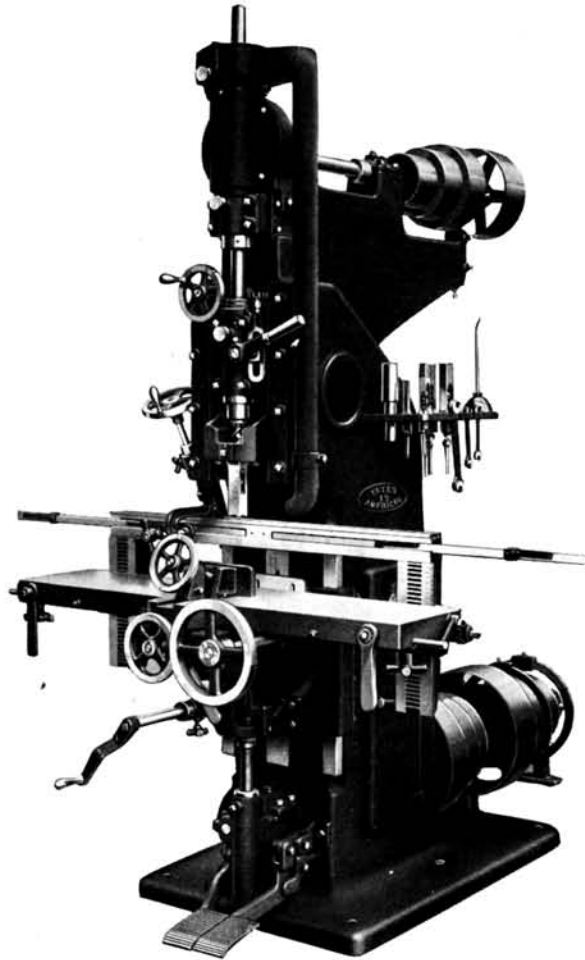




Mortisers and Borers



THE following section, devoted to illustrations and descriptions of Yates-American Mortisers and Borers, will be of unusual interest to furniture factory and sash and door plant owners. This line of machines has been developed with the point in view of offering a machine for every mortising and boring job. You will notice large, ball bearing, motor driven machines as well as smaller tools. No matter how large or small your establishment may be, some of these machines are adaptable to your needs. All are carefully constructed, durable tools with features for convenient operation and low maintenance. You are invited to request more complete information on any borer and mortiser and to consult Yates-American for suggestions on proper equipment for your particular work.



No. 19 Vertical Hollow Chisel Mortiser

YATES-AMERICAN No. 19 Vertical Hollow Chisel Mortiser is designed for medium heavy mortising, and is equally adapted to hard and soft woods. It will take stock 12" under the chisel and 4" from center of chisel to back guide. Will mortise up to 1 1/2" in hardwood and 2" in soft wood. Will go to 5" deep.

Regular Equipment

Frame—Cored column type; feed mechanism enclosed; perfect alignment of working parts assured.

Chisel Ram—Reciprocates in gibbed ways; quick return; controlled by foot treadle which operates frictions; stroke adjustable from 2" to 5"; adjustment of stroke can be made while ram is working by handwheel at left side of machine; scale provided for indicating length of stroke or depth of mortise to be cut; also has an independent adjustment of 1 1/2" on each side of its normal position, which can also be adjusted while in motion; graduated to show amount of adjustment made; can be stopped or reversed at any point of downward stroke; 13-20-30 strokes per minute.

Spindle—Driven by spiral cut gears; ball end thrust bearing at lower end of bearing; screw adjusting collar at top end of bearing for taking up end motion; bit chucks have screw adjustment, so arranged that it is impossible for the bit to be forced up into the chisel or slip in the chuck; provided with lock nut which enables operator to retain the same adjustment of the bit when removing it with chuck and chisel for sharpening.

Table—10"x48"; adjusts 12" vertically, 14" horizontally, 4" laterally; tilts 30 degrees to right or left; horizontal adjustment by rack and pinion; table fitted with quick acting clamp for

material up to 8" wide; back guide has lip hold-down and moves in planed gibbed ways on rack and pinion. 6" stop rod with four spring stop gauges; adjustable auxiliary back guide; extra adjustable clamp at top of back guide for clamping wide stock on upper edge.

Blower—Used for cooling the chisel and keeping the work clear of chips is self-contained and driven by bit spindle at the top of machine.

Drive—Tight and loose pulleys 12"x6"; bronze self-oiling bushing; speed 1175 R. P. M.

Equipment—Five chisels with bits furnished: one 1/2" chisel with blade 4" long; one each 3/4", 1", 1 1/4", 1 1/2" chisels with blades 5 3/4" long; necessary chucks for bits and bushings for chisels 3/8" to 2" which is maximum capacity of machine. Centering plug for centering the chisel holder with bit spindle is also furnished. Complete set of wrenches.

H. P.—10.

Extra Equipment

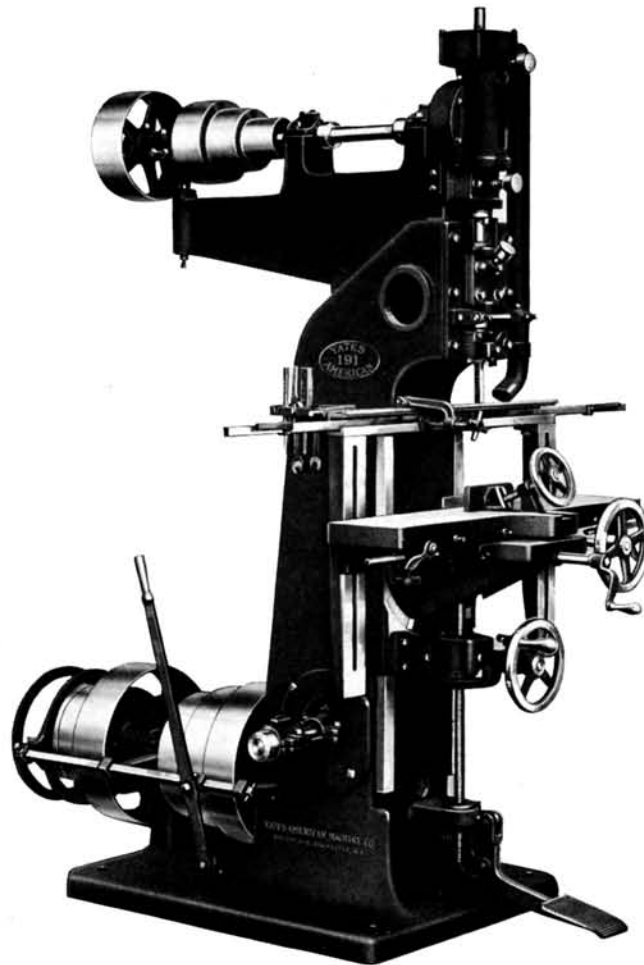
CODE

Ceemd Belt Guard.

Cauxp Standard motor base and pulley for belt connection.

Cehet Motor on special base, combination belt and gear drive.

Code	Floor Space	Wght. Lbs.	Boxed for Wght. Lbs.	Export Cubic Feet
Adnob	7'7"x6'	3000	3900	200



No. 191 Vertical Hollow Chisel Mortiser

YATES-AMERICAN No. 191 Vertical Hollow Chisel Mortiser is designed for light and medium heavy mortising in both hard and soft woods, and has a capacity much greater than the No. 20 Vertical Mortiser. It will take stock 20" high and will mortise in the center of stock 8" wide. Will mortise up to $\frac{3}{4}$ " square in hardwood and up to 1" square in soft wood. Cuts to $3\frac{1}{2}$ " deep.

Regular Equipment

Frame—Cored column type; feed mechanism enclosed; perfect and permanent alignment of all working parts assured.

Chisel Ram—Reciprocates with quick return in gibbed ways; adjustable for wear; adjustable chisel holder; operates automatically by foot treadle. 10-20-35 strokes per minute. Stroke adjustable to 4".

Spindle—Ball bearing, driven by spiral cut bevel gears; provided with ball end thrust bearing at lower end of bearing.

Bit Chucks—Screw arrangement so that bit cannot be forced into the chisel, or slip in the chuck. Provided with locknut which enables operator to retain the same adjustment of the bit when removing it with chuck and chisel for sharpening.

Table—48"x10 $\frac{1}{4}$ "; tilts 30 degrees to right or left; horizontal adjustment by rack and pinion; adjustable to and from column by handwheel; fitted with quick acting clamp for material up to 8" wide. Back guide has lip hold-down and is moved in planed ways clamped from front of table; stop rod 5" long with four spring stop gauges; auxiliary back guide; extra adjustable clamp at top of back guide for clamping upper edge of wide stock. Table is made for wood filler under chisel for fine mortising.

Blower—Used for cooling chisel and keeping work free from chips. Self-contained, driven directly by bit spindle at top of machine.

Drive—Tight and loose pulleys 12"x6"; speed 1175 R. P. M.

Equipment—Three chisels with bits; one each $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ". Three bit chucks with self-locking nut for taking care of all bits, two chisel bushings for all chisels; one centering plug. One gauge for setting chisels and bits, complete set of wrenches.

H. P.—5.

Extra Equipment

CODE

Ceopj 36" Gauge Bar Extension.

Ceork 24" Gauge Bar Extension.

Ceosl 18" Gauge Bar Extension.

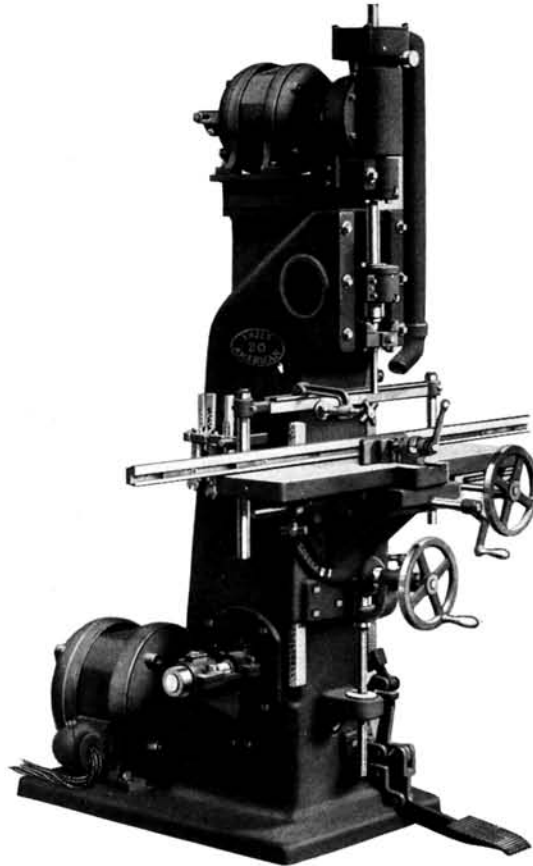
Ceemd Belt Guard.

