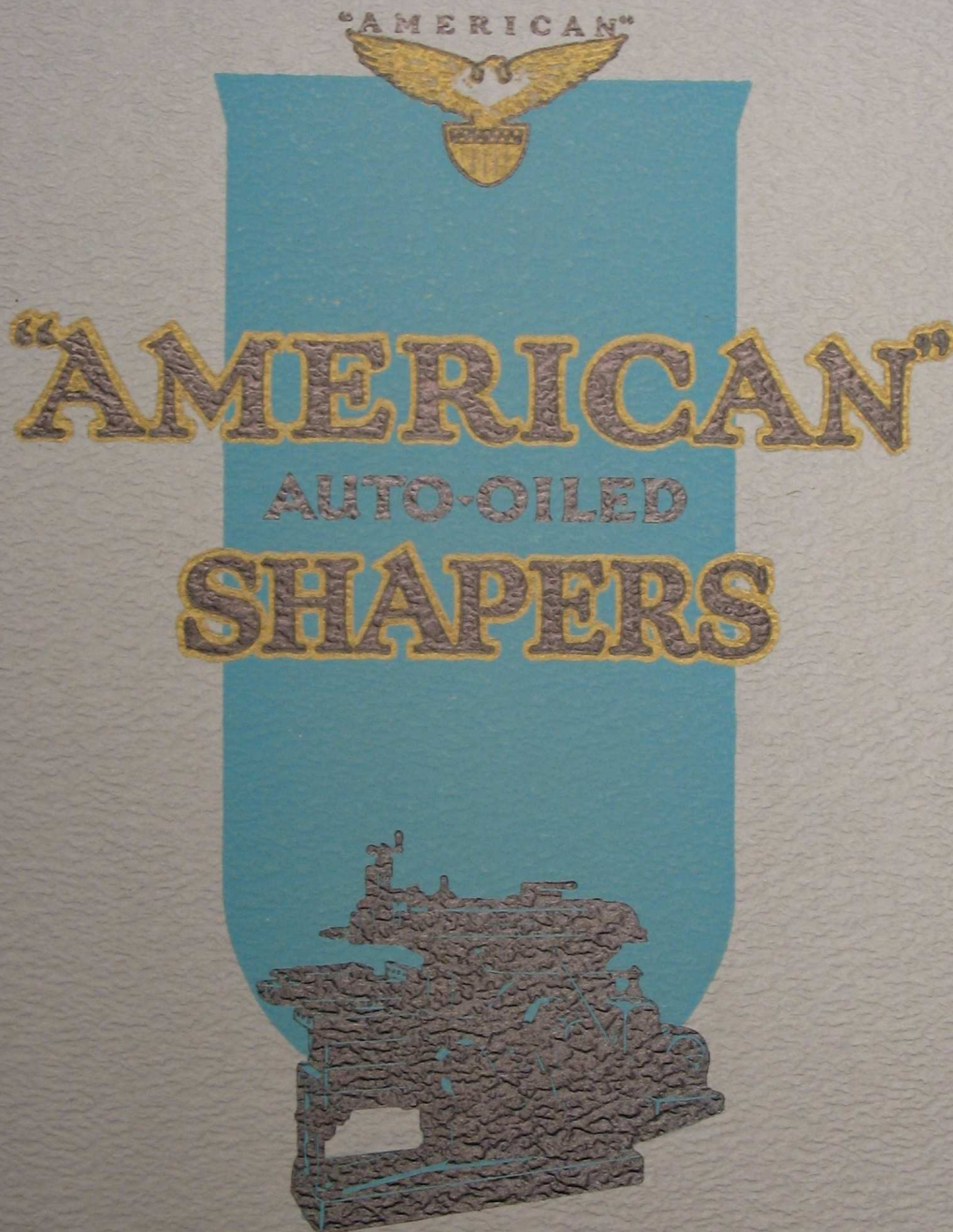


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Catalog 200



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

LATHES RADIALS SHAPERS



"AMERICAN"



