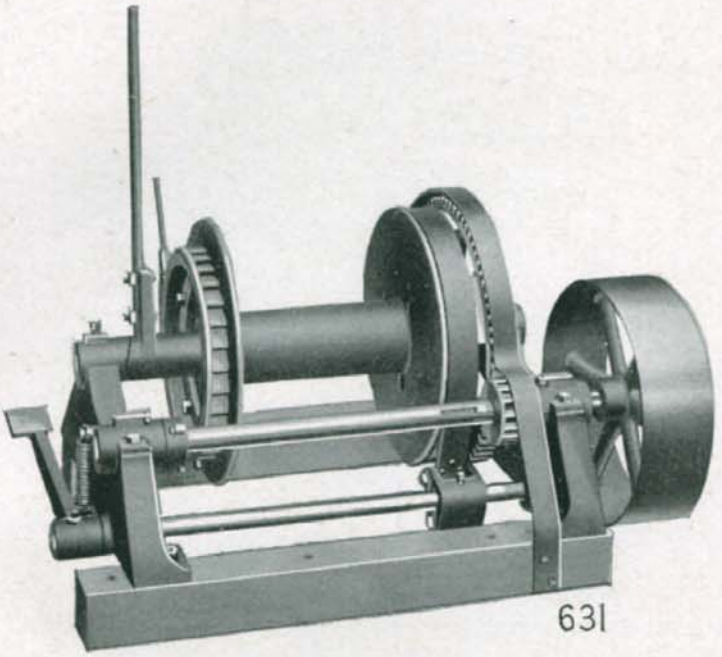
Larger sizes of this type machine built for heavy mill saws.

WEIGHTS AND DIMENSIONS

	No. 1	No. 2
Extreme Height	28″	44″
Length over all	34″	36″
Width over all	20″	36″
Shipping Weight, lbs.	160	215
Export Weight, lbs.	190	275
Cubic Measurement	10′	15′
K. D. and Boxed	145 lbs	245 lbs.
Code Word	Wohpi	Wohpy

No. 1 Single Drum Hoist

Code Word, Woibu



Our No. 1 Hoist, shown here, is constructed throughout of high-grade materials and the workmanship is first-class. It has a single drum which revolves easily on the drum shaft, and is driven by means of powerful cone-shaped wood frictions, thus imparting a steady, strong and positive motion. It may be driven by gasoline, steam or electric power and is adapted for use by contractors, carpenters and builders, masons and others in raising and lowering or moving loads of any kind where the load on the direct lift with single line is 1,000 lbs. or less.

It may also be used for storing hay or other crops, harvesting ice and many other purposes for which a light single drum hoist can be used. The lever shown at the end of the drum shaft operates a cam which imparts a very powerful end motion to the drum, thus bringing the frictions into contact with the driving gear.

A movement of the same lever in the opposite direction releases the frictions and allows the drum to turn on the shaft.

The brake is operated by foot treadle and there is also an independent safety ratchet for holding the load.

SPECIFICATIONS

Drum 5″ diameter, 13″ long. Winding capacity 500′ of ½″ rope. Hoisting capacity, 1,000 lbs. 100′ per minute with single line on direct lift. Driving pulley, 16″x5″. Speed, 360 R. P. M. Power required, 3 H. P. and up according to work to be done. Floor space required, 29″x40″. Weight, net, 430 lbs. Weight, boxed for export, 650 lbs. Cubic measurement, 20 cu. ft.