Cauxp Standard motor base and pulley for belt connection.

Cehet Motor on special base combination belt and gear drive.

Ceotm Motor geared to spindle and two speed motor for feed works, giving 18 and 35 strokes per minute.

Code	Floor Space	Wght. Lbs.	Boxed for Wght. Lbs.	Export Cubic Feet
Afirl	5'8"x5'	1730	2750	151



No. 20 Automatic Vertical Hollow Chisel Mortiser

YATES-AMERICAN No. 20 Automatic Vertical Hollow Chisel Mortiser is a compact, well designed, and finely fitted machine for mortising work in hard and soft woods. It is particularly adapted to carriage, furniture, sash and door, and other accurate mortising work. It is automatic in operation. Frame is of the cored column type, heavy and rigid, with broad foot flange, reducing vibration to a minimum. The machine will mortise to $\frac{3}{4}$ " square in hardwood, or 1" in soft wood to $3\frac{1}{2}$ " deep.

Regular Equipment

Chisel Ram—Reciprocal; quick return; adjustable for wear; adjustable chisel holder. Operates automatically by foot treadle; speeds of chisel ram 10, 20 and 35 strokes per minute. Stroke is adjustable to $3\frac{1}{2}$ ". Adjustable hold-down prevents lifting of stock on return. Bit spindle ball bearing driven by noiseless spiral cut bevel gears. Blower keeps chisel cool, and removes chips. Speed of bit 3600 R. P. M.

Table—Plain gibbed to frame; adjustable vertically by hand-wheel; tilts 30 degrees right or left; mortises in center of material $5\frac{1}{2}$ " wide by 12" deep; adjustable to and from column; provided with detachable plate under chisel which can be replaced with wood plate for "Through" mortising; adjustable back guide and hold-down with spring spacing stop gauges. Line gauge attachment which can be used with or without the spring stop gauges. Clamp table can be furnished on extra order.

Motor Application—When furnished motorized a great range of adaptability is provided to meet varying electrical conditions found in different localities. A standard motor may be mounted on the shaft driving the cut spiral bevel gears, and this shaft is extended to drive the chisel ram or the belt and cone pulleys may be entirely eliminated by mounting, on the base of the

machine, a standard multi-speed motor giving two speeds to the chisel ram, 20 and 30 strokes per minute.

Regular Drive—Tight and loose pulleys 10"x4"; speed 1200 R. P. M. Loose pulley bronze bushed.

Equipment—Three chisels: one each $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", with bits to correspond and a squaring device for setting the chisel square with the fence.

H. P.—2.

Extra Equipment

CODE

Cesuh Clamp Table.

Ceemd Belt Guard.

Ceosl 18" Gauge Bar Extension.

Ceork 24" Gauge Bar Extension.

Ceopj 36" Gauge Bar Extension.

Caupx Standard Motor Base and Pulley for belt connection.

Cehet Motor mounted on Special Base for combination belt and Gear Drive.

Cesog Completely Motorized.

Code	Floor Space	Wght. Lbs.	Boxed for Wght. Lbs.	Export Cubic Feet
Afmic	5'3"x5'	1500	2300	117



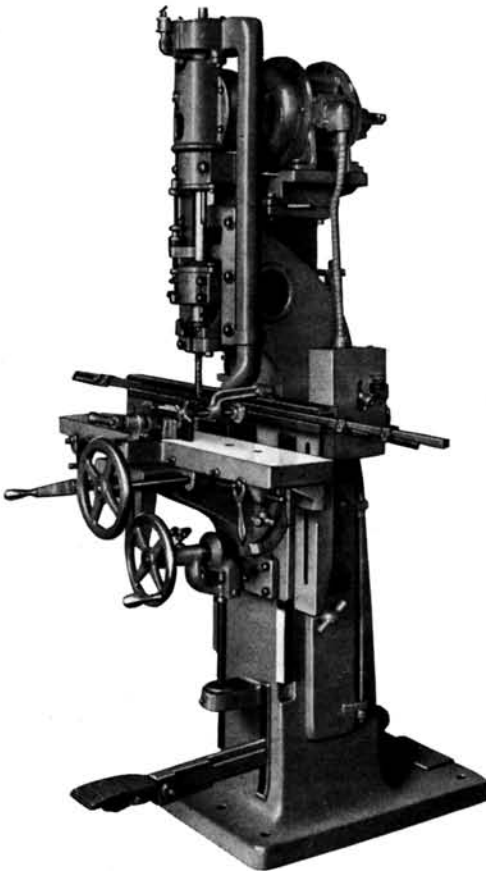
No. 25 Vertical Hollow Chisel Mortiser

YATES-AMERICAN No. 25 Vertical Hollow Chisel Mortiser is designed for light mortising in hard or soft woods. It is a high grade tool with heavy cored column and broad base flange making it free from vibration. It will mortise up to $\frac{5}{8}$ " in hardwood, and $\frac{3}{4}$ " square in soft wood, $3\frac{1}{2}$ " deep and to the center of a $6\frac{1}{2}$ " circle.

Regular Equipment

Chisel Ram—Operates by foot power in gibbed ways; provision for taking up wear; adjustable chisel holder; speed of bit spindle 3600 R. P. M.; bit spindle driven by spiral cut bevel gears; adjustable stops for different depths of hole without changing height of table; foot lever and connections adjustable; blower provided to cool chisel and blow chips away.

Table—Plain table regular; clamp table on extra order; table securely gibbed to frame of machine; adjustable 12" vertically on ball bearing raising screws operated by handwheel; tilts 30 degrees right or left; adjustable to and from column; detachable wooden plate directly under chisel for "through" mortising; adjustable back guide and hold down; spring spacing stop gauges.



Equipment—Three chisels furnished; one each $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ " with bits to correspond. Squaring device for setting chisel square with frame.

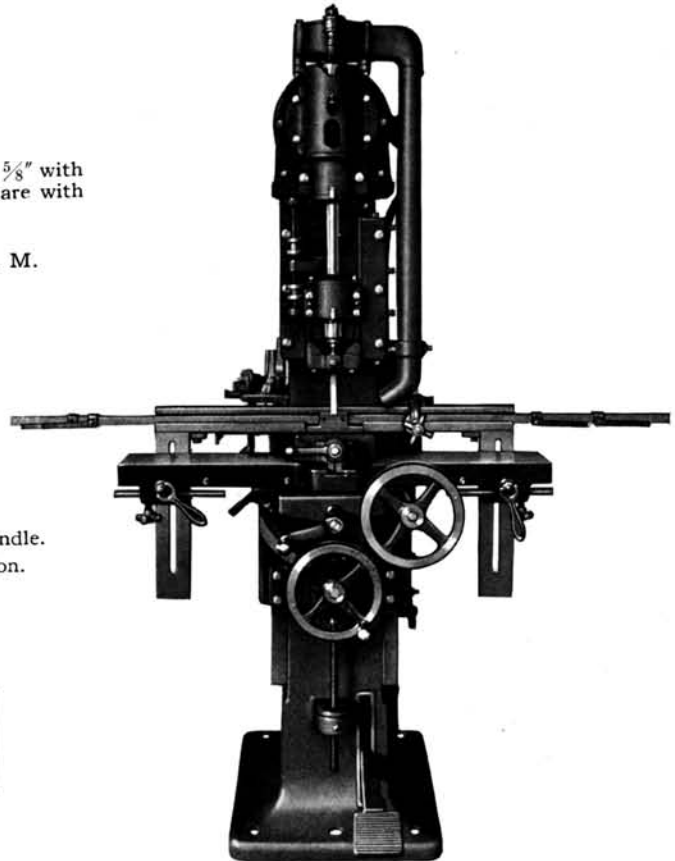
Drive—Tight and loose pulleys $8 \times 3\frac{1}{2}$ "; speed 1200 R. P. M.
H. P.—2.

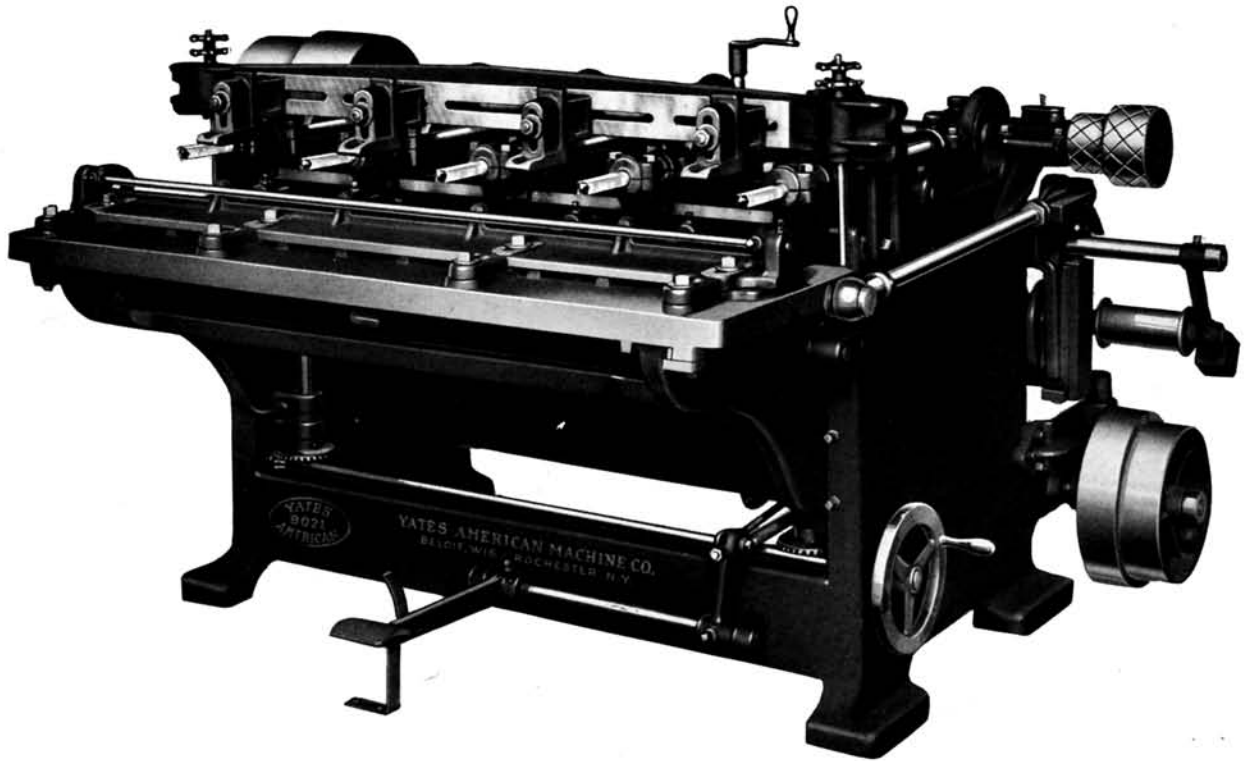
Extra Equipment

CODE

- Cesuh** Clamp Table.
Ceopj 36" Gauge Bar.
Ceork 24" Gauge Bar.
Ceosl 18" Gauge Bar.
Ceemd Belt Guard.
Cayob Motor mounted on Special Base and geared to Spindle.
Cauxp Standard Motor Base and Pulley for belt connection.