"AMERICAN"
AUTO-OILED
SHAPERS

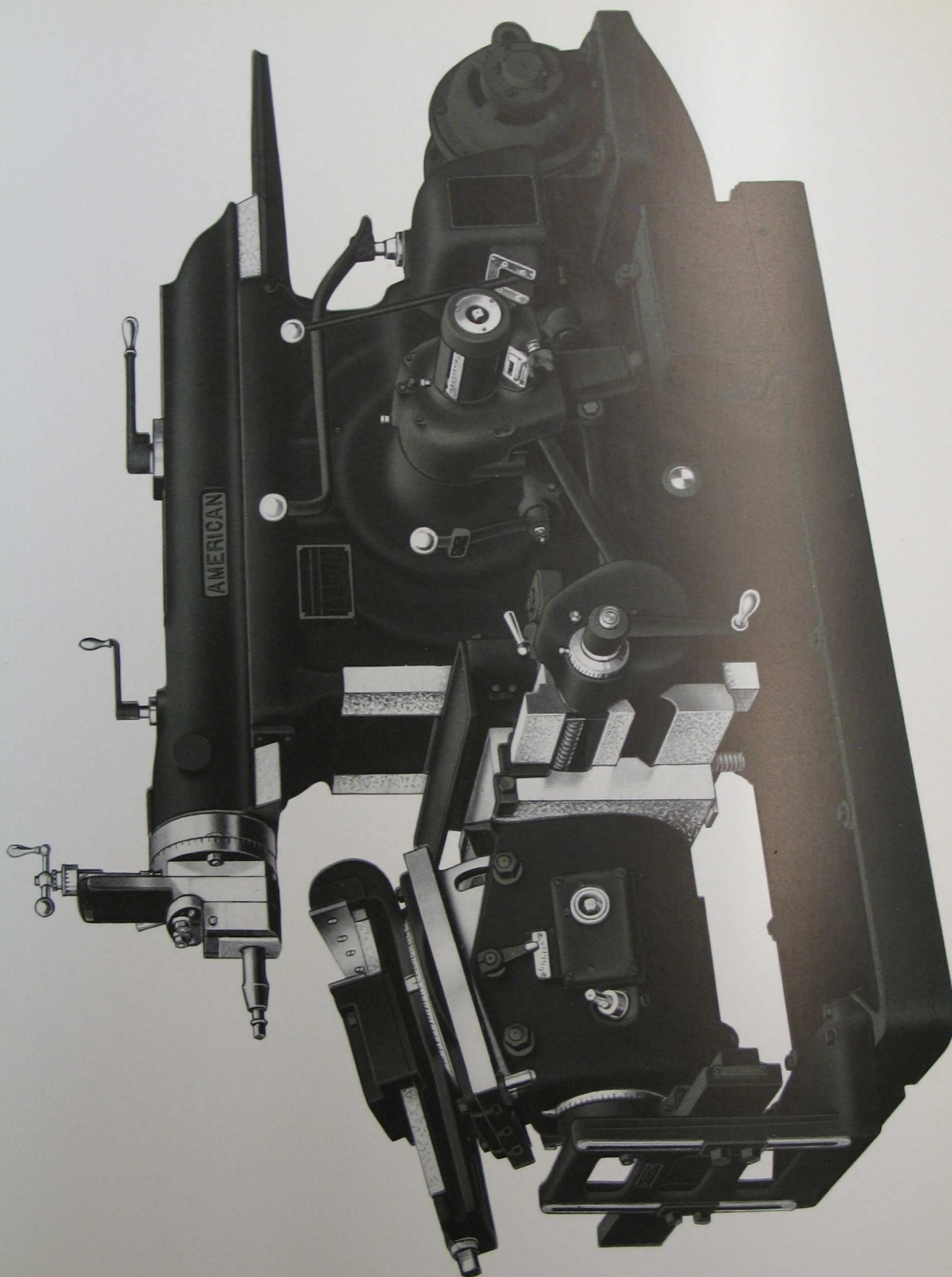
PLAIN *and*
UNIVERSAL
TYPES



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


LATHES - RADIALS - SHAPERS

Catalog 200
2nd Edition



"AMERICAN" UNIVERSAL SHAPER WITH TABLE SUPPORT

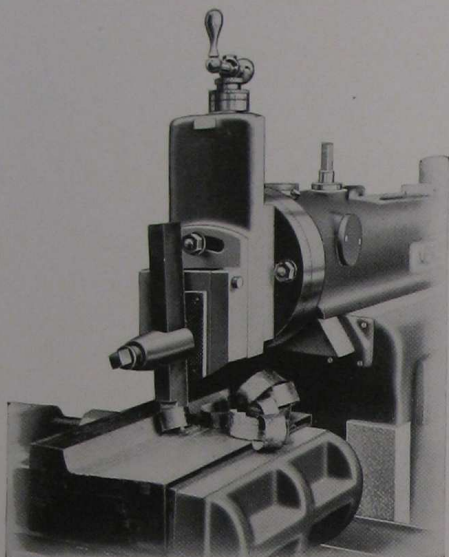
The New **"AMERICAN"** **AUTO-OILED** **SHAPER**

HE New "American" Auto-Oiled Shaper will produce approximately 60 per cent more work in a given time than a ten-year-old shaper. This amazing fact was determined from experiments conducted in our own plant, and proves beyond question that the present-day shaper has far outstripped the machine of only a decade ago.

Not alone in power and rigidity does this tremendous increase in efficiency manifest itself, but also in operative convenience, quality of work produced, and in durability.