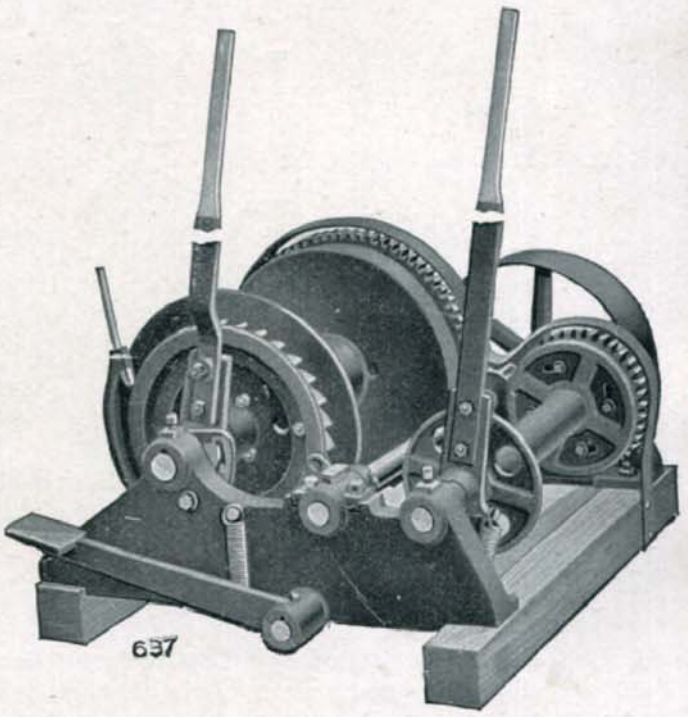
NOTE—This hoist can be furnished mounted on skids with engine or motor when so desired at extra cost.

No. 2 "Handy Man" Hay Hoist

Code Word, Woice

This hoist is primarily intended for use by farmers in unloading and storing hay. It, however, may be used for harvesting ice and many other purposes about the farm, as well as by carpenters, builders and others for handling light loads of any kind.

It is constructed throughout of the best materials and workmanship and is strictly first class in every way.



There are two drums; the larger one, for handling the load, carries 500′ of ½″ rope, and the smaller one, for returning the hay fork to the load, carries 200′ of ½″ rope.

These drums revolve freely on the shafts and are driven by means of powerful wood cone frictions. The action is strong and positive and under perfect control by the levers, which may be operated by small ropes passing to the load or into the barn. In this way, the man on the load can operate the hoist, thus saving one man.

The brake is operated by foot treadle except when hoist is controlled from the load. It is then operated by means of a weight. There is an independent safety ratchet for holding load when hand controlled.

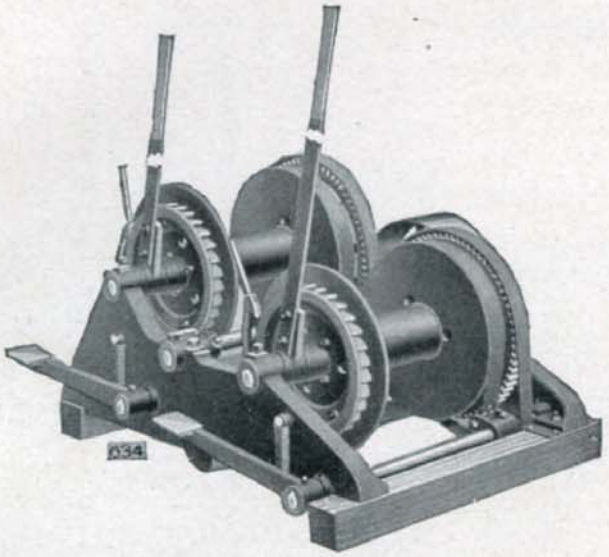
SPECIFICATIONS

Large drum, 5″x13″; small drum, 2⅝″x16″. Winding capacity of large drum, 500′. Hoisting capacity, 1,000 lbs. 100′ per minute, with single line on direct lift. Driving pulley, 16″x5″. Speed, 360 R. P. M. Power required, 3 H. P. and up, according to work to be done. Floor space, 32″x40″. Weight, net, 545 lbs. Weight, boxed for export, 750 lbs. Cubic measurement, 21′.

NOTE—This hoist can be mounted on skids with engine or motor when so desired at extra cost.

No. 3 Double Drum Hoist

Code Word, Woico



In the construction of this Double Drum Hoist we use the same drums, frictions and other component parts that make up our No. 1 Single Drum Hoist, and the method of operation and control is about the same.

It is adapted to use by contractors, builders, masons, in raising or lowering light loads of any kind, also on docks or piers and lighters for loading or discharging cargoes, handling derricks, etc. It may be used by farmers for storing hay and other crops; ice harvesting, etc.

It can be driven by belt from any convenient power or may be mounted on a base or truck and direct connected by gearing or sprocket and chain to gasoline or steam engine or electric motor.