Code	Floor Space	Wght. Lbs.	Boxed for Export Wght. Lbs.	Cubic Feet
Afolh	2'6" x 3'6"	1050	1450	55





No. 9021 Automatic Multiple Hollow Chisel Mortiser

YATES-AMERICAN No. 9021 Automatic Multiple Hollow Chisel Mortiser is designed for use in the manufacture of furniture and cabinet work requiring square or oblong mortises. It can be furnished with from three to seven spindles, number wanted should be specified in the order. It will accommodate stock from $\frac{3}{4}$ " to 6" wide and 4" thick; it will make mortises from $\frac{1}{4}$ " to $\frac{13}{16}$ " to a depth of 3". The greatest distance that can be had between centers is 48", the smallest 4". Also can be furnished with motors mounted direct on each spindle and separate motor for feed.

Regular Equipment

Table—Moves automatically; quick return; controlled by foot treadle operating through friction clutch a worm and worm wheel drive; will automatically stop at any point in travel when treadle is released; two rates of travel provided by two step cone pulley operating in connection with clutch; described above; table has 3" vertical adjustment by raising screws handwheel operated through bevel gears.

Automatic Clamps and Clamp Bar—Adjustable clamps located between spindles; attach to cross bar; spring tension on clamps; operate automatically—clamp when table moves in, release when table moves out. Vertical adjustment made through cam shaft connected to a vertical rod at each end of the clamp bar.

Spindles— $\frac{1}{4}$ " diameter; driven by cut bevel and rawhide gears completely enclosed; handwheel adjustment on stationary screw-

laterally; hollow chisels adjustable in and out; bearing surfaces notched to hold securely against the thrust of the table.

Fence—Located on reciprocating table; laterally adjustable for varying the depth of mortise; $1\frac{3}{8}$ " high, has lugs spaced $11\frac{1}{2}$ " apart, 3" high. Rod with adjustable stops runs full length of fence.

Strokes—Regular belt driven machine, strokes are 10, 20, and 35 per minute. On the motor driven where two speed motor is direct connected to eccentric, the strokes are 18 and 35 per minute.

Equipment—One auger bit and hollow chisel for each headstock from $\frac{1}{2}$ " to $\frac{13}{16}$ ". Please specify size desired when ordering.

Drive—Tight and loose pulleys 12"x7"; speed 600 R. P. M.

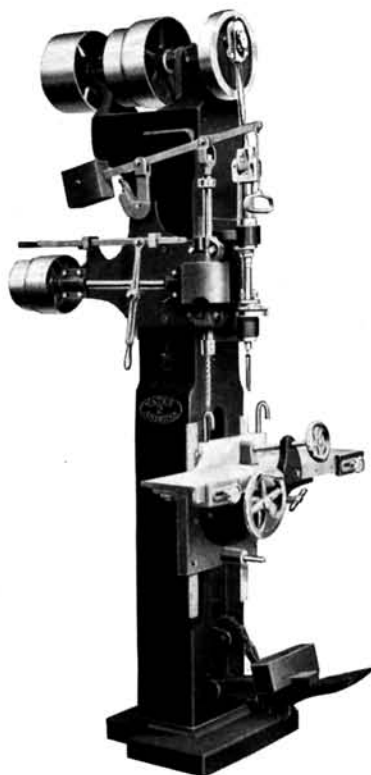
H. P.— $7\frac{1}{2}$ to 10.

CODE Extra Equipment

Ceixp Extra width from 48" to 72", per foot.

Caup Standard motor base and pulley belt for connection.

Code	Style	Floor Space	Wght. Lbs.	Boxed for Export Wght. Lbs.	Export Cubic Feet
Belt Drive					
Adzun	3 Spindle	7'3"x5'	2100	3000	176
Afabt	4 Spindle	7'3"x5'	2150	3050	176
Afacv	5 Spindle	7'3"x5'	2200	3100	176
Afadw	6 Spindle	7'3"x5'	2250	3150	176
Afagy	7 Spindle	7'3"x5'	2300	3200	176
Motor Dr.					
Afazh	3 Spindle	7'3"x5'	2100	3000	176
Afajb	4 Spindle	7'3"x5'	2150	3050	176
Afacd	5 Spindle	7'3"x5'	2200	3100	176
Afald	6 Spindle	7'3"x5'	2250	3150	176
Afamf	7 Spindle	7'3"x5'	2300	3200	176



No. 2 Power Mortiser



No. 915 Foot Power Mortiser



No. 3 Power Mortiser

No. 2 Power Mortiser

YATES-AMERICAN No. 2 Power Mortiser is designed for door and blind mortising. It will also handle light work nicely. It is strongly and rigidly constructed, and through weight and balance of the reciprocating parts we have minimized the vibration common to this type machine. It will mortise to the center of material 6" wide when used with plain table, to 5" wide when equipped with clamp table.

Regular Equipment

Chisel Ram—5" stroke; reversing device is simple and positive, fitted with conical bearings; adjustable for wear; spindle connections and straps made of best steel.

Table—Adjustable 12" vertically; tilts to 45 degrees; provided with substantial hold-down, and when so ordered, with rack and pinion feed. Clamp table graduated from the center both ways, and has adjustable stops.

Treadle Device—So constructed as to relieve operator of shocks.

Boring Attachment—Provided with belt-shifter.

Equipment—Furnished: Five chisels $\frac{3}{8}$ "- $\frac{7}{16}$ "- $\frac{1}{2}$ "- $\frac{5}{8}$ "- $\frac{3}{4}$ ", complete set of wrenches. When ordered with boring attachment five bits are furnished.

Drive—Tight and loose pulley 12"x3 $\frac{1}{4}$ "; speed 550 R. P. M. H. P.—3 to 5.

Extra Equipment

CODE
Cauxp Standard Motor Base and Pulley for belt connection.

Code	Style Machine	Floor Space	Wght. Lbs.	Boxed for Export Wght. Lbs.	Export Cubic Feet
Afomj	With Boring Attachment Clamp Table	3'9"x3'5"	1600	2300	80
Afonk	With Boring Attachment Plain Table	3'9"x3'5"	1600	2300	80
Afopl	Without Borer Clamp Table	3'9"x3'5"	1500	2200	80
Aform	Without Borer Plain Table	3'9"x3'5"	1500	2200	80

No. 915 Foot Power Mortiser

YATES-AMERICAN No. 915 Foot Power Mortiser is designed for factories where there is not enough work for a Power Mortiser. Frame is cast in one piece, very heavily constructed and substantial.

Regular Equipment

Chisel Ram—3 $\frac{1}{4}$ " stroke; reverse quick and accurate; will mortise to the center of material 2 $\frac{1}{2}$ " wide; springs are made with 4 leaves of best spring steel.

Table—Adjustable vertically; guides vertically adjustable.

Drive—Foot Power.

Equipment—Furnished: Three chisels $\frac{1}{4}$ "- $\frac{3}{8}$ "- $\frac{1}{2}$ ", and necessary wrenches.

Code	Floor Space	Wght. Lbs.	Boxed for Export Wght. Lbs.	Export Cubic Feet
Afotp	2'10"x2'8"	550	725	36

No. 3 Power Mortiser

YATES-AMERICAN No. 3 Power Mortiser is designed for sash and blind work, and all kinds of light mortising in general wood-working shops. The frame and base are substantial and well-proportioned. It will mortise to the center of material 5" wide.

Regular Equipment

Chisel Ram—4 $\frac{1}{2}$ " stroke; reversing device simple and positive fitted into conical boxes; conical brass boxes fitted with conical bearing with provision for adjustment for wear. The conical split brass boxes, and the method by which the speed of the reverse is reduced to prevent the breaking and battering of stops are features found on no other mortisers. Spindle connection and straps steel.

Table—Adjustable 11" vertically; tilts to an angle and is provided with a substantial hold-down.

Treadle Device—Constructed to relieve the operator from shocks.

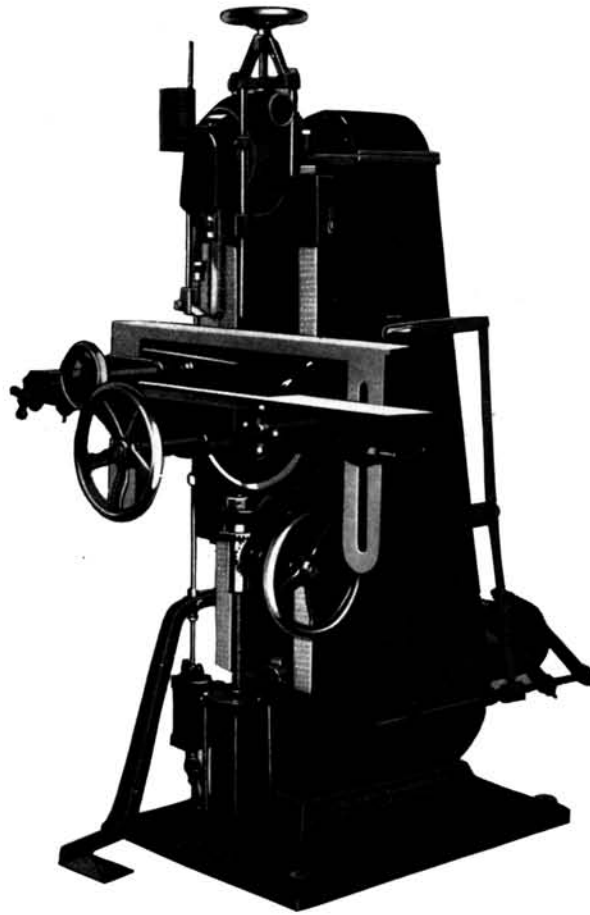
Drive—Tight and loose pulleys 10"x3 $\frac{1}{4}$ "; speed 600 R. P. M.

Equipment—Furnished: Five chisels $\frac{1}{4}$ "- $\frac{3}{16}$ "- $\frac{3}{8}$ "- $\frac{7}{16}$ "- $\frac{1}{2}$ ". H. P.—3 to 5.

Extra Equipment

CODE
Cauxp Standard Motor Base and Pulley for belt connection.

Code	Floor Space	Wght. Lbs.	Boxed for Export Wght. Lbs.	Export Cubic Feet
Afosn	2'10"x2'8"	550	725	36



Type U-5 Chain Saw Mortiser

YATES-AMERICAN U-5 Chain Saw Mortiser is a hydraulic, ball bearing machine used to advantage in auto body, sash and door, furniture, cabinet and other factories where mortising must be done on a production basis. Hydraulic feed for the table, ball bearings for the spindle, and its weight distinguishes this machine from all other chain saw mortisers. The U-5 will mortise as small as $\frac{3}{16}$ " x $\frac{3}{4}$ " and as large as $1\frac{1}{2}$ " x 3", has a face adjustment of $2\frac{1}{2}$ " and will cut to a depth of 7". It will mortise 11" longitudinally without unclamping.

