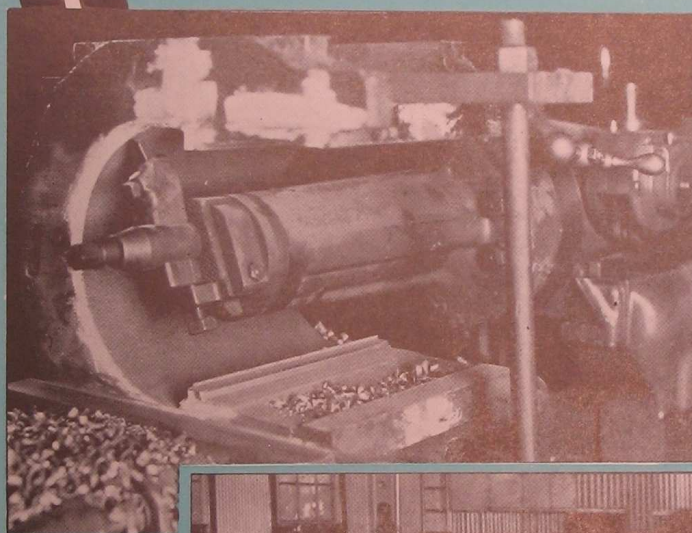
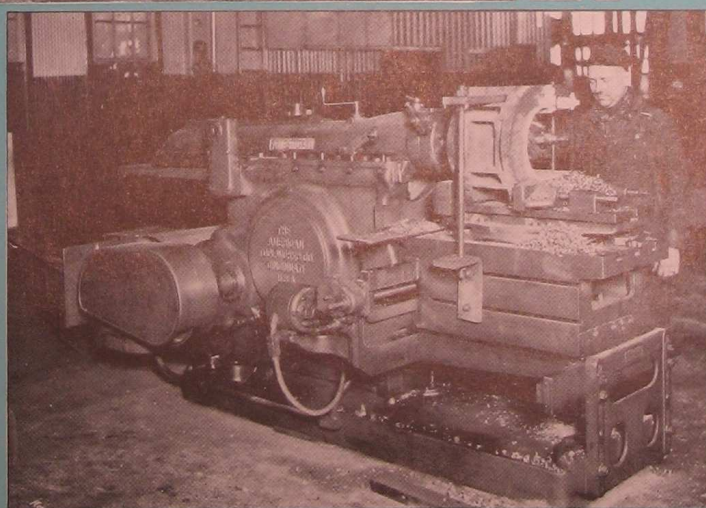


CATALOG No. 220

THE NEW **AMERICAN** AUTO OILED RAILROAD **SHAPER**



**THE IDEAL
SHAPER *for*
RAILROAD
WORK**



THE AMERICAN TOOL WORKS COMPANY
CINCINNATI U.S.A.

LATHES

RADIALS

SHAPERS

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"American" Auto-Oiled Shapers for Railroad Service

The "American" Auto-Oiled Railroad Shaper is a very highly developed and completely equipped shaper for railroad service. Not only have the requirements of rigidity and power been amply complied with, but a wide assortment of highly specialized equipment has been developed exclusively for railroad work.

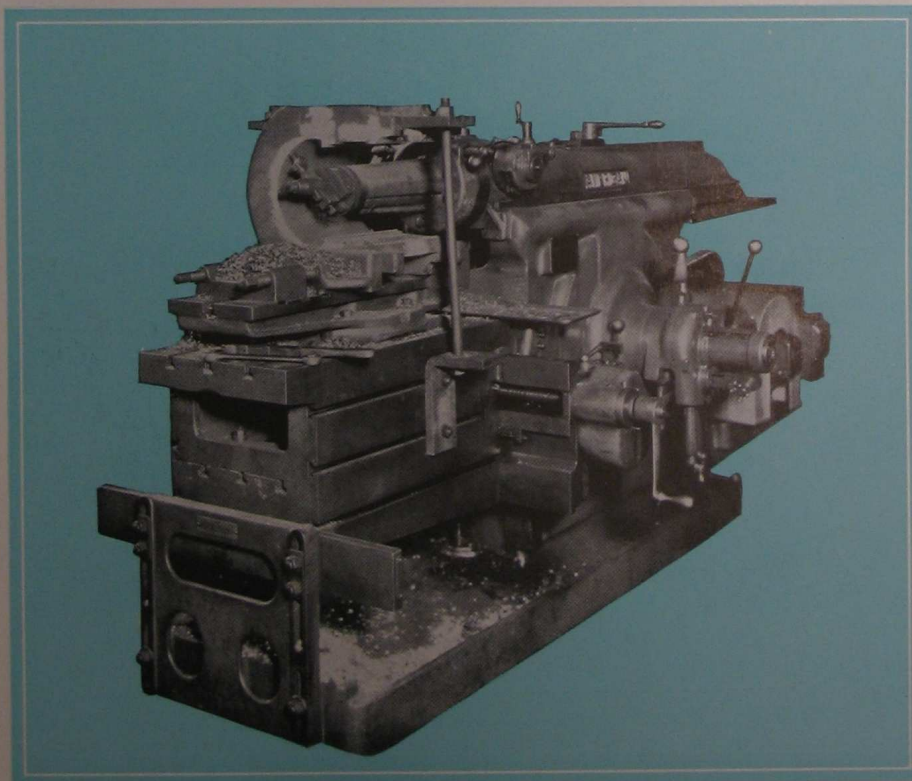
In recognition of the constantly increasing severity of railroad shop machining operations and the desire of railroad mechanical officials for greater machine shop efficiency, we have designed this new shaper with a greater factor of operating efficiency than is usually found in a machine of this type.

In developing this machine we have not permitted ourselves to be governed solely by conditions as they exist today, but have endeavored to visualize the future developments in railroad work and to build our shaper accordingly. Power input has been increased beyond that of any other shaper. Metal has been generously employed and scientifically distributed to resist various stresses. Power transmitting elements have been made of unusually large proportions and of the very best materials, both to transmit power efficiently and to impart to the machine long life and low maintenance cost. All controls have been carefully located to provide the utmost convenience of operation with the least possible confusion to the operator.

Our special attachments for railroad service incorporate the very latest and most modern ideas in shoe and wedge chucks, driving rod brass attachments, knee type tables, driving box planing fixtures and attached boom cranes.