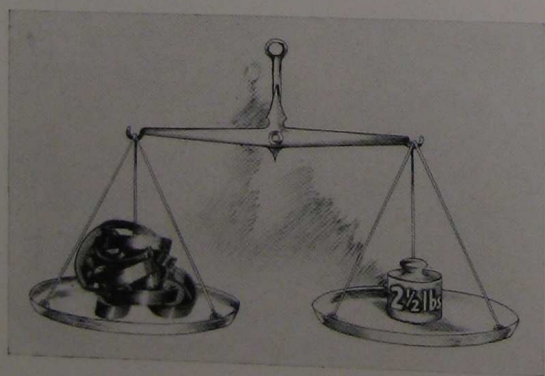
The value of a shaper as a unit of shop equipment is measured primarily by the quantity and quality of work it will produce, consequently if a modern "American" Auto-Oiled Shaper will produce 60 per cent more work—and better work at that—than a shaper now in use, it seemingly is high time to replace that old shaper with a new "American". An investment in modern, high-productive shaper equipment will net a far greater return than the best stocks or bonds.

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(FIG. No. 1) ILLUSTRATION OF POWER—A 1" DEPTH OF CUT WITH .050" FEED IN DIE-BLOCK STEEL

In measuring the productive capacity of any shaper its ability to remove metal is the most essential factor. The amount of metal it will remove in a given time is a fair measure of its efficiency. The new "American" cuts metal at an amazing rate. For example, the 32-inch machine will cut .60 Carbon die-block steel at the rate of 8.2 cubic inches or $2\frac{1}{2}$ pounds per minute. Without the slightest difficulty it will use the full capacity of a 15 horse-power motor, and will continue to operate at that rate for long periods without any indication of distress.

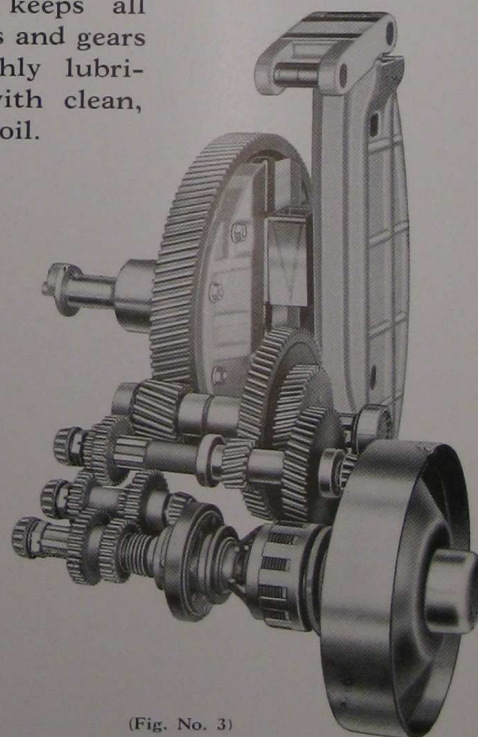


(Fig. No. 2)

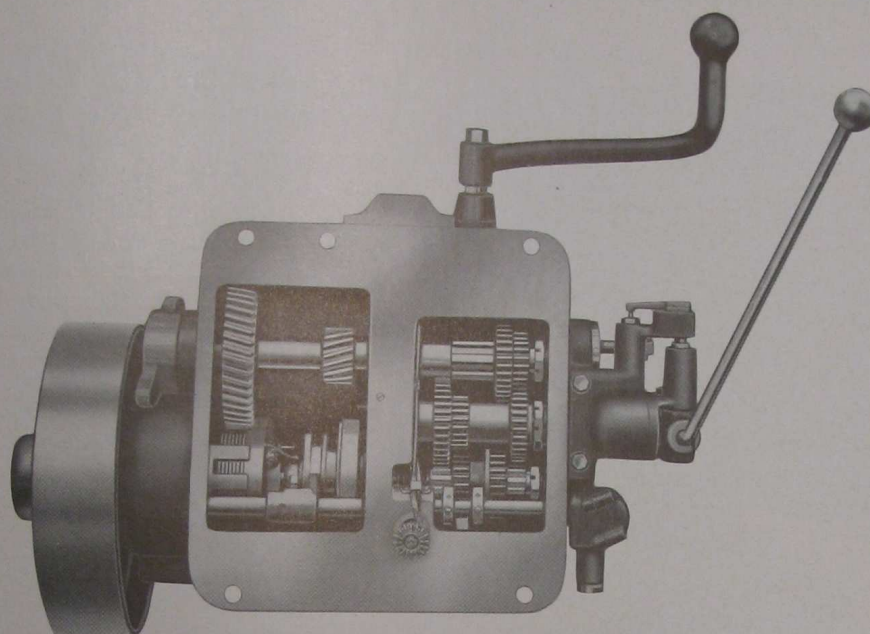


The power delivered either by the driving motor or by belt is transmitted to the ram through large proportioned, very substantial members. The power is delivered by the prime mover to the driving pulley of the gear box. Thru a powerful hard-plate multiple disc clutch it is transmitted to the gear box, which through the medium of seven hardened-alloy steel gears mounted on multiple-splined shafts produces the four gear ratios, which in conjunction with the two back-gear ratios provide the eight ram speeds. The back gears and bull wheel and pinion are of the single helix type, providing a smooth, quiet drive, free from chatter and back lash—a condition absolutely essential to shaper efficiency. Both the back gears and bull wheel pinion are cut from chrome-manganese steel forgings, and are heat-treated, oil-tempered, and hardened. The bull wheel itself is made from a semi-steel casting.