Regular Equipment

Table—Table tilts 45°. Vertical adjustment 13". In and out adjustment $2\frac{1}{2}$ ". Lateral movement of plain table (Machine with rack and pinion and universal table) 0", of Universal Table (Machine with plain table) 11".

Feed—Hydraulic. Vertical travel 0"-7".

Drive—Countershaft tight and loose pulley $7\frac{1}{2}$ " x 5", 1150 R. P. M.

Floor Space—5'-0" x 5'0".

Chain—One chain $\frac{3}{8}$ " x 2" to cut 5" deep. Chain No.

912 complete with guide bar No. 580, sprocket 5B and spare cutters and cutting gear.

Grinder—Chain saw grinder and sharpener included.

Power—5 H. P.

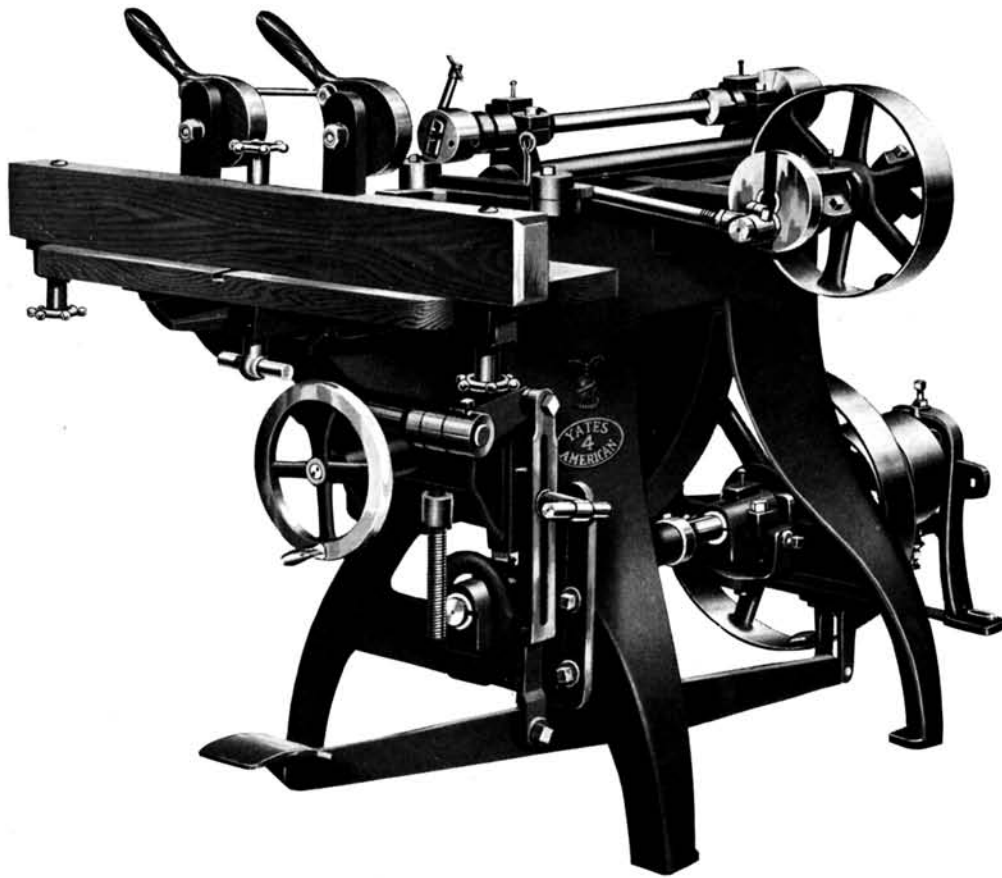
Extra Equipment

CODE

Capos Universal clamping table for Machine with plain table (lateral travel 11").

Caput Machine arranged for motor drive including motor base and flexible coupling (using a 5 H. P. 1200 R. P. M. motor—motor not furnished).

Code		Floor Space	Wght. Lbs.	Boxed for Wght. Lbs.	Export Cubic Feet
Acgem	Belt Drive with rack and pinion and universal table	5'x5'	2000	2200	175
Acgin	Belt Drive and plain table	5'x5'	2000	2200	175



No. 4 Bit Mortiser

YATES-AMERICAN No. 4 Bit Mortiser is a carefully designed, substantial, well made tool, adapted to ordinary boring and cutting mortises with half-round ends. The frame is heavy and cast in one piece. It will mortise from $\frac{3}{8}$ " to 6" long, and from $\frac{3}{16}$ " to 1" wide. Will cut in any kind of wood up to 3" deep with large bits. Furnished with babbitt bearings, ball bearings on extra order.

Regular Equipment

Table—6" horizontal adjustment; 9" vertical adjustment; made of hard wood, kiln dried and glued up. Stop gauge under table for limiting depth of cut.

Spindle—Steel; $1\frac{3}{16}$ " diameter; supplied with self-centering chuck with hardened jaws; will receive bit shanks up to $\frac{3}{4}$ " diameter. Height of spindle 3'2".

Adjustable Screw Clamps—Furnished with machine; detachable.

Crank Shaft—Boxed solidly on arms projecting from bed of machine; latter cast in one piece so parts cannot get out of line. Center of vibration of main spindle is directly under the center of the pulley.

Foot Lever—Table controlled by foot lever; very convenient as it leaves operator's hands free.

Equipment—Three Bits regularly furnished.

Drive—Tight and loose pulleys $8 \times 4\frac{3}{8}$ "; speed 1000 R. P. M.

H. P.—3 to 5.

Extra Equipment

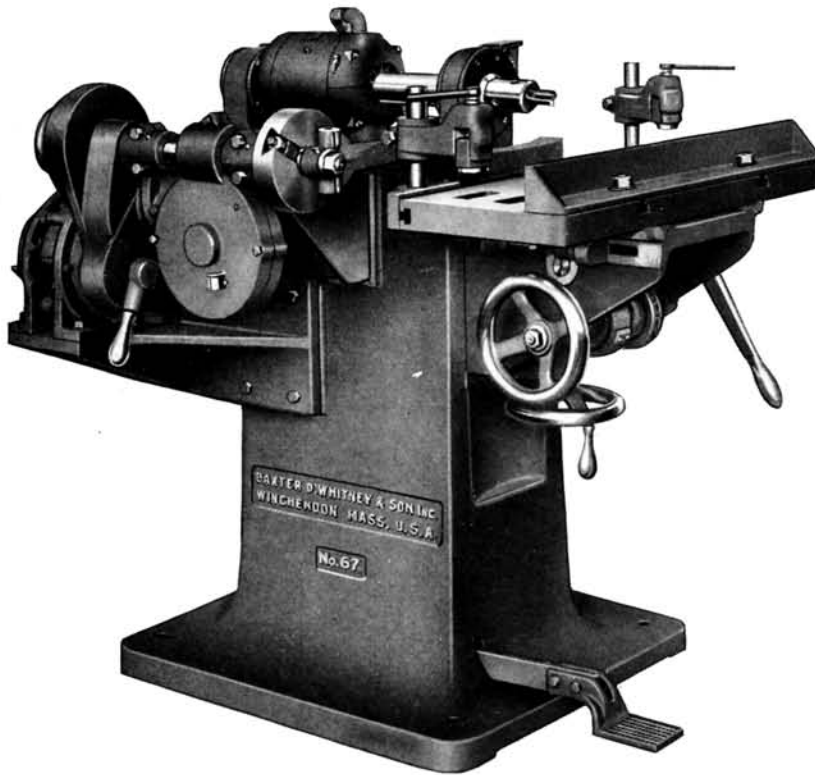
CODE

Caerf Ball Bearings.

Cayey Motor connected to countershaft by flexible coupling.

Cauxp Standard Motor Base and pulley for belt connection.

Code	Floor Space	Boxed for Export		
		Wght. Lbs.	Wght. Lbs.	Cubic Feet
Afov	3'x6'6"	925	1220	55



No. 67 Horizontal Bit Mortiser

Direct Motor Driven — Power Feed

THE WHITNEY No. 67 Horizontal Bit Mortiser is built especially for the mortising done in furniture, chair, desk, cabinet and auto body factories. It is also adapted for the mortising work in sash, door and blind factories. Such work as corner blocks, cupped work either round or oblong and similar pieces can be economically made with No. 67.

The motor is mounted on the ball bearing spindle holding the bit. The head block carrying the spindle is operated back and forth by a motor to cut a mortise of the desired length.

This mortiser can be furnished with a table operated by a hand lever or equipped with a power feed.

Specifications

Table—12" deep by 30" wide. Speed of Spindle 3600 R. P. M. Height of bit from floor 38 $\frac{3}{4}$ ".

Capacity—Cuts any size mortise up to 1 $\frac{1}{2}$ " wide, 4 $\frac{1}{2}$ " deep and 6" long. Table drops 5" to take stock 10" wide when mortise is centered.

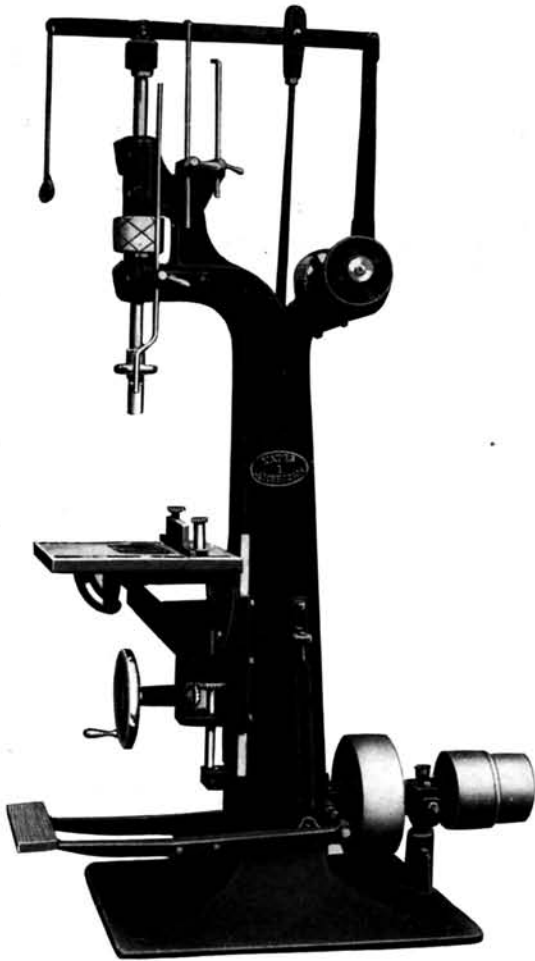
Regular Equipment

Motors—Motor operating head block. Motor on ball bearing spindle. Two switches for A. C. 220-440-550 volts, 3 or 2 phase, 60 or 50 cycle current.