Prior to the development of this equipment, each and every attachment was discussed with prominent railroad shop officials, resulting in the incorporation of several novel, yet practical ideas for increasing its efficiency and usefulness. When discussing shaper attachments with railroad officials, we found that special emphasis was placed by all upon the desirability of quick adjustments and large proportions for resisting heavy cuts.

You will find both of these features strongly emphasized in the following attachments.



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Universal Shoe and Wedge Chuck

This unit is an improvement upon the usual jack screw type of chuck, and will cover all the requirements of shoe and wedge planing, including the planing of the taper fits as well as the final machining to correct the alignments after fitting the shoes and wedges to the frames.

The chuck is adjustable for width and is built in two sizes, the smaller size having a maximum capacity of 10" width—the larger size 18" width. The movable jaw which provides the width adjustment is secured by bolts and located by a tongue fitted to a groove in the base.

Two pairs of adjustable wedge blocks provide for any desired angular setting of the work, while two size blocks which are made to suit the width of the work are used to hold the alignment while the wedges are being adjusted. The cross bar at the front absorbs the thrust of the cut and ties the jaws together.

A series of angular work holding screws secure the shoe or wedge in place.

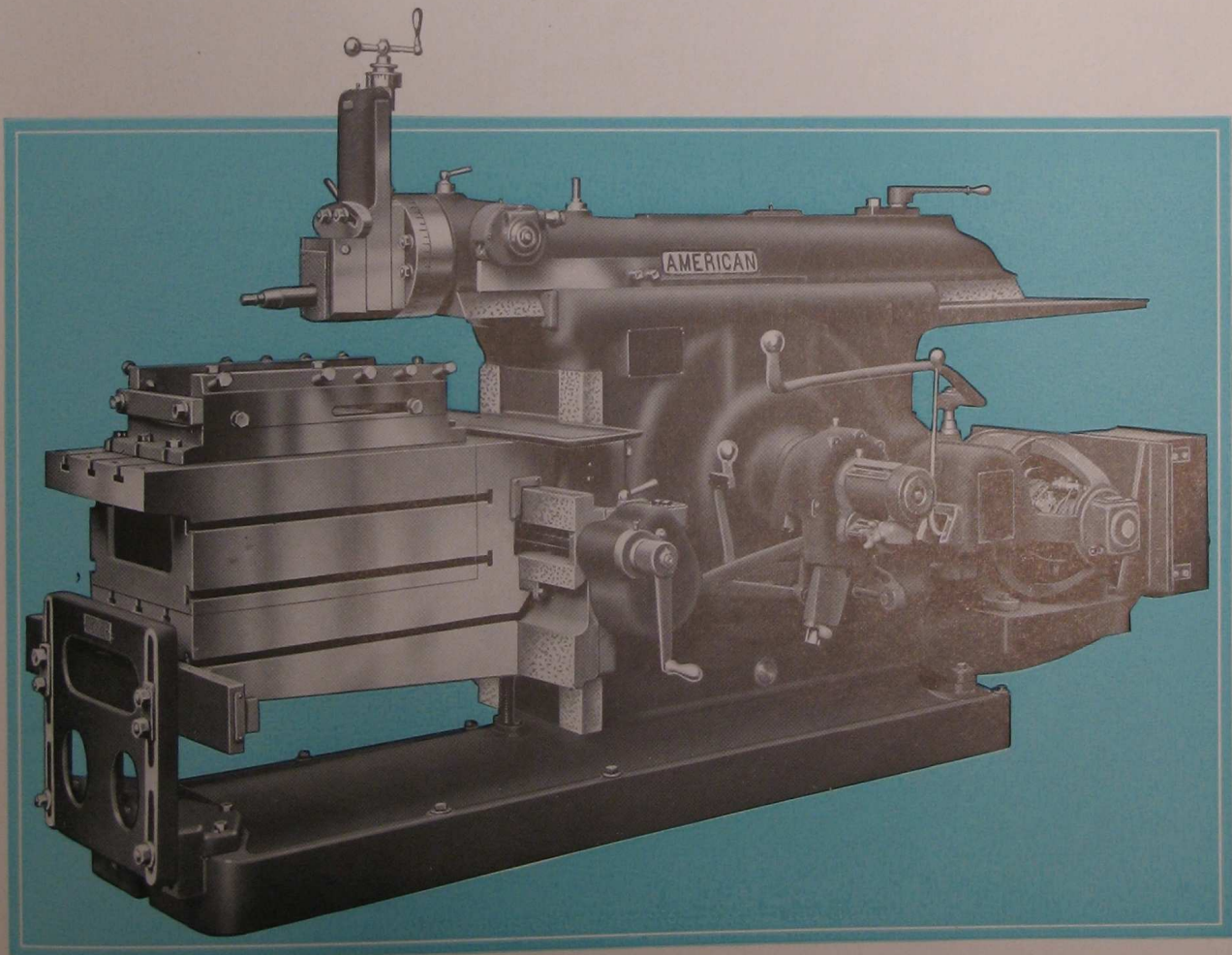
The chuck is securely bolted to the table top and is aligned by a tongue on the base which fits into the center tee slot of the table.

When ordering, specify the widths of size blocks required.