All shafts throughout the drive are made of heat-treated alloy steel, are multiple splined, and mounted in Timken Roller Bearings. An automatic oiling system keeps all bearings and gears thoroughly lubricated with clean, filtered oil.



(Fig. No. 3)



(Fig. No. 1) SPEED BOX WITH STARTING CLUTCH AND BRAKE

Multiple Disc Clutch and Brake

The driving clutch, which is located on the initial or pulley shaft in the gear box, is of the hard-plate, multiple disc type, very powerful and durable, with means for quick and easy adjustment from the outside. A powerful brake, with toggle lock for preventing ram movement when the clutch is disengaged, operates in unison with the multiple disc clutch. This clutch and brake unit is operated by means of a long lever extending to the front of the machine, where operator can reach it without leaving his working position.

Gear Box

The gear box, as shown by the illustration, is a complete unit, bolted and dowelled to the shaper column. It provides four changes of speed, which combined with the back-gear drive produces a total of eight cutting speeds for the ram. The speed changes in the box are accomplished while the machine is running, through seven alloy-steel gears, heat-treated and hardened, the teeth of which are machine-rounded to facilitate meshing, and one long lever extending to the front, where it can be operated from the natural operating position. There are no loose running members in this gear box.

The gears are substantially mounted on multiple-splined, heat-treated shafts, which in turn are mounted in taper roller bearings. The gear box is oil-tight, all gears running in oil, insuring a long-lived, quiet drive.

Balanced Bull Wheel

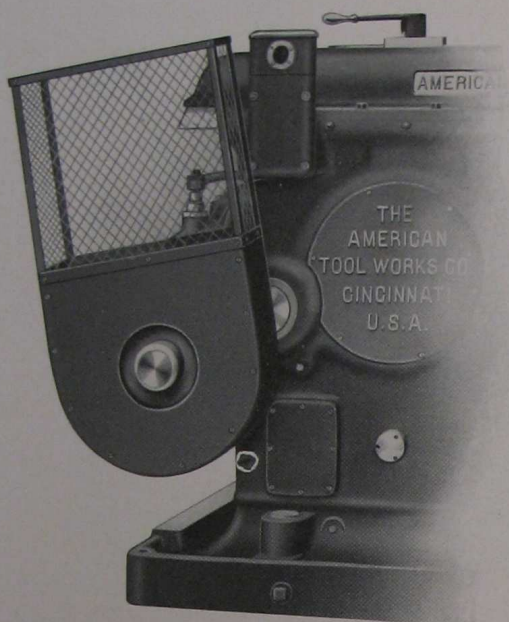
The bull wheel is carefully balanced so as to produce a smooth, even drive to the rocker arm. It is the only gear of the whole driving train that is not hardened. This gear, owing to its size, is made from a semi-steel casting with a tensile strength of about



(Fig. No. 2) TU-PIECE BALANCED BULL WHEEL



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(Fig. No. 1) WHEN ARRANGED FOR BELT DRIVE A SUITABLE BELT GUARD IS PROVIDED

40,000 lbs. The pinion that drives it is hardened, and both gears are of the helical type, resulting in a smooth, quiet, steady drive, free from chatter and back lash.

The bull wheel is built in two pieces, the gear portion being securely fitted and bolted to the large hub or disc. This is done to facilitate repairs, if or when necessary. The bull wheel is a very large, expensive unit, and if made in one piece, a whole new unit would be required if the gear portion should wear or the teeth break. With our two-piece construction only the gear portion would have to be renewed in case of wear or accident. Moreover, in order to minimize the chance for accident, a gear guard is provided for the bull wheel, which covers the teeth, preventing chips and foreign matter getting into the gear teeth.

An extra large hub is provided on the bull wheel unit to give it a substantial mounting in the column bearing. This hub runs in a renewable bushing, and is flooded with filtered oil by the automatic lubricating system.

The mounting of the bull wheel unit is unusually high up and close to the column wall, bringing the power application as close

as possible to the ram and giving the greatest possible resistance to the bull wheel unit.

Rocker Arm

Perhaps the most important member in the driving mechanism is the rocker arm, inasmuch as it is this member that actuates the ram. On this new shaper the rocker arm is not only of very massive construction, with heavy ribs of box form, properly located to resist the greatest stresses, but, in addition, is made of a 40% steel mixture, close-grained, and of a high-tensile strength. It is also important to note that this rocker arm is mounted on a fulcrum or pivot shaft at the bottom, which is journaled in both of the column walls. This mounting supports the weight of the rocker arm and its parts, relieving the ram of this additional burden.