Chuck—To take bits with $\frac{1}{2}$ " straight shanks.

Bits—1 each $\frac{5}{16}$ "- $\frac{3}{8}$ "- $\frac{1}{2}$ ".

Code	No.	Floor Space	Wght. Lbs.	Boxed for Export Wght. Lbs.	Export Cubic Feet
Acgal	67	3'x4'	1300	1700	70



No. 1 Vertical Borer

YATES-AMERICAN No. 1 Vertical Borer is a smaller capacity machine than the No. 2, but within its capacity does high grade work and is convenient to operate. No. 1 is a substantially constructed machine, having broad base with wide foot flanges, practically eliminating vibration. Belt or motor drive can be supplied. Self-centering chucks can be furnished on extra order.

Regular Equipment

Capacity—Spindle is 10" from post and has throw of 10". Bit socket is removable and will receive bits having 1/2" shanks.

Spindle—1 5/16" diameter splined in a long sleeve which forms the journal for the boxes. Stops furnished to regulate the depth of hole, raising point of spindle, and to hold stock to the table.

Table—Has universal movement and may be tilted forward or to either side; has vertical adjustment of 9" by hand wheel and bevel gears. Distance from bit socket to table when raised to its highest point is 11"; when dropped to its lowest point, 20"; maximum dis-

tance from front of table to guide, 15 3/4"; width of table, 18".

Countershaft—Has tight and loose pulley 8 1/2" x 3 3/4", 500 R. P. M.

Bits—5 regularly furnished to bore holes 3/8", 1/2", 3/4", 7/8" and 1" diameter.

H. P.—3.

Extra Equipment

CODE

Cauxp Standard Motor Base and Pulley for belt drive.

Cawav Motor mounted on Frame of Machine and belted to Spindle Pulley.

Code	Floor Space	Wght. Lbs.	Boxed for Export Wght. Lbs.	Export Cubic Feet
Addip	4'4"x2'6"	800	1300	70



No. 2 Vertical Borer

YATES-AMERICAN No. 2 Vertical Borer is one of a complete line of boring machines manufactured by this company. It is a comparatively heavy duty borer, but can be used for lighter work as well. The table is of ample size to permit handling large work. The No. 2 is a high grade machine for furniture and other factories. Self-centering chucks can be furnished on special order.

Regular Equipment

Capacity—Spindle is 18" from post and has throw of 12". Bit socket removable and receives bits having 1/2" shanks.

Spindle—Ball bearing. 1 1/16" diameter. Connected to either motor or countershaft by cut spiral bevel gears running in ball bearings. Speed 1800 R. P. M. Ball bearing thrust box is gibbed in long ways to support spindle in the stroke. Stops are furnished to regulate depth of hole, raising point of spindle, and to hold stock to the table.

Table—Has universal movement and may be tilted forward or to either side. Has vertical adjustment of 9" by hand wheel and bevel gears. Distance from bit socket to table when raised to its highest point, 13 1/2"; when dropped to lowest point, 24 1/2"; maximum distance from the front of table to guide, 20"; width of table, 24".

Drive—Countershaft has tight and loose pulley, 10"x4", 1800 R. P. M.

Bits—Six furnished to bore holes 3/8", 1/2", 5/8", 3/4", 7/8" and 1" diameter 8" twist.

H. P.—3.

Extra Equipment

CODE
Cayob
Cauxp

Motor on Special Base and geared to Spindle.
Standard Motor Base and Pulley for belt connection.

Code	Floor Space	Wght. Lbs.	Boxed for Wght. Lbs.	Export Cubic Feet
Adifw	5'9"x2'7"	1500	2200	85



No. 9720 Borer

YATES-AMERICAN No. 9720 Borer is made with both a vertical and horizontal spindle. It meets the demand for a combination borer for high grade work. Self centering chucks are supplied on special order. In some respects the No. 9720 is similar to the No. 2, and in such cases the specifications apply to both machines, as noted.

Regular Equipment

Capacity—Same as No. 2 Borer.

Vertical Spindle—1 1/16" diameter, splined in a long sleeve which forms the journals for the stops provided for regulating depth of hole, raising point of spindle, and to hold stock to the table. Spindle has ball thrust bearing at top. Speed 1350 R. P. M.

Horizontal Spindle—Has ball thrust bearing and throw of 6 1/2". Distance from end of chuck, when spindle is back as far as it will go, to the center of vertical spindle, is 8 1/2". Speed 1700 R. P. M.

Table—Has universal adjustment and may be tilted to either side or forward. Has vertical adjustment of 9" by hand wheel. Distance from bit socket to table when raised to its highest point, 15 1/2"; when dropped to lowest point, 26 1/2"; maximum distance from front of table to guide, 20"; width of table, 24".

Drive—Countershaft has tight and loose pulley, 10"x4", 500 R. P. M.

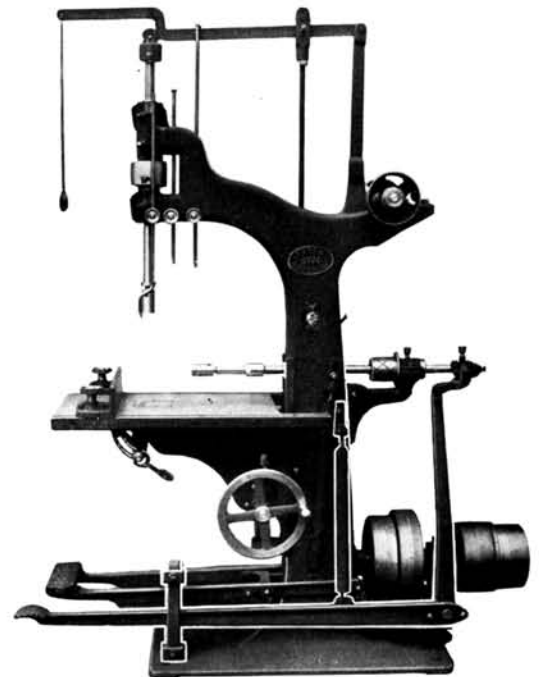
Bits—Six furnished. Same as with No. 2 Borer.

H. P.—3.

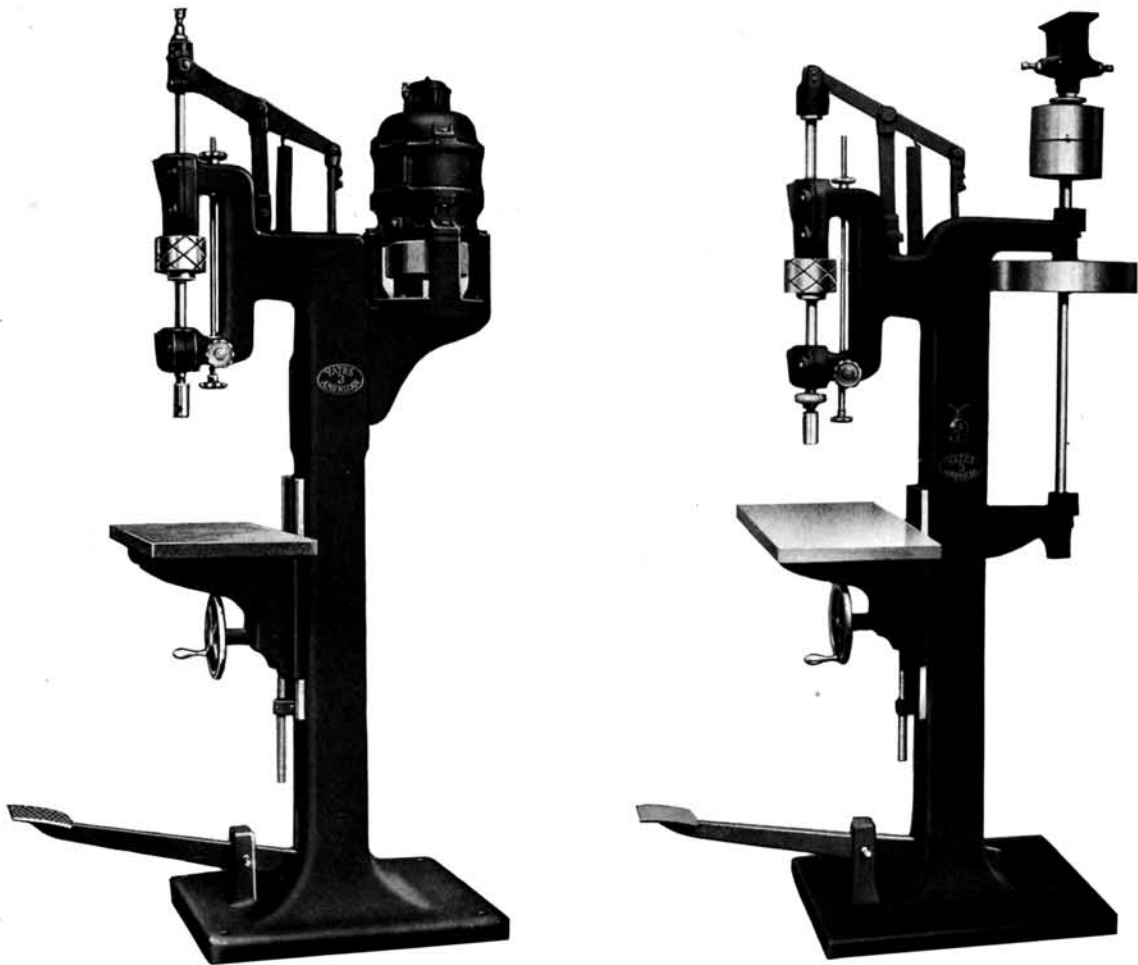
Extra Equipment

CODE

Cauxp Standard Motor Base and Pulley for belt connection.
Cawav Motor mounted on Base of Machine and belted to Spindle Pulley.



Code	Floor Space	Wght. Lbs.	Boxed for Wght. Lbs.	Export Cubic Feet
Adihy	5'9"x2'7"	1570	2300	85



No. 3 Vertical Borer

YATES-AMERICAN No. 3 Vertical Borer is a medium weight machine, adapted for furniture, chair and other shops. Like other Yates-American machines of this type, the No. 3 is accurate and durable. A plain wood table is regularly supplied but an iron table is optional. Tilting table can be had on extra order. Also, self-centering chuck on order.

Regular Equipment

Capacity—Spindle is 12" from post and has throw of 6". Bit socket is removable and will receive bits having $\frac{1}{2}$ " shanks.

Spindle— $1\frac{5}{16}$ " diameter, splined in a long sleeve which forms journal for boxes. Stops furnished to regulate depth of hole, raising point of spindle and to hold stock to the table. Spindle has ball thrust bearing.