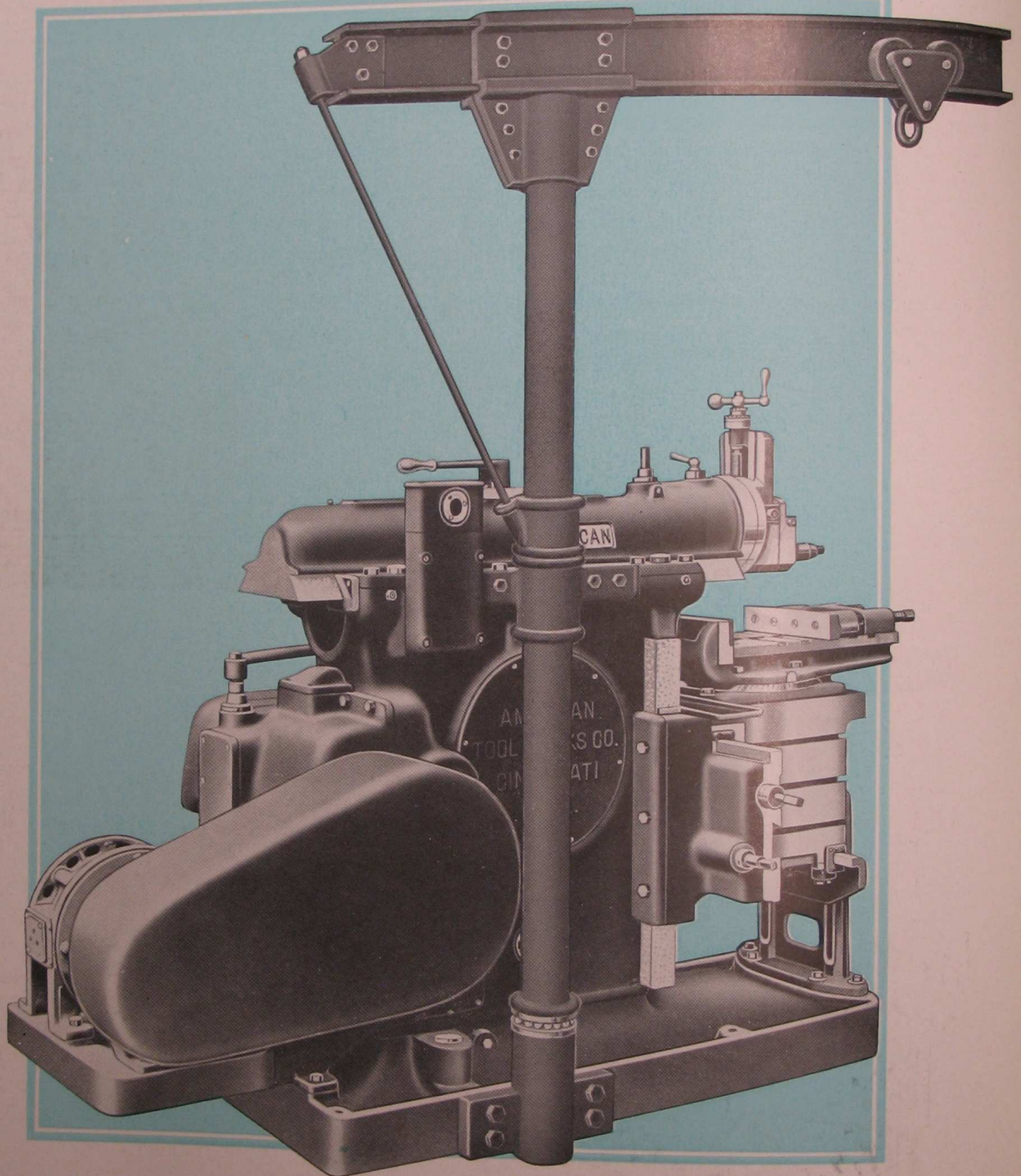
Approximate Weight—250 lbs. (10" size.)

Regular Capacity—10" width, 22" long.

Special Capacity—18" width, 22" long.



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The boom crane attachment is a great convenience for handling heavy pieces. It can be supplied as an extra on all sizes of "American" Railroad Shapers.



Driving Rod Brass Attachment

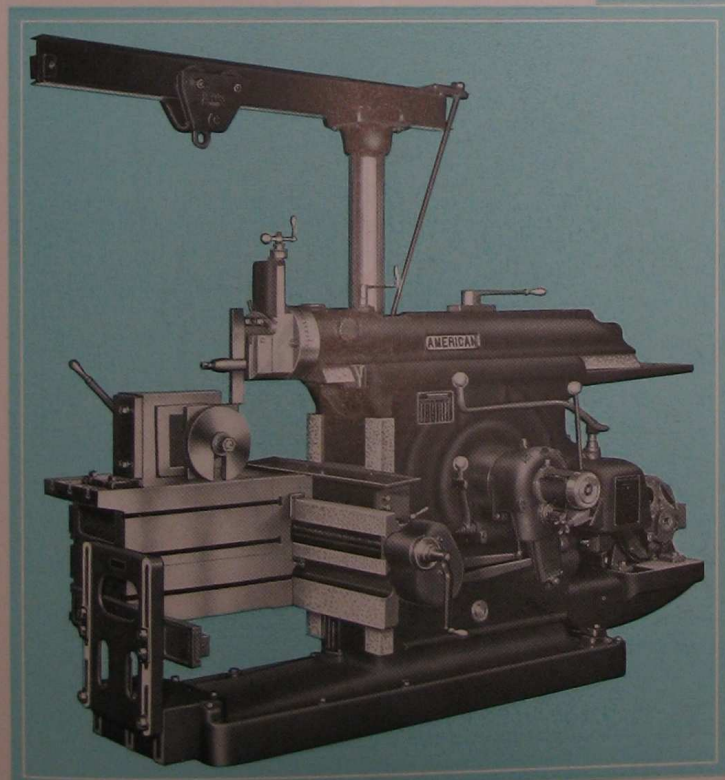
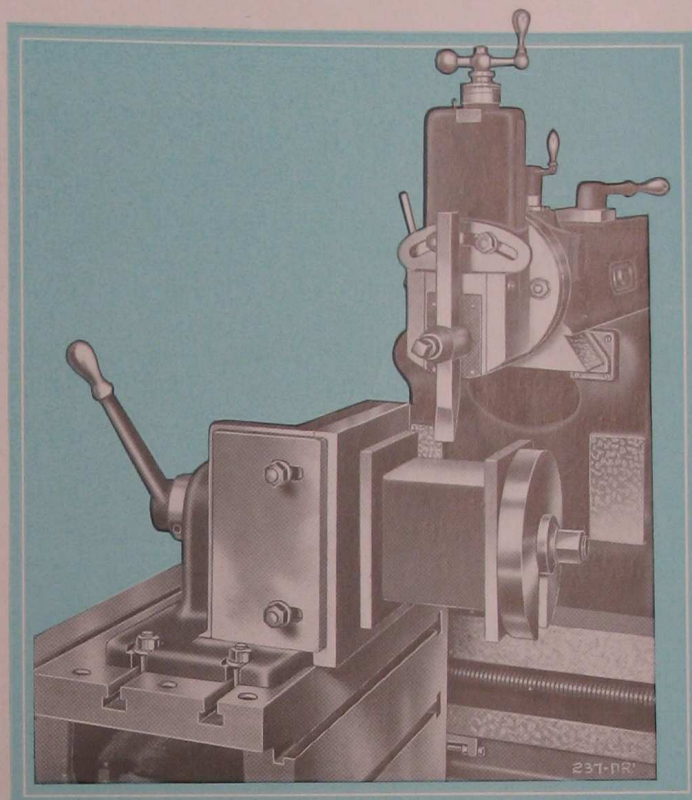
This fixture is a very rugged and useful unit. It is bolted to the top face of the regular table, and is used for the planing operations on the back-end connecting rod brasses in the main driving rod strap.