Double Link

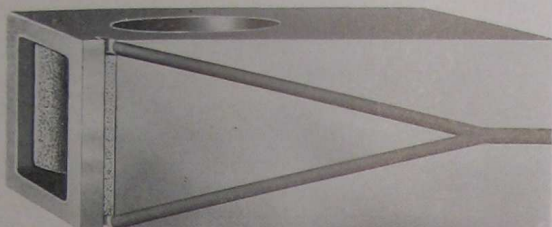
The connection between the rocker arm and the ram is through a double link, which is designed to pull the ram down on its bearings during the entire cutting stroke, thus tending to neutralize the upward thrust of the tool. This construction is in our opinion far superior to that used on other designs in which the rocker arm is attached directly to the ram, for with the latter construction the rocker arm tends to lift the ram during the first half of the cutting stroke, and, moreover, requires the ram to carry the dead weight of the rocker arm and its parts, thus causing more rapid wear on ram bearings, besides consuming more power.



(Fig. No. 2) ROCKER ARM AND DOUBLE LINK



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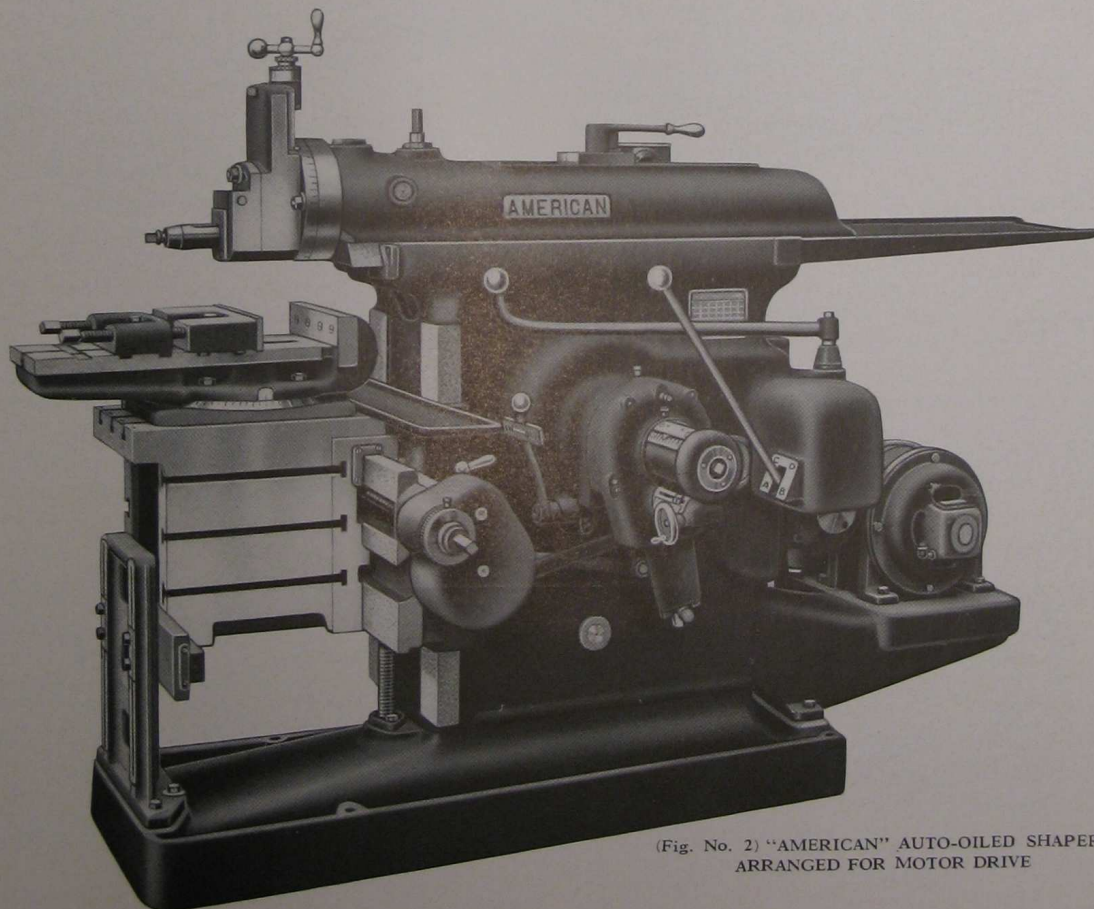
(Fig. No. 1) LARGE TOOL STEEL SLIDING BLOCK

Sliding Block

The sliding block is of major importance in shaper design, for it is the unit that drives the rocker arm and, in turn, the shaper ram. Owing to the sliding contact under great pressure between the block and the rocker arm "ways", this block has a tendency to wear excessively unless special care is given to its design. Many experiments have been made in an effort to develop some practical method of compensating for the wear between the block and the rocker arm, but it is obviously

impossible to compensate for wear between sliding members when the wear on either one or both of the members is unequal. The location of the wear on the rocker arm ways and the sliding block of a shaper depends upon the length of the ram stroke. When a shaper is used mostly on short stroke work the wear will be confined to a small area, or vice versa, consequently if adjustment were made for wear occasioned by a short stroke, it is perfectly plain that the same adjustment would be either too tight or too loose for the wear incident to a long stroke. Furthermore, even if means could be provided through gibs or otherwise to adequately take up the wear between the rocker arm and the sliding block, what operator would go to the trouble of getting inside of his machine to make such an adjustment when needed?