Table Bracket—Has screw adjustment of 12" vertically with an adjustable gib on the slide. Table is usually of hardwood, glued up.

Depth Gauge—Threaded for adjustment and made fast with thumb screw.

Countershaft—Has three bearings, the lower one being adjustable vertically 3' so that the ceiling hanger

can be set for any ordinary height of ceiling. Tight and loose pulley $8 \times 3\frac{1}{2}$ ", 1200 R. P. M.

Bits—5 regularly furnished to bore holes $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ " and 1" diameter.

Horse Power—2.

Extra Equipment

CODE

Cecip Tilting Table

Ceefw Iron Table (Optional).

Cauxp Standard motor base and pulley for belt drive.

Cawav Motor mounted on frame of machine and belted to spindle pulley.

Code	Floor Space	Wght Lbs.	Boxed for Export Wght. Lbs.	Export Cubic Feet
Addor	2'x4'4"	900	1400	45



No. 985 Double Chair Borer

YATES-AMERICAN No. 985 Double Chair Borer is used for all kinds of vertical and angle boring in chair work. It will bore from 5" to 30" horizontally; the bits hang 21" from frame and bore to 5" deep.

Regular Equipment

Radius Arms—Carrying arbors; pivoted to sleeve with driving countershaft for center; clamping wheels hold arms rigidly to heavy segment bar.

Spindles—Steel; ground journals; upper end works in sleeve, which in turn runs in bearing 7" long; lower spindle box is a steady box; adjustable; yokes carrying boxes are swiveled on radius arms adjustable laterally both ways and held by clamping screws.

Table—Adjustable 15" vertically on gibbed way cast on the frame; tilts to 45 degrees to and from column.

Foot Levers—May be worked simultaneously or separately; adjustable to different heights for bit length and depth of hole; attached to boring spindles by ball joints and swivels adjustable in every direction, and for wear, thus avoiding cramping of any of the movable parts.

Adjustable Screw Top Rods—Provided for each spindle; follow spindle to any point of adjustment either lateral or angular.

Drive—Tight and loose pulley 8"x4 $\frac{3}{8}$ "; speed 1000 to 1200 R. P. M., giving the spindles 3000 to 3600 R. P. M. or more if desired. Countershaft 8" long; by means of swiveled ceiling hanger any height of ceiling or line shaft may be accommodated.

Equipment—Self-centering chucks furnished; no bits.

H. P.—2 to 5.

Extra Equipment

CODE

Cauxp Standard Motor Base and Pulley for belt connection.

Cawav Vertical Motor Mounted on Frame of machine and Coupled to Countershaft.

Code	Floor Space	Wght. Lbs.	Boxed for Export Wght. Lbs.	Export Cubic Feet
Afows	3'x4'4"x7'6"	1500	2100	85



No. 2 Post Borer

YATES-AMERICAN No. 2 Post Borer is adapted for use in chair and furniture work, carriage and general woodworking shops. It will bore 5" deep up to 2" in diameter, to center of about 18" widths. A plain bit socket for $\frac{1}{2}$ " bits is regularly furnished. When ordered we can furnish self-centering chucks, which go on the spindle without fitting, at slight extra cost.

Regular Equipment

Spindle—Steel; $1\frac{1}{16}$ " diameter; babbitted box with bronze end step and take up screw for the lever sleeve; hangs 9" from the post.

Table Bracket—Screw adjustment of 12" on slide; ample provision for taking up wear; table of hard wood, glued up, $14"x28"$; can be furnished of iron on extra order; tilting table can also be provided at extra cost; latter swivels to tilt any direction.

Stop—Threaded for adjustment; clamped with thumb screw.

Drive—Tight and loose pulley; countershaft three bearings 6' long; pulleys $8"x3\frac{1}{2}"$; 1200 R. P. M.

Post— $8"x8"-12'$ long furnished.

H. P.—1 to 5.

Extra Equipment

CODE

Cecip Tilting Iron Table.

Cauxp Standard Motor base and pulley for belt connection.

Cawav Vertical Motor Mounted on Base Attached to Post and belted to Spindle.

Ceovn Self-centering chuck.

Code	Floor Space	Boxed for Export		
		Wght. Lbs.	Wght. Lbs.	Cubic Feet
Afoxt	4'x4'2"x12'	700	900	50



Belt Shifter—Attached to frame and operated by lever.

Drive—Tight and loose pulleys $8"x3"$; 800 R. P. M.

H. P.—1 to 2.

Extra Equipment

CODE

Cauxp Standard Motor Base and Pulley for belt connection.

Ceovn Self-centering chuck.

Code	Wght. Lbs.	Boxed for Export	
		Wght. Lbs.	Cubic Feet
Afoyv	250	260	4

No. 5 Gear Driven Post Borer

YATES-AMERICAN No. 5 Gear Driven Post Borer is designed especially for use in chair and furniture factories, although it will be found useful in any kind of general woodworking shops.

Regular Equipment

Spindle—Driven by bevel gears which are fully protected; 12" throw; depth of hole regulated by set collar on the spindle; $13\frac{1}{2}"$ from center of spindle to first bolt holes in frame; takes bits with shanks 2" long, $\frac{1}{2}"$ diameter. No bits furnished.





Nos. 1 and 2 Double Horizontal Boring Machines

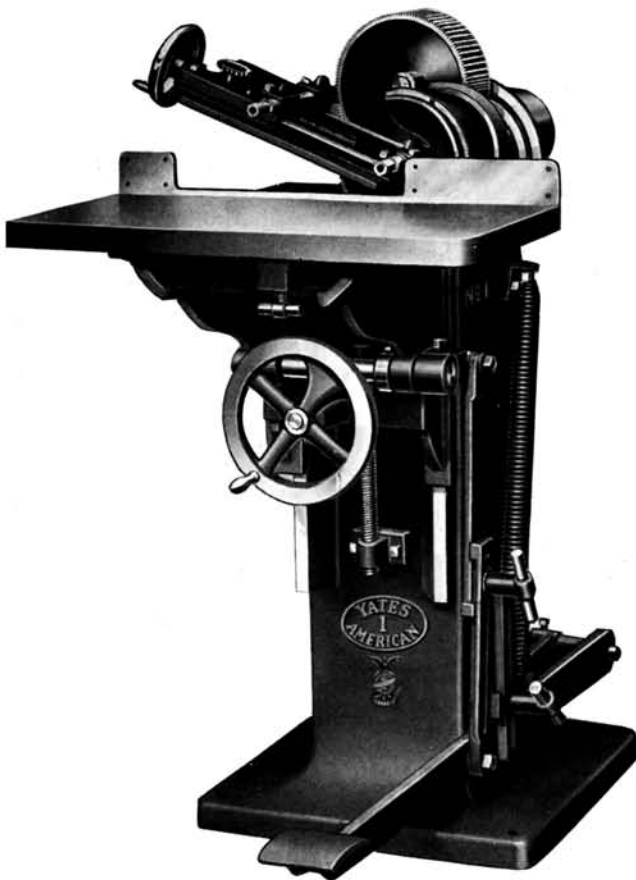
YATES-AMERICAN Nos. 1 and 2 Double Horizontal Boring Machines are intended for that class of work in which two holes are to be bored at the same time as in doweling, carriage, cabinet, chair, car and other similar work. The frame is cast in one piece, strong and well proportioned. The No. 1 machine will bore holes 1" to 10" apart and 5" deep; the No. 2 16" apart and 5" deep, diameter of holes from $\frac{1}{8}$ " to $\frac{3}{4}$ ". The bits are usually arranged to carry screw shanks.

Regular Equipment

Spindles—Hard steel; bearings carefully fitted and scraped. Mounted in an adjustable head which swivels around one of them, so that they may be set at an angle from the horizontal line of the table as shown in the cut of No. 1. The range of adjustment is from a horizontal to a perpendicular line and beyond. Distance between the centers is adjusted by a screw on a gibbed slide independently of the angular adjustment in any position.

Table—9" vertical adjustment on gibbed ways; moves to and from the bits 6" on gibbed ways.

Intermediate Gear—Mounted on adjustable radius arm, so that it always retains an even mesh with the central spindle and the arm is held rigidly at the outer end by a segment bolted to the frame, thus preventing vibration.



Gear and pinions are very carefully and accurately cut, and are very wide on the face insuring durability and operation without backlash or rattle. Main gear 4" face, and covers the two pinions on the spindles which are thus enlarged in diameter.

Adjustment Screw—Works by crank under table, making it very convenient; foot lever attachment applied to the table slide so that the operator has the use of both hands for the work.

Drive—Tight and loose pulleys 8"x3 $\frac{3}{4}$ "; speed 600 R. P. M. No. 2 machine has cone pulley for two speeds; countershaft should be located overhead to equalize wear.

Equipment—One pair $\frac{3}{8}$ " or $\frac{7}{16}$ " bits as desired.

H. P.—1 to 3.

Extra Equipment

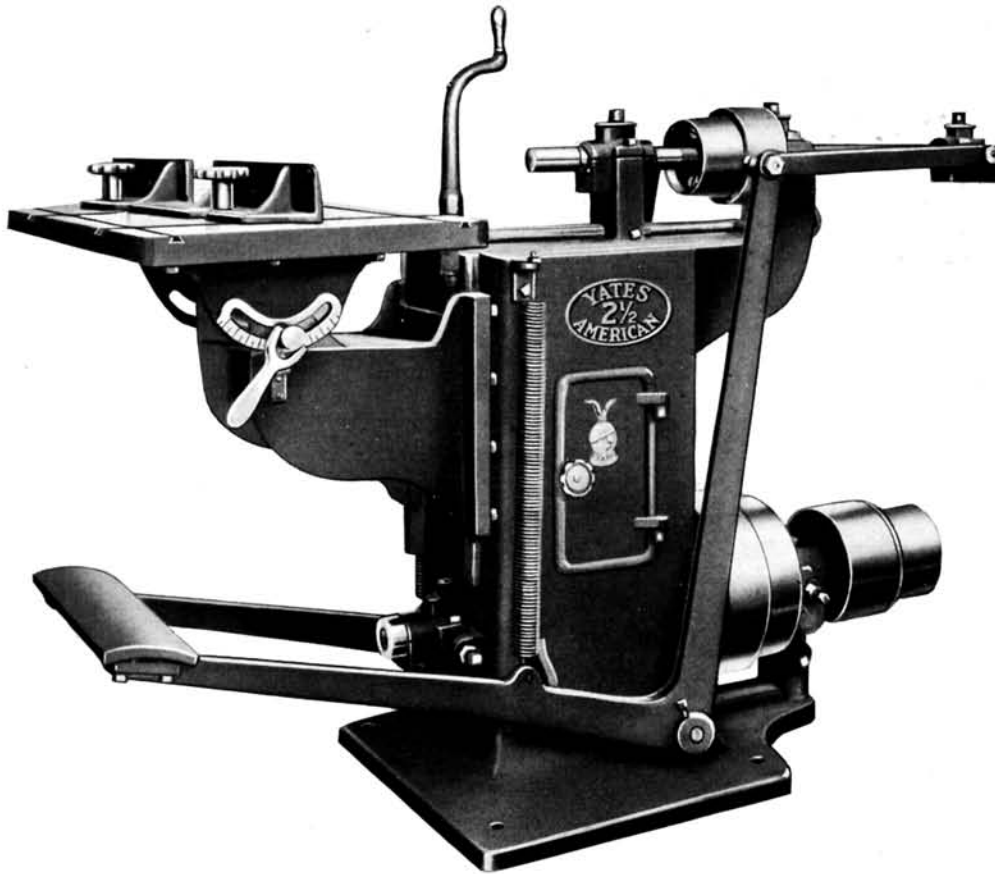
CODE

Caup Standard Motor Base and Pulley for belt connection.