When the work is mounted on the trunnion, the parallel flanges and the taper side fits can be rapidly machined.

The trunnion is revolved by the hand wheel and indexed at 90° positions by a sliding plate which engages the square edges of the trunnion block.

By inserting a small wedge between the parts, the tapered face can be machined.

This type of indexing device is superior to the old plunger locks which soon become worn and trappy.



The index plate is quickly clamped by two bolts and is aligned by a square seat at the bottom.

The slotted washer permits of quick set-up and release of the work.

Approximate Weight—175 lbs.

Note—When ordering, specify sizes of brasses to be machined.

Customers make the centering bushes for holding the boxes on the arbor when boxes are bored before being machined outside.



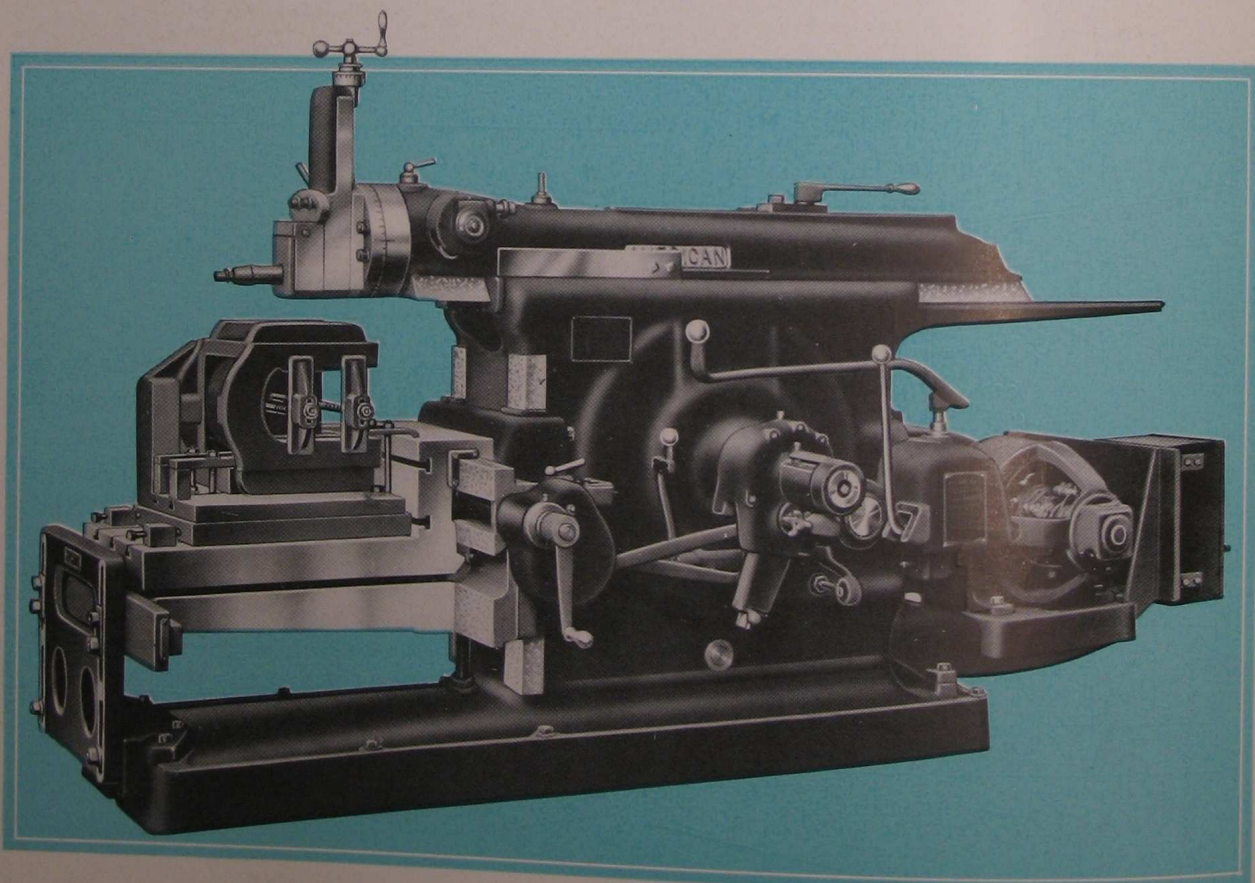
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Main Driving Box Planing Fixture for Shoe and Wedge Fits

Mounted on Knee Type Table

The Main Driving Box Planing Fixture provided for "American" Railroad Shapers accomplishes a decided time-saving by eliminating two work settings when planing boxes with angular flanges. Instead of having to set the work for each one of the three flange faces, which is necessary when using other fixtures, the work need be set only once with our equipment, as the swiveling feature of our fixture provides for the flange angles.

This fixture is designed for mounting on the knee type table to which it is securely bolted and solidly held in place against the vertical face of the table by stop blocks located at the front of the table. It consists of a heavy base upon which is mounted the swivel plate which carries the fixture or chuck for holding the work. The work holding fixture is provided with an angle plate at one side and a stop at the front for aligning the work and holding it securely in position. Heavy clamps fitted into tee slots both front and rear assist in holding the work against the thrust of the cut, resulting in a rigidity permitting unusually heavy cuts and coarse feeds. The work itself is mounted on parallels to permit the flange to clear the fixture.