It will operate two builders platform elevators independently at the same time or will do pulling, hauling, or hoisting in opposite directions at different locations on the same job at once.

The drums revolve freely on their shafts and are driven by means of powerful cone-shaped wood frictions.

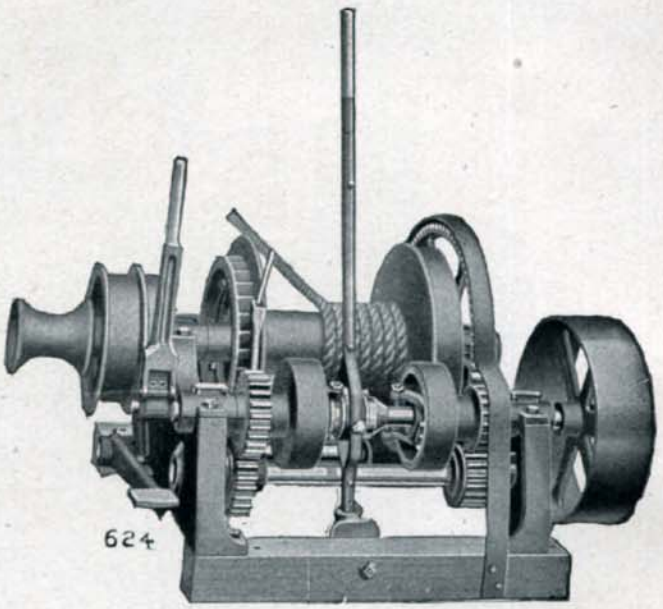
In lowering the load or returning the line, the drums are fully controlled by powerful band brakes operated by foot treadle. There are also independent safety ratchets for holding the load.

SPECIFICATIONS:—Drums, 5″ diameter, 13″ long. Winding capacity, each drum 500′ of ½″ rope. Hoisting capacity, 1,000 lbs. on each drum, 100′ per minute, with single line on direct lift. Driving pulley, 16″x5″. Speed, 360 R. P. M. Power required, 5 H. P. and up, according to work to be done. Floor space, 40″x44″. Weight, net, 760 lbs. Weight, boxed for export, 950 lbs. Cubic measurement, 28′.

No. 4 Contractors and Builders Hoist

Code Word, Woicu

Our 4 Single Drum Reversible Hoist, is a time, labor and money saver. It is especially adapted to contractors' and builders' requirements, but may be used for a large variety of other purposes, where the load is not over 1,000 lbs., with single line, on direct lift.



The Drum, the Sheave and the Winch Head are reversible and may be used independently one of the other. The Winch Head is for "snubbing" or quick short work and general utility and is keyed fast to the shaft. The Sheave is for **double platform elevator** work and the drum for heavy single line lifting, or for use with block and tackle.

It is not necessary to disturb cables on drum or sheave, as both can be engaged and disengaged independently of each other.

Forward and reverse motion is obtained by a movement of the operating lever which engages and disengages the internal expanding friction clutches, which are provided with simple and strong screw adjustments, having no delicate parts to get out of order.

A powerful hand brake is furnished for large drum, which is controlled by treadle, in convenient reach of the operator. The double platform elevator sheave is equipped with a hand brake in convenient reach of the operator, to control the drop of elevator. An independent safety ratchet and pawl are provided for holding the load.

The hoist may be driven by belt from any convenient power, or may be mounted on a base or truck and direct connected by gearing, or sprocket and chain, to a gasoline engine or electric motor, Sprocket will be furnished in place of drive pulley when desired.

This hoist occupies but little space, and being comparatively light is easily moved and can be used in cramped quarters.