Cawv Motor mounted on base of machine and belted.



Code	Machine	Floor Space	Wght. Lbs.	Boxed for Wght. Lbs.	Export Cubic Feet
Afozw	No. 1	5'x2'4"	900	1160	68
Afpac	No. 2	5'x2'4"	975	1285	68



No. 2 $\frac{1}{2}$ Horizontal Boring Machine

YATES-AMERICAN No. 2 $\frac{1}{2}$ Horizontal Boring Machine is designed for use in furniture, chair, and agricultural implement factories. It has a stroke of 12" and will bore holes up to 3" diameter and to the center of 20" vertically. A plain bit socket for $\frac{1}{2}$ " shank bits, but no bits, is regularly furnished. A self-centering chuck can be furnished on extra order.

Regular Equipment

Boring Arbor—Steel; $1\frac{5}{16}$ " diameter; splined in a steel sleeve which runs in a long bearing of the finest babbitt; all the journals on the boring arbor are of steel; a ball bearing end thrust bearing is provided.

Steady Bearing—Placed next the bit socket; wear can be readily taken up and the bit prevented from dodging as it enters the work.

Table—Iron; 18"x32"; slots for the fence at right angles; thus allowing long work to be bored endwise as well as across at any required angle; table tilts to 45 degrees both ways and the adjustable fence can be clamped in any desired position, square, parallel, or at any angle with the boring spindle. Numerous holes are provided in the fence for the attachment of jigs or stops. The stop gauge may be easily reached by the operator and can be adjusted without stopping the machine.

Foot Lever—Is arranged to give powerful leverage on the boring arbor, and there is a returning spring on

each side of the frame to equalize the action; this arrangement gives a quicker and easier movement than a counterweight. The tension may be adjusted when required. Speed cone on spindle gives speed of 1650 and 2400 R. P. M.

Table Bracket—Has vertical adjustment of 10"; carefully fitted to the ways; screw crank is removable.

Drive—Tight and loose pulleys 8"x4 $\frac{1}{2}$ "; speed 1000 R. P. M.

H. P.—1 to 5.

Extra Equipment

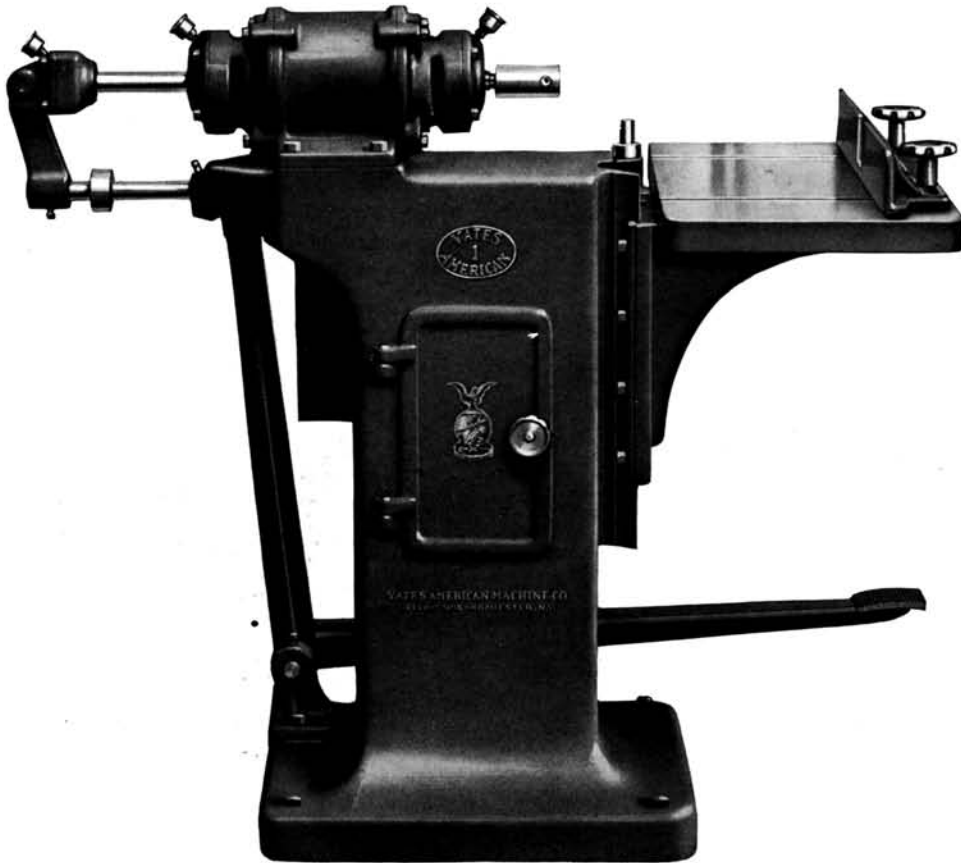
CODE

Caupx Standard Motor base and pulley for belt connection.

Cawav Motor mounted on base of machine and belted to arbor.

Ceovn Self-centering chuck.

Code	Floor Space	Boxed for Export		
		Wght. Lbs.	Wght. Lbs.	Cubic Feet
Afnof	5'7"x2'8"	950	1400	70



No. 1 Horizontal Boring Machine

YATES-AMERICAN No. 1 Horizontal Boring Machine is of neat and practical design for light work in furniture, chair, and general woodworking shops. The frame is bored out hollow and is cast in one piece. The No. 1 will bore $4\frac{1}{2}$ " deep up to 2" in diameter, and to center of 20" vertically. A plain bit socket with $\frac{1}{2}$ " socket is regularly furnished.

Regular Equipment

Spindle—Steel, $1\frac{1}{16}$ " diameter; slides in its own boxes which are longer than the stroke; adjustable stop rod determines the depth of the hole.

Table—Hard wood; glued up; 14"x28"; has iron stop bar adjustable to any angle and held by clamp wheels; 10" vertical adjustment by screw and hand crank; hand crank removable.

Rear Spindle Bearing—Turned smaller; has ball end thrust bearing; all bearings well proportioned and lined with a fine quality babbitt. Foot lever and returning springs are designed for quick and easy operation, without down pull on rear of the spindle.

Drive—Tight and loose pulleys $7 \times 3\frac{1}{4}$ "; 1200 R. P. M.

H. P.—1 to 3.

Extra Equipment

CODE

Ceefw Iron Table.

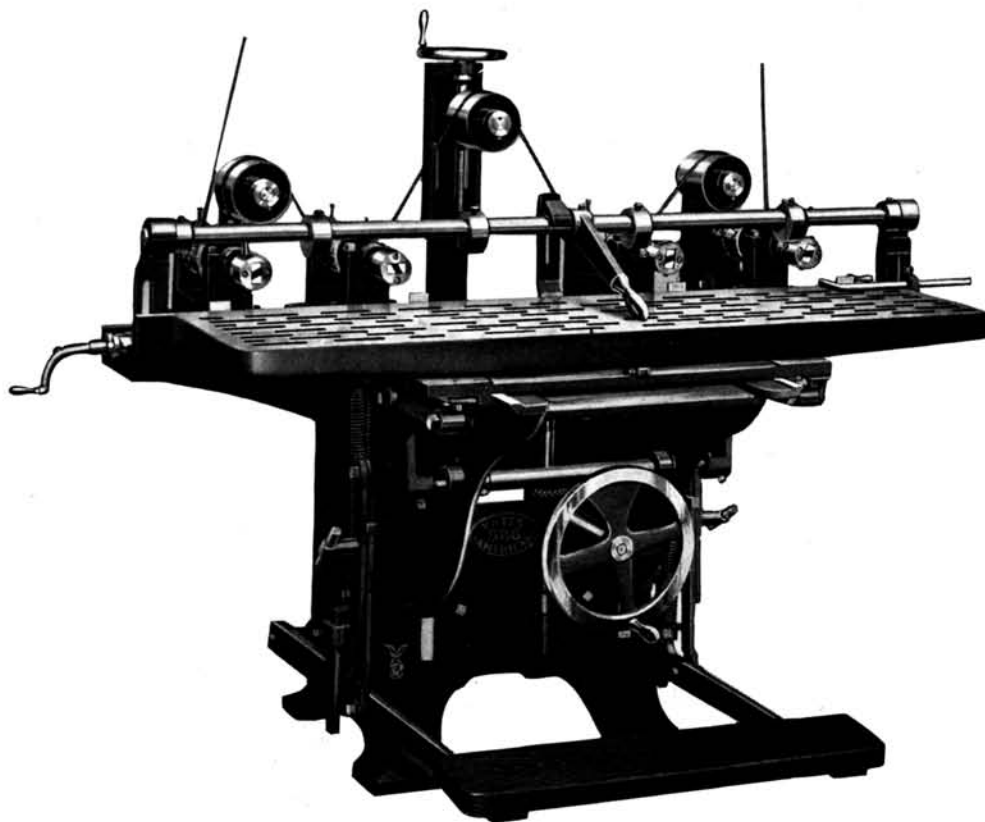
Cauxp Standard Motor Base and Pulley for belt connection.

Cawav Motor mounted on Base of Machine and belted to Arbor.

Cayax Motor directly mounted on Spindle Ball Bearing.

Ceovn Self Centering Chuck.

Code	Floor Space	Wght. Lbs.	Boxed for Export Wght. Lbs.	Export Cubic Feet
Afped	5'2"x2'4"	600	800	40



No. 986 Iron Frame Multiple Borer

YATES-AMERICAN No. 986 Iron Frame Multiple Borer is designed for boring table "filling" and other work which requires particular accuracy. The table moves vertically 8" and horizontally to the bits 6"; there is also an adjustable stop underneath to limit depth of boring.

Regular Equipment

Spindles—Steel; long ground journals; boxes babbitted.

Box Yokes—Adjustable; 6" center to 54" spread of outside spindles.

Idler Pulleys—Attached to box yokes; tightener adjustable by screw; handwheel takes up slack in driving belt.

Table—Vertical and horizontal slides have gibs for compensating wear.

Eccentric Clamp—Receives $\frac{1}{4}$ " to 4" thick, or more; accurate end stop provided.