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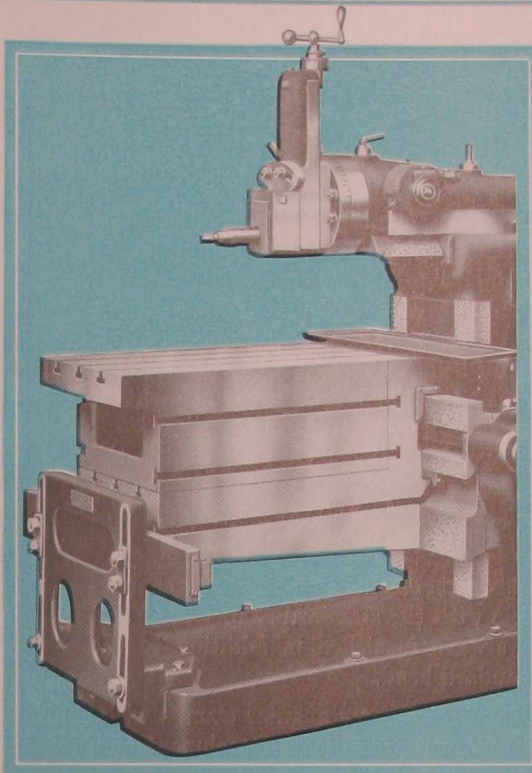
Knee Type Table With Special Top

The Knee Type or Drop Table is designed primarily for holding the Main Driving Box Planing Fixture for machining driving box flanges. The supporting surface of the table is dropped sufficiently to provide for the height of the driving box fixture and work. This table is a very heavy, rigid unit with tee slots in both the horizontal and vertical faces and is supported by a table support of unusual proportions. It has both power and hand traverse across the rail in either direction and is elevated and lowered the same as a standard shaper table through a telescopic screw with heavy ball thrust bearing.

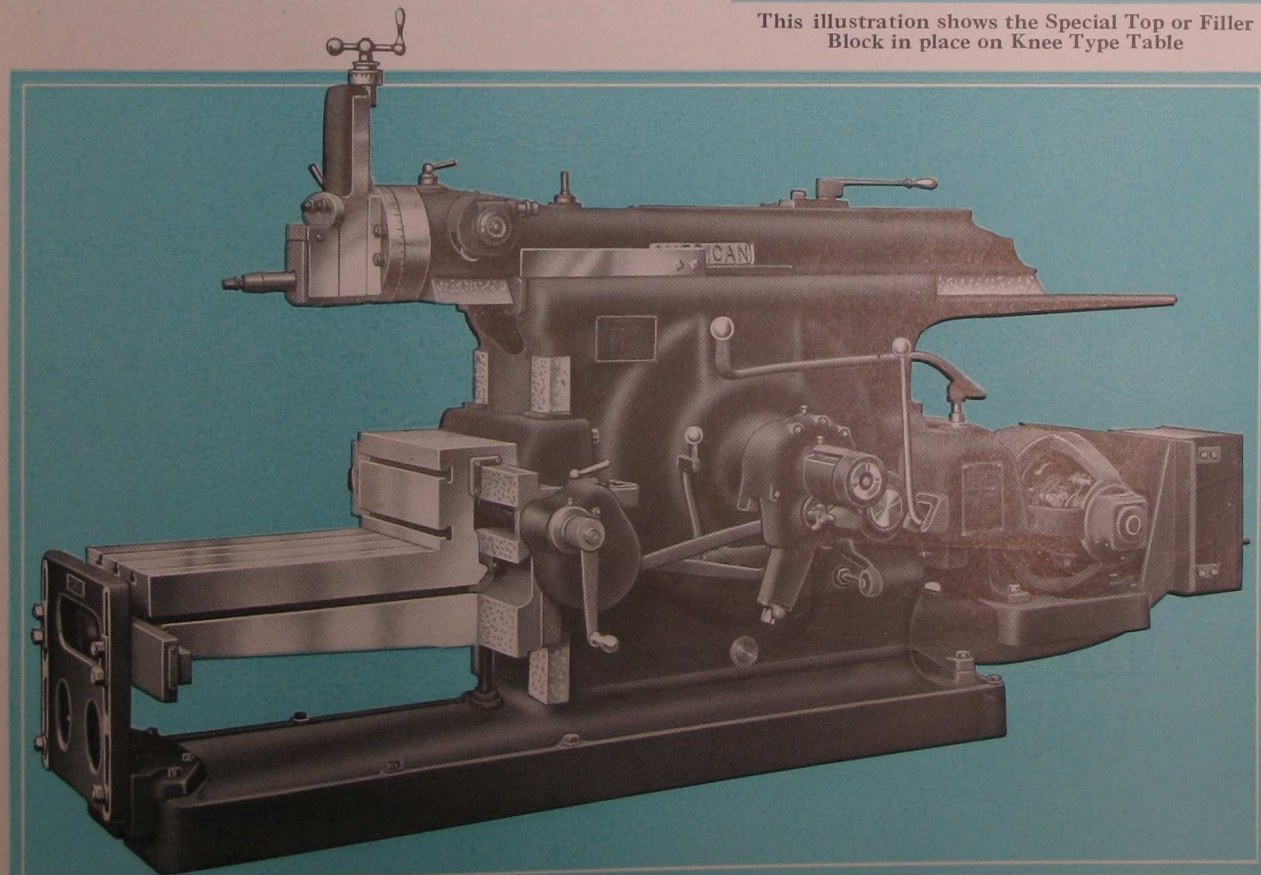
The Special Top is generally supplied with the Knee Type Table, but only on order. This auxiliary top is merely a fill-up block to bring the working surface of the table to its normal height to simplify the planing of work other than driving box flanges. This top is securely bolted to the knee table through the tee slots in both the horizontal and vertical faces and is itself supplied with generous tee slots in the top surface for bolting of work.

A very large working surface is presented by the special top which is augmented by the extension at the rear which covers the vertical face of the Knee Type Table and protects it from chips and dirt.

Maximum Distance of Knee Type Table to Ram—28".
Maximum Distance, with Special Top in place—17".
Width of Table—20".
Approximate Weight—500 lbs.



This illustration shows the Special Top or Filler Block in place on Knee Type Table