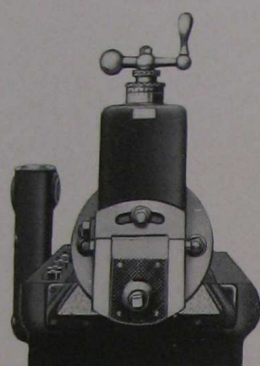
On the "American" shaper we have discarded all attempt to compensate for wear



(Fig. No. 2) "AMERICAN" AUTO-OILED SHAPER
ARRANGED FOR MOTOR DRIVE



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(Fig. No. 1) "V" TYPE RAM

between these members, and instead, have bent our energies toward minimizing this wear to an inconsequential point.

To accomplish this the size of the sliding block has been increased far beyond that of the average, in order to provide a much greater area of contact between the rocker arm guides and sliding block. Furthermore,

the block is made of a very high grade of hardened-alloy steel, and is ground to fit the scraped ways of the rocker arm, which are condensed by a chilling process in the sand to produce a hard, close-grained surface to contact with the hardened-steel block. These parts are continuously flooded with oil by pump lubricating system, insuring an ever-present oil film to minimize friction between the contacting surfaces. This construction is no experiment on the "American" shaper. It has been used for years with absolute and perfect success.

In connection with the design of the sliding block it might be of interest to mention the fact that the wrist pin that fits into and revolves in the sliding block is made of alloy, heat-treated steel, and is supplied with a renewable hard-bronze sleeve to contact with the sliding block. Flooded lubrication to these members is a feature that should not be overlooked.

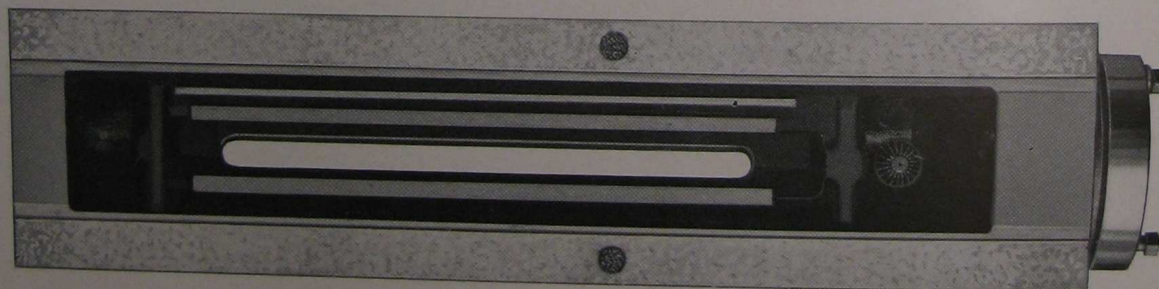
"V" Type Ram

The "V" type ram has been adopted for the new "American" Auto-Oiled Shaper with

wide guides providing an exceptionally large area of bearing contact with the column ways. The pump lubricating system floods the ram and column bearings with filtered oil, insuring a minimum of wear between the respective parts, while whatever wear does take place can be taken up by the combined clamp and gib provided for that purpose. The gib is fitted between the ram and a heavy vertical wall for absorbing thrusts, and is adjusted by a series of adjusting screws, which control the clamp tension, while any lifting tendency or end motion under a cut or when adjusting the tension is prevented by two large studs. The ram itself is made unusually wide and deep, with heavy internal ribbing to insure rigidity.