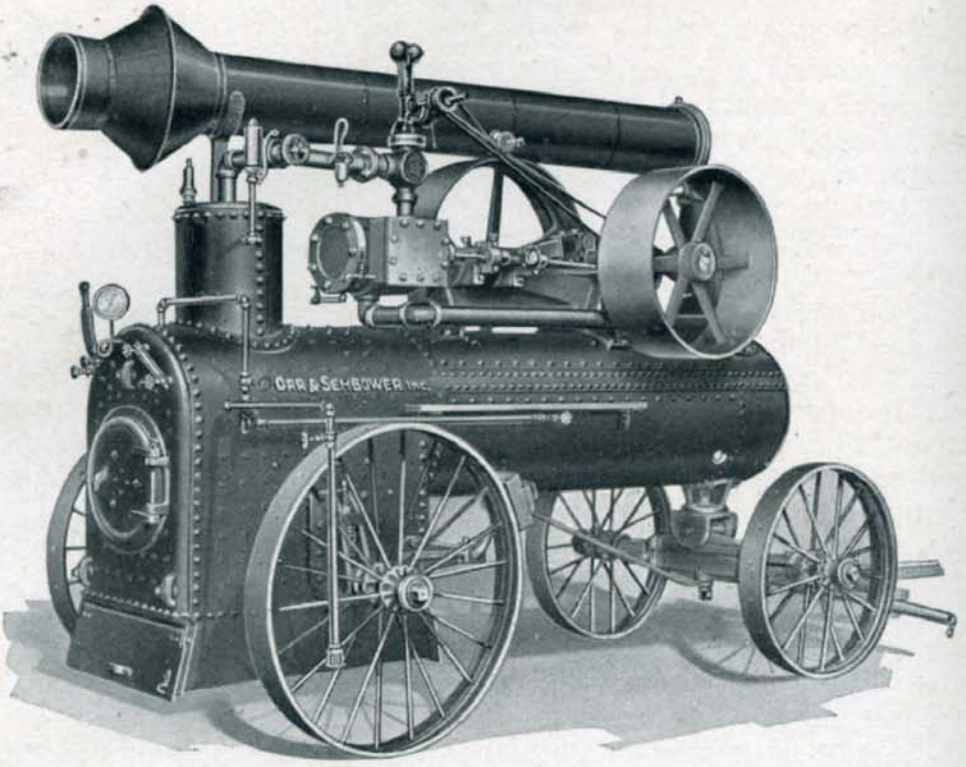
SPECIFICATIONS

Drum, 5″ diameter; 13″ between flanges. Winding capacity, 500′ of ½″ wire cable. Hoisting capacity, 1,000 lbs., 100′ per minute with single line on direct lift. Sheave 10″ diameter. Drive pulley, 16″x5″, speed 360 R. P. M. Power required 5 H. P. or more, according to work to be done. Floor space 32″x47″. Net weight, 645 lbs. Weight, boxed for export, 825 lbs. Cubic measurement, 26′.

We furnish this hoist with gasoline engine mounted on same skids.

Portable Boiler and Engine

Built for 125 lbs. Pressure A. S. M. E. Code



The Engine is suitable for all kinds of work where high speed and smooth running are required. It is correctly proportioned, especial attention having been given to distributing the metal along the lines of strain.

The Bed is made with a solid bottom and arranged to catch all drippings which are conveyed to an exit which has been provided.

The Crank Shaft is cut from a solid forging of the best quality of steel and is equipped with counterbalancing weights. The main bearings of the crank shaft are made especially large and strong and are provided with bronze quarter-boxes for adjustment.

The Connecting Rod is equipped with extra heavy phosphor bronze boxes at each end. The cross-head end is of the solid end type, while the crank pin end is of the strap type. Both brasses are adjusted by means of wedges.

The Crank Pin and Cross-Head Pin are long and of large diameter, giving very liberal wearing surfaces.

The Piston is the hollow head type and is provided with self-adjusting rings.

Other features are balanced fly-wheel and eccentric keyed to the crank shaft.

The Boiler is made of open-hearth steel plates, thoroughly braced and staybolted to withstand a working pressure of 125 pounds.

The fittings and fixtures comprise grates, water gauge, gauge cocks, steam gauge, safety valve, check and stop valves, blow-off valve, stack, whistle, injector attached, fly wheel, pulley, oil cups, lubricator, throttle valve, automatic governor and belt. Ash pan furnished with rig on wheels; also tongue yoke, whiffletrees and brake.

The Grates regularly furnished are the plain type, but the Tupper or herringbone, or sawdust grates will be furnished, when preferred, without extra cost.

Boilers are regularly furnished with steel tubes, but can be furnished with charcoal iron tubes, if desired, at extra cost.