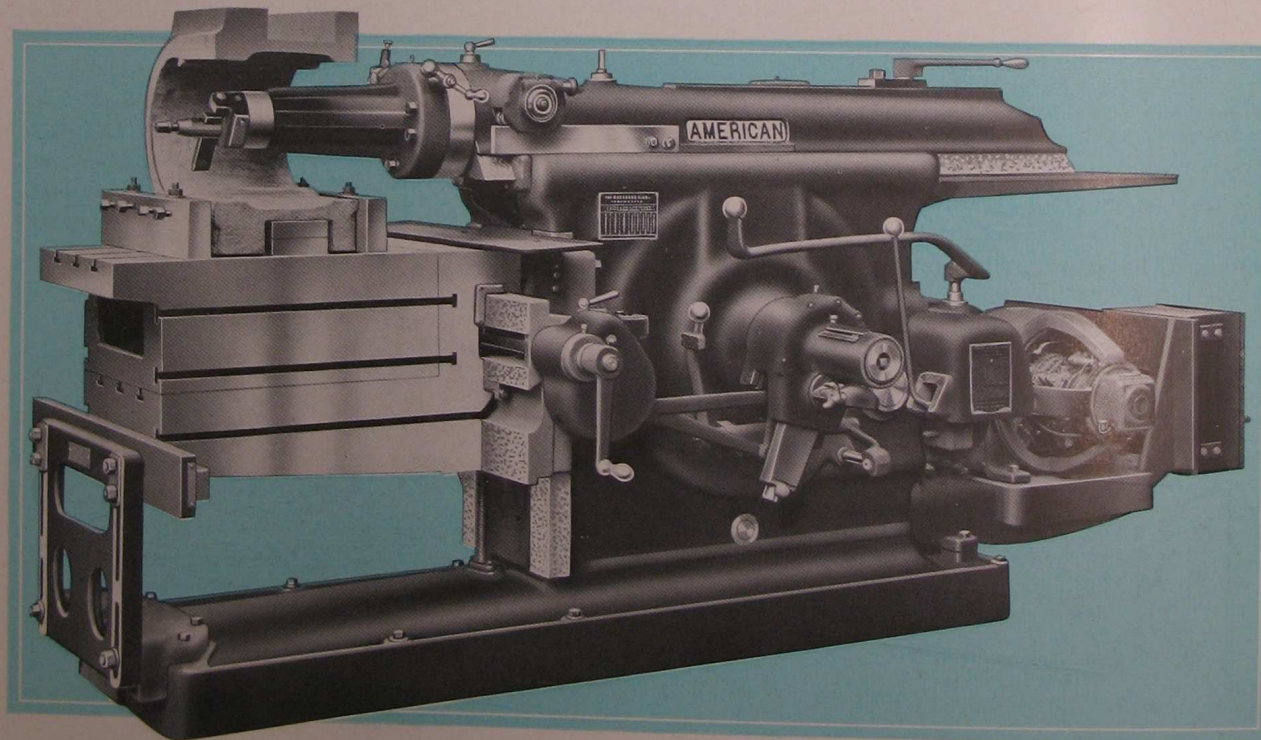
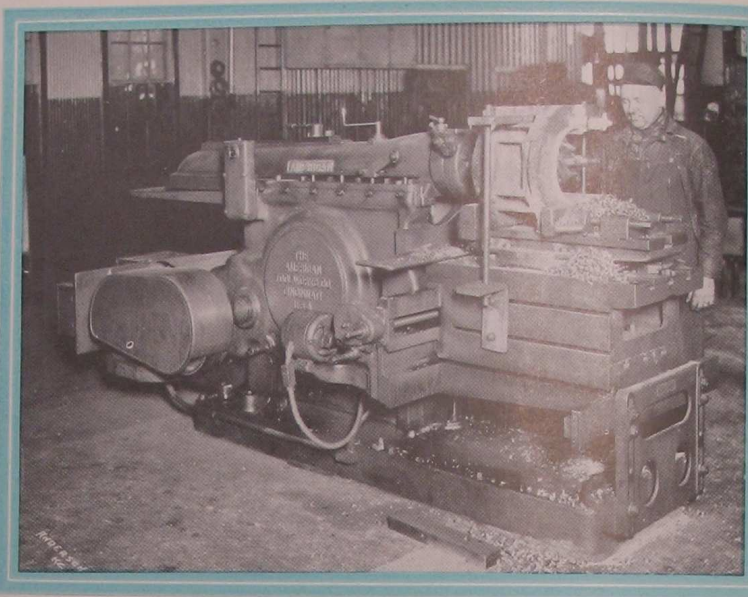
Crown Brass Seat Planing Attachment

This Crown Brass Seat Planing Attachment for planing seats for brasses is designed to accommodate a full range of main driving box sizes. The extended head is a very rigid unit bolted directly to the ram, the revolving member having a full length bearing in the head of the extension. The rotating movement of the head may be secured either by power or by hand, all elements involved in the rotating mechanism being unusually substantial and made of the very finest of materials.

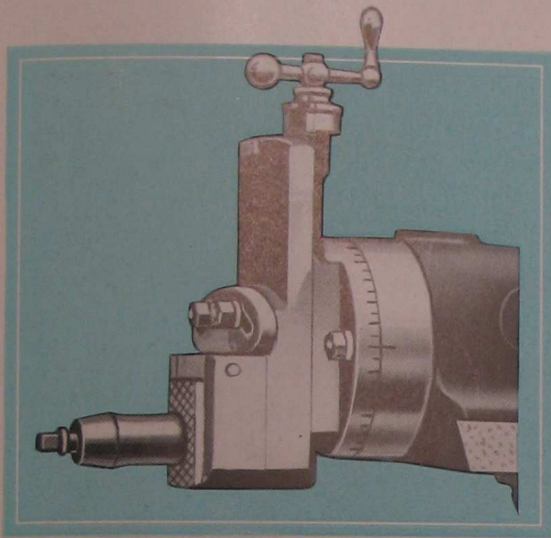
This attachment is quickly interchangeable with the standard shaper head and is always furnished in addition to the standard head.

The two large rectangular clamps with hold down bolts and work clamping screws are regularly furnished with the Crown Brass Seat Attachment and are included in its price.

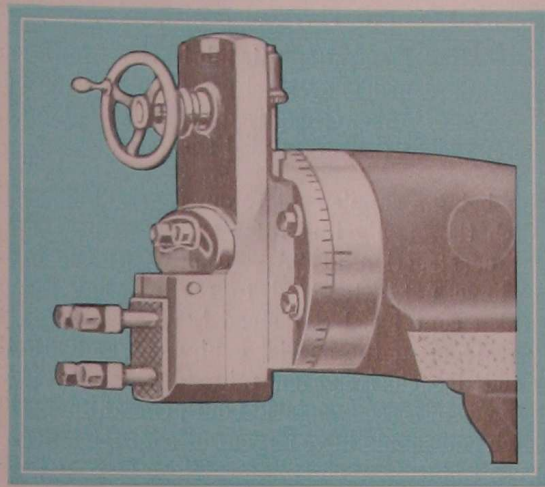
Note—When ordering, specify the maximum length to be planed and send prints of largest and smallest boxes to be machined.