Column

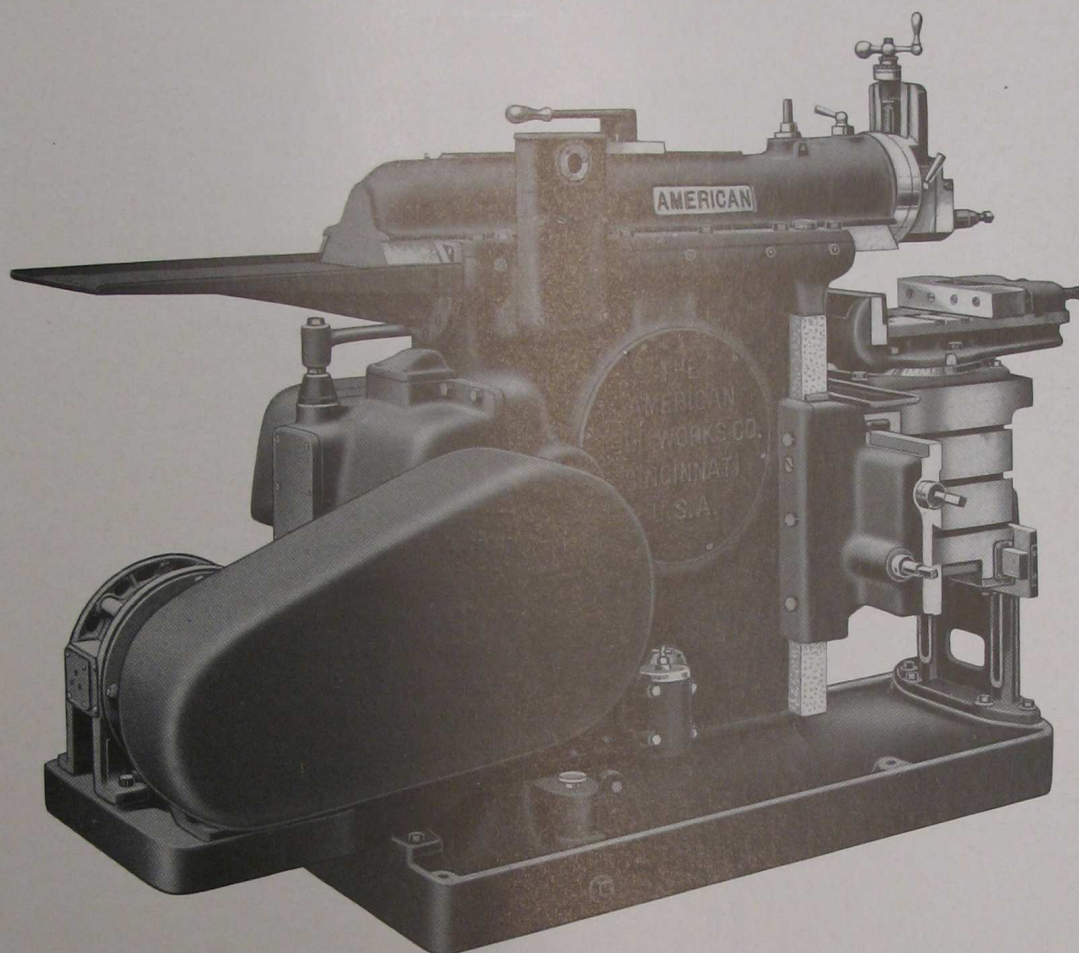
There is nothing more essential to the satisfactory operation of a shaper than a good, heavy, rigid column, properly proportioned to resist the severest stresses. One glance at the "American" Shaper will convince anyone of the massiveness and stability of the column. Not only is the column unusually wide and deep, but heavy circular and radial ribs augmented by wide lateral ribs tie the walls so rigidly together, there is no possibility of deflection under the most severe stresses imposed. The ram ways are also heavily reinforced, while the bearing surfaces are chilled to provide a hard close-grained bearing surface for the ram. The guide ways are fitted with felt inserts connecting with the automatic lubricating system, through which the oil is fed to the bearings, insuring abundant and filtered lubrication. At each end of the guide ways is located a felt wiper, which prevents the oil escaping from the guide ways, and wipes any grit or dirt from the ram bearing.



(Fig. No. 2) UNDER SIDE OF RAM SHOWING WIDE BEARING SURFACES AND HEAVY RIBBING



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"AMERICAN" AUTO-OILED SHAPER, REAR VIEW SHOWING MOTOR APPLICATION AND GUARD FOR DRIVING BELT

Base

The base is almost extreme in its proportions. It is unusually heavy and deep, forming a most excellent foundation for the machine. It is of the extension type, with a pad at the outer end for the table support. It is also designed so that the portion beneath the column forms the reservoir for the lubricating system. This reservoir is, of course, completely covered and dust-proof.

Cross Rail

The cross rail is of box form, very heavy, and strongly ribbed, and, being of exceptional length, gives the table a long horizontal range of travel. Three extra wide bearings for the saddle are provided which insure rigidity at that point. The rail is bolted to the column

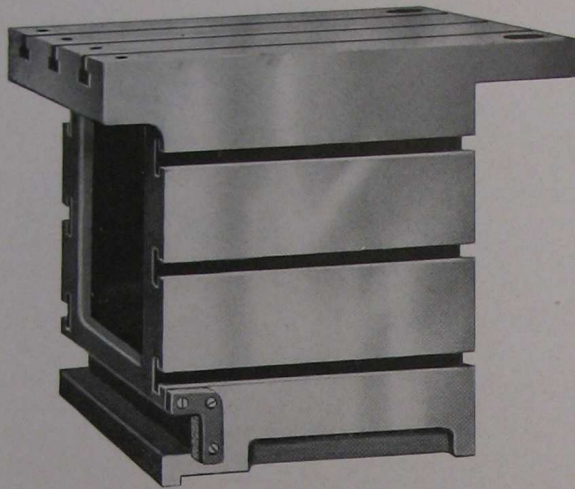
by clamps and bolts of improved design, which prevent its dropping away when the binder bolts are loosened. A stationary elevating screw of large diameter is employed, a ball thrust bearing being provided on the elevating nut for facilitating the elevation of the rail. This screw eliminates the necessity of a hole in the foundation to accommodate its travel.

Saddle

This unit is proportionately heavy and rigid, and is fitted to the narrow guide-way on the rail, with a dovetail fit at the bottom and a square box fit at the top. The face of the saddle is supplied with three horizontal tee slots for holding the table. Felt wipers clean and lubricate the top bearing between the



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(Fig. No. 1) PLAIN BOX TABLE

saddle and the rail, while a full length taper gib with end screw adjustment provides means for maintaining an accurate fit between these two members.