Drive—Tight and loose pulleys 10"x5 $\frac{3}{8}$ "; speed 750 R. P. M.

Equipment—Self-centering chucks furnished on all spindles. One set of $\frac{3}{8}$ " bits furnished.

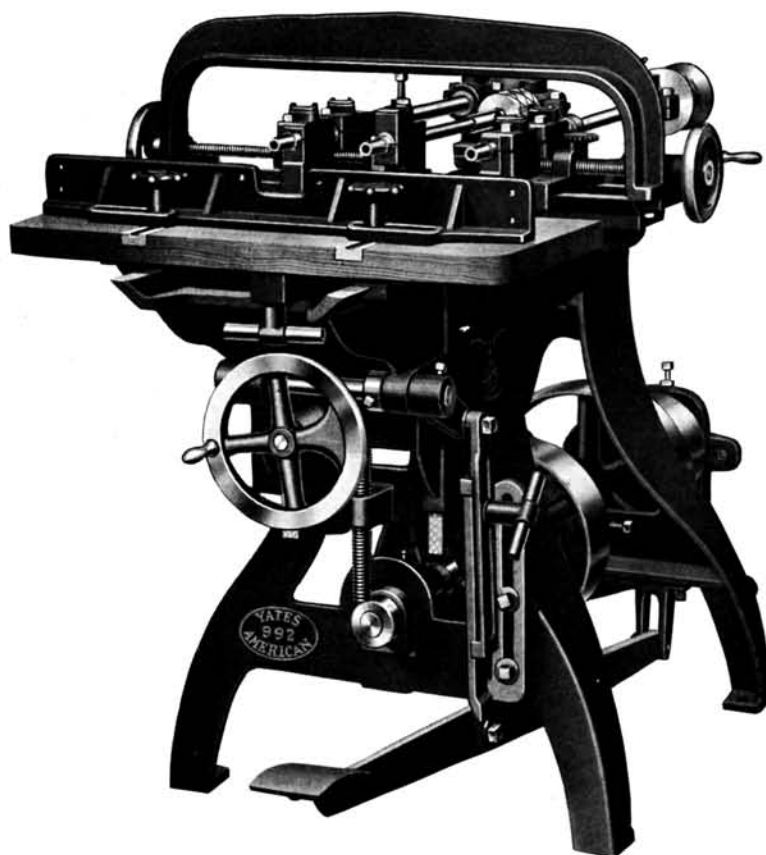
H. P.—5 to 7 $\frac{1}{2}$.

Extra Equipment

CODE

Cauxp Standard Motor base and pulley for belt connection.

Code	Style	Floor Space	Wght. Lbs.	Boxed for Wght. Lbs.	Export Cubic Feet
Adzil	3 Spindle	5'4"x4'4"	1900	2400	106
Adzom	4 Spindle	5'4"x4'4"	1950	2550	106



No. 992 Triple Dowel Borer

YATES-AMERICAN No. 992 Triple Dowel Borer is designed to do work that requires three holes close together for doweling and similar work. The machine will bore up to $\frac{3}{4}$ " diameter and 5" deep.

Regular Equipment

Spindles—Steel; divided boxes adjustable for wear; central spindle has two stationary boxes on frame; double boxes of the outside spindles are gibbed to cross slide and are adjustable to and from central spindle by handwheel and screws. Two outside spindles have hardened tool steel universal joints, and rear boxes are swiveled to permit the adjustment. Outside spindles adjustable $\frac{1}{4}$ " to 10" from central spindle. Idler pulley is provided to take up slack in the belt.

Table—Cast iron; adjustable 6" horizontally; 9" vertically; iron fence provided on table; adjustable to angle in slots across table.

Drive—Tight and loose pulleys $8 \times 4 \frac{3}{8}$ "; speed 500 R. P. M. Countershaft has self-adjusting and adjustable boxes on the frame and a floor bearing outside the pulleys.

Equipment—Three screw shank bits.

H. P.—3 to 5.

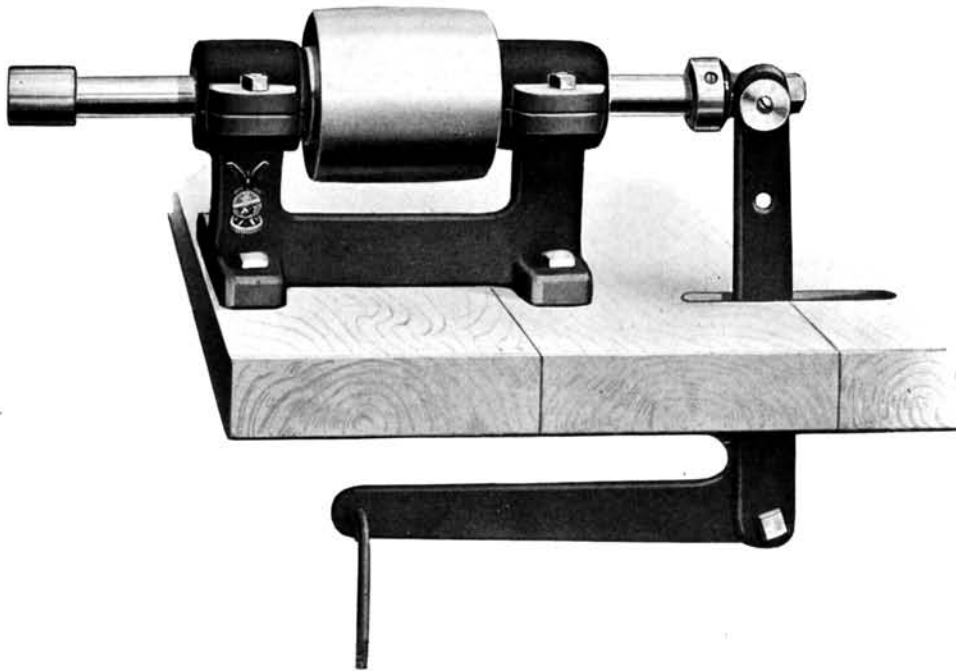
Extra Equipment

CODE

Cayey Motor connected by flexible coupling.

Cauxp Standard motor base and pulley for belt connection.

Code	Floor Space	Wght. Lbs.	Boxed for Export	
			Wght. Lbs.	Cubic Feet
Afpif	2'8"x6'8"	950	1250	60



No. 2 Bench Borer with Lever and Treadle Attachment

YATES-AMERICAN No. 2 Bench Borer with Lever and Treadle attachment, is similar in desirability to our No. 1 in its size and its convenience of installation. With the foot treadle attachment however it is capable of greater production, and is found very valuable in toy shops, small furniture factories etc. We can furnish it for either belt or motor drive.

Regular Equipment

Specifications— $5\frac{1}{2}$ " from center of spindle to base of machine; takes bits with shank 2" long, $\frac{1}{2}$ " diameter; bores holes up to $1\frac{1}{2}$ "; pulley 5" diameter, $5\frac{1}{4}$ " face and should be run 1200 to 1500 revolutions per minute. No bits furnished.

Lever and Treadle Attachment—Gives spindle throw of 6"; provided with stop collar to regulate depth

of hole; lever, connecting rod, and iron brackets furnished.

H. P.—1 to 5.

Extra Equipment

CODE

Cauxp Standard motor base and pulley for belt connection.

Ceovn Self-centering chuck.

Code	Wght. Lbs.	Boxed for Wght. Lbs.	Export Cubic Feet
Afitn	115	130	3

No. 1 Bench Borer

YATES-AMERICAN No. 1 Bench Borer will be found an indispensable tool in any shop. Its efficiency, coupled with the fact that its installation and operation require so little room and power, has made it a general favorite for the small shop, and for odd jobs in production factories. It may be mounted on a bench, or in any convenient place, and we can furnish it for either belt or motor drive.

Specifications— $4\frac{1}{2}$ " from center of spindle to base of machine; takes bits with shank 2" long, $\frac{1}{2}$ " diameter; bores holes up to $1\frac{1}{2}$ "; adjustable depth gauge placed in the base of machine; pulley 5" diameter, 4" face and should be run 1200 to 1500 revolutions per minute. No bits furnished.

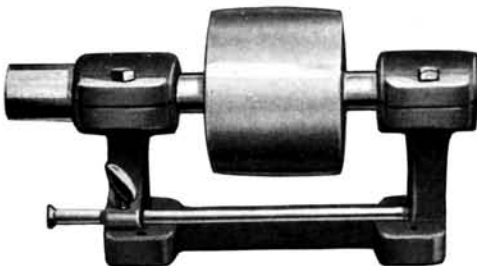
H. P.—1 to 5.

CODE

Extra Equipment

Cauxp Standard motor base and pulley for belt connection.

Ceovn Self-centering chuck.



Code	Wght. Lbs.	Boxed for Wght. Lbs.	Export Cubic Feet
Afism	50	60	3



Mortising Chisels



- 1 Threaded Shank Bit and Grooved Chisel used on Automatic Multiple Hollow Chisel Mortiser.
- 1A Large Hollow Chisel for No. 19, 20, 25 and 191 Vertical Hollow Chisel Mortisers.
- 2 4, 6, 8, 9, 10, 12, 13 and 14. Chisels for use on No. 2 and 3 Power Mortisers and No. 915 Foot Power Mortiser.
- 3 Small Chisel for No. 20, 25 and 191 Vertical Hollow Chisel Mortisers.
- 5 Chisel for No. 10 Sash Mortiser and Relisher and No. 20, 25 and 191 Vertical Hollow Chisel Mortisers.
- 7 Chisel for No. 10 Sash Mortiser and Relisher.
- 11 Hollow chisel for making sash and door pins on No. 2 and 3 Power Mortisers.

Boring Bits

- 21 Standard Bit used on all Hollow Chisel Mortisers.
- 22 Standard Boring Bit with 4 and 6" twist used on all boring attachments for saw benches and on all vertical boring machines. Also No. 986 Multiple Borer.
- 23 Same as 22.
- 24 Bit used on Hollow Chisels in all Vertical Hollow Chisel Mortisers and Mortisers carrying boring attachments.
- 25 Relisher Bit used on No. 10 Sash Mortiser and Relisher.
- 28 Dowel Bit for No. 1 and 2 Double Horizontal Boring Machines and No. 992 Triple Dowel Borer. Suitable for crossgrain boring.
- 29 Brad Point Milled Bit used on same machines as "28." For end-grain boring, but does satisfactory work on coarse cross-grain.
- 30 Boring bit used on boring and grooving attachment on all Sash Stickers.
- 31 End Boring Bit used on horizontal end boring attachment on Nos. 1 to 4 Combined Jointer and Sander.
- 32 Vibrating Mortising Bit used on No. 4 Bit Mortiser.
- 34 Same as "32."
- 35 Router bit used on No. 10 Sash Mortiser and Relisher.
- 36 and 37 Boring Bits used on No. 5 Blind Stile Mortising and Boring Machine.