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Head with Single Screw Tool Post



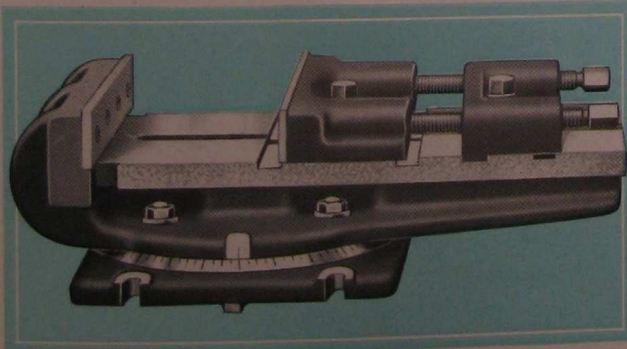
Head with 4-Stud Tool Holder and Hand Wheel
for vertical movement

Heads

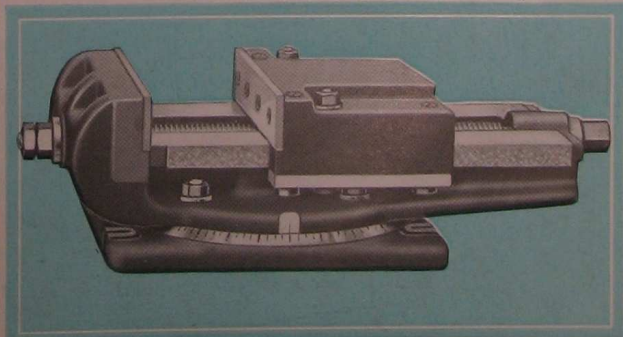
On the 32" Extra Heavy and 36" Heavy Pattern sizes, we offer either the single screw tool post or the 4-stud tool holder with hand wheel for vertical movement of head. These types are optional, consequently customer should designate which type he prefers.

Vises

Either a double screw vise or a single screw vise is furnished as regular equipment. Our preference is for the double screw vise, which is regularly supplied, unless customer expresses a preference for the single screw type. Our preference is based on the ability of the double screw vise to hold taper work without the use of additional jaws; also it provides two heavy screws for holding adjustable jaws against the work. However, some prefer the single screw vise because it is a little simpler and quicker to operate, consequently we furnish either type, as desired. The jaws of both vises are deep and wide, are faced with annealed tool steel, and provide an unusually large opening. The vise body of both types is clamped by four heavy bolts to the swivel base, which is graduated in degrees. The screw of the single screw type has a bearing at both ends, and is always in tension when holding work.



Double Screw Vise



Single Screw Vise



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All "American" Auto-Oiled Shapers are completely Timkenized, have automatic lubrication, multiple splined shafts, hardened alloy steel gears, multiple disc starting clutch and brake, centralized control, plenty of power, lots of weight and unexcelled accuracy.

This being a supplement to our general Shaper Catalog which thoroughly illustrates and describes the design and construction of "American" Auto-Oiled Shapers, we have not attempted to repeat what the general catalog contains, but instead have endeavored to concentrate upon the special equipment and attachments intended exclusively for railroad shop service. This supplement is really a part of our general Shaper Catalog which you should have in your files for reference. If you haven't one of our complete catalogs in your possession, advise us and we shall immediately send you your copy.

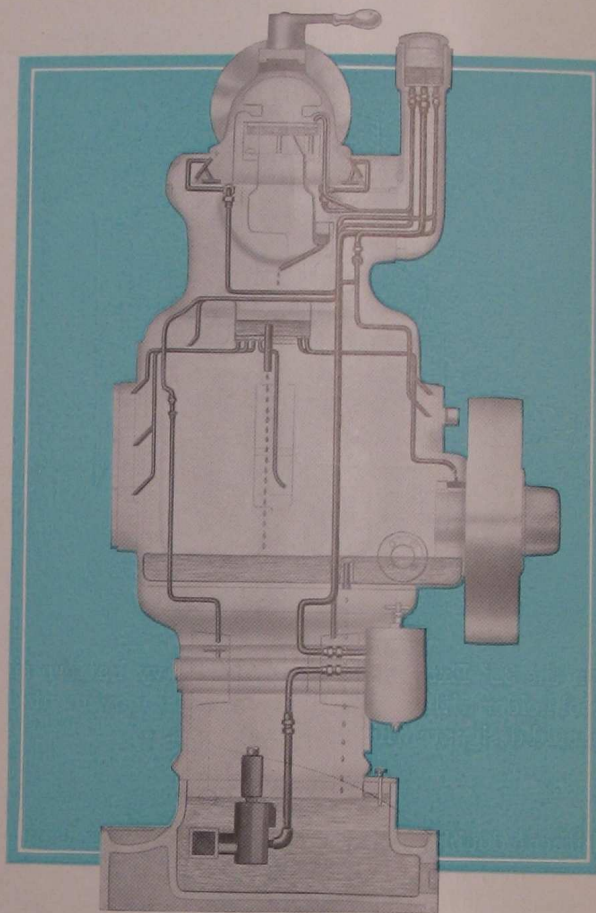
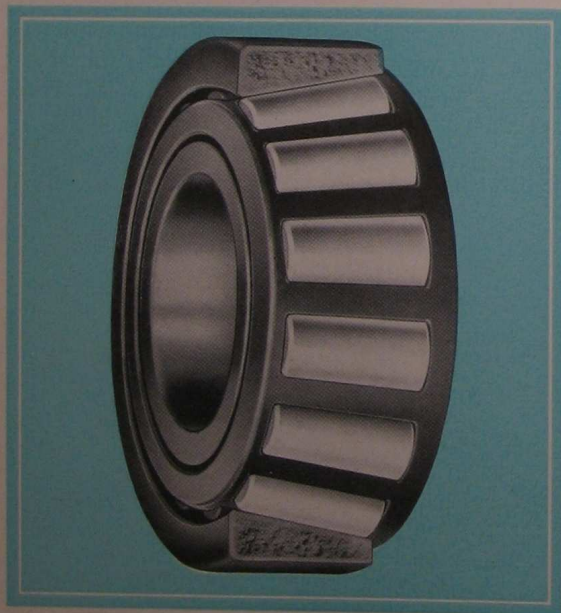


Diagram of Automatic Oiling System



Timken Tapered Roller Bearing

All Timken Roller Bearings used in "American" Auto-Oiled Shapers are the precision, machine tool type, made especially for use in high quality machine tools.

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DIMENSIONS

	16" Heavy Pattern	20" Standard Pattern	20" Heavy Pattern	24" Standard Pattern	24" Heavy Pattern	28" Standard Pattern	32" Standard Pattern	32" Extra Heavy	36" Heavy Pattern
RAM									
Length of stroke.....	16 $\frac{3}{4}$	20 $\frac{3}{4}$	20 $\frac{3}{4}$	24 $\frac{3}{4}$	24 $\frac{3}{4}$	28 $\frac{3}{4}$	32 $\frac{1}{2}$	32 $\frac{3}{4}$	36 $\frac{3}{4}$
Bearing in column.....	32x10 $\frac{3}{8}$	32x10 $\frac{3}{8}$	36x11 $\frac{1}{4}$	36x11 $\frac{1}{4}$	41 $\frac{1}{2}$ x12	41 $\frac{1}{2}$ x12	41 $\frac{1}{2}$ x12	47x13	47x13
Keyway capacity.....	3	3	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$
Adjustment.....	15	19	19	23	23	27	31	31	35
TABLE									
Horizontal travel.....	24	24	24 $\frac{1}{2}$	24 $\frac{1}{2}$	30	30	30	35	35
Vertical travel.....	11 $\frac{7}{8}$	11 $\frac{7}{8}$	12	12	12 $\frac{3}{8}$	12 $\frac{3}{8}$	12 $\frac{3}{8}$	12 $\frac{3}{8}$	12 $\frac{3}{8}$
Maximum distance, table to ram.....	16 $\frac{7}{8}$	16 $\frac{7}{8}$	18 $\frac{1}{4}$	18 $\frac{1}{4}$	17 $\frac{7}{8}$	17 $\frac{7}{8}$	17 $\frac{7}{8}$	17 $\frac{1}{2}$	17 $\frac{1}{2}$
Length of top.....	16	20	20	24	24	28	32	32	36
Width of top.....	14	14	14	14	16	16	16	20	20
Depth.....	15	15	16 $\frac{1}{2}$	16 $\frac{1}{2}$	18	18	18	20	20
HEAD									
Diameter of head.....	9 $\frac{1}{2}$	9 $\frac{1}{2}$	9 $\frac{1}{2}$	9 $\frac{1}{2}$	10	10	10	11	11
Vertical travel.....	7	7	7	7	9 $\frac{1}{4}$	9 $\frac{1}{4}$	9 $\frac{1}{4}$	9 $\frac{1}{4}$	9 $\frac{1}{4}$
Size of tools.....	$\frac{7}{8}$ x1 $\frac{3}{4}$	$\frac{7}{8}$ x1 $\frac{3}{4}$	$\frac{7}{8}$ x1 $\frac{3}{4}$	$\frac{7}{8}$ x1 $\frac{3}{4}$	1x2	1x2	1x2	1x2	1x2
Number of speeds to ram.....	8	8	8	8	8	8	8	8	8
Range of cutting strokes per minute.....	10-138	10-138	9 $\frac{1}{2}$ -132	9 $\frac{1}{2}$ -132	8 $\frac{1}{2}$ -120	8 $\frac{1}{2}$ -120	8 $\frac{1}{2}$ -120	8-104	8-104
Number of cross feeds.....	18	18	18	18	18	18	18	18	18
Range of cross feeds.....	.010-.180	.010-.180	.010-.180	.010-.180	.010-.180	.010-.180	.010-.180	.010-.180	.010-.180
Diameter of pulley.....	16	16	16	16	16	16	16	16	16
Width of belt.....	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	4	4	4	4	4
R. P. M. of pulley.....	500	500	550	550	550	550	550	600	600
Gear ratio, maximum.....	50 ÷ 1	50 ÷ 1	57.8 ÷ 1	57.8 ÷ 1	65 ÷ 1	65 ÷ 1	65 ÷ 1	75 ÷ 1	75 ÷ 1
Gear ratio, minimum.....	3.62 ÷ 1	3.62 ÷ 1	4.16 ÷ 1	4.16 ÷ 1	4.6 ÷ 1	4.6 ÷ 1	4.6 ÷ 1	5.77 ÷ 1	5.77 ÷ 1
R. P. M. of countershaft.....	444	444	489	489	489	489	489	533	533
DOUBLE SCREW VISE									
Size jaws.....	12x2 $\frac{1}{2}$	12x2 $\frac{1}{2}$	12x2 $\frac{1}{2}$	12x2 $\frac{1}{2}$	15x3	15x3	15x3	18x3 $\frac{3}{4}$	18x3 $\frac{3}{4}$
Jaws open.....	12	12	12	12	15	15	15	16 $\frac{3}{4}$	16 $\frac{3}{4}$
SINGLE SCREW VISE									
Size jaws.....	12x2 $\frac{1}{2}$	12x2 $\frac{1}{2}$	12x2 $\frac{1}{2}$	12x2 $\frac{1}{2}$	15x3	15x3	15x3	16x3 $\frac{3}{4}$	16x3 $\frac{3}{4}$
Jaws open.....	13	13	13	13	16	16	16	16	16
Countershaft tight and loose pulley.....	14x5 $\frac{1}{4}$	14x5 $\frac{1}{4}$	14x5 $\frac{1}{4}$	14x5 $\frac{1}{4}$	14x5 $\frac{1}{4}$	14x5 $\frac{1}{4}$	14x5 $\frac{1}{4}$	14x5 $\frac{1}{4}$	14x5 $\frac{1}{4}$
Net weight, belt drive.....	4000	4100	4900	5000	6400	6500	6800	8100	8300
Net weight, motor drive, without motor.....	4200	4300	5200	5300	6700	6800	7100	8400	8600
Crated weight, belt drive.....	4200	4300	5000	5100	6600	6700	7200	8400	8900
Crated weight, motor drive, without motor.....	4400	4500	5200	5400	6900	7000	7600	9000	9400
Motor horse-power for heavy service.....	5	5	7 $\frac{1}{2}$	7 $\frac{1}{2}$	10	10	10	15	15
Motor Speed—R. P. M.....	1800	1800	1800	1800	1800	1800	1800	1800	1800
Floor space—belt drive.....	53 $\frac{1}{2}$ x79	53 $\frac{1}{2}$ x79	53 $\frac{3}{8}$ x87	53 $\frac{3}{8}$ x87	59x99 $\frac{3}{4}$	59x99 $\frac{3}{4}$	59x108	62x123 $\frac{1}{2}$	62x123 $\frac{1}{2}$