Table

The table is made in a complete box section, and therefore, is not liable to spring or deflect when heavy work is bolted on its side. The slots are all planed from the solid, the side slots being set in the horizontal plane, thus obviating the possibility of the work bolted to the side dropping down on the base when the clamping bolts are loosened.

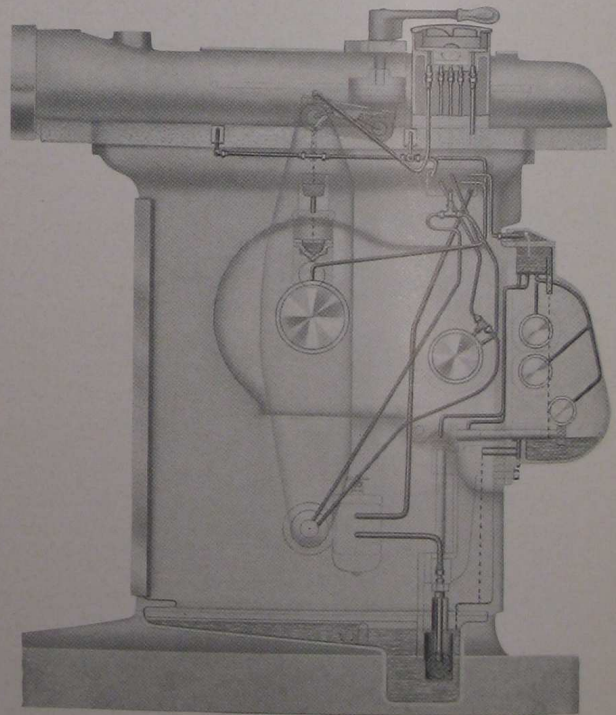
The top of the table extends over and bears upon the top of the saddle, thus increasing its rigidity and preventing dirt working down between the table and saddle. This construction also removes the strain from the clamping bolts, and at the same time adds considerable working surface to the table. In order to further safeguard the bearings of the rail and column, a dirt guard of pan construction is fastened to the rail, which catches chips and dirt that might otherwise work into the bearings. Felt wipers are provided on both ends of saddle, which remove the dirt and chips from the top of the rail and at the same time lubricate the surface. This table is firmly fitted to the saddle by means of 5 bolts, 3 at the top and 2 at the bottom.

The rigidity of this connection is further materially increased by 2 dowel pins extending through the top of the table into the saddle. These pins permanently locate the table in its proper position on the saddle, also greatly increase its rigidity by preventing vibration under a cut.

Automatic Lubrication

The lubrication of the new shaper is perfect. Every bearing, every gear, the bull wheel and rocker arm, and all their parts, the ram guide ways and the multiple disc driving clutch are constantly flooded with filtered oil—not merely lubricated, but flooded in such volume as to carry away bearing heat and foreign matter that might be deposited.

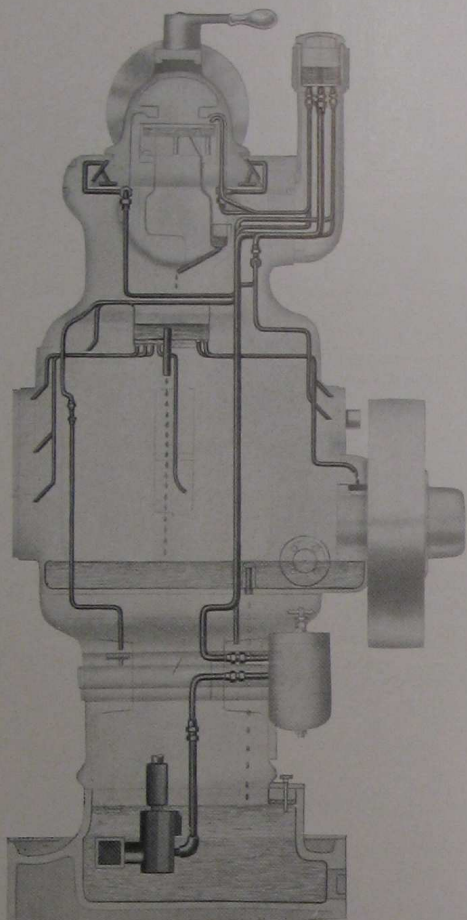
The oiling system consists of a large oil reservoir in the base, under the column, with a settling compartment where the heavy sediment is deposited. From a second compartment into which the settled oil flows, a plunger pump forces the oil thru an all-metal oil purifier into a distributing tank at the top



(Fig. No. 2) OILING DIAGRAM



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(Fig. No. 1) OILING DIAGRAM

of the column. From this tank the oil is distributed thru pipes to all the bearings, gears, and moving parts in the machine.

A clearer understanding of this highly-efficient system can be obtained from the accompanying diagrams.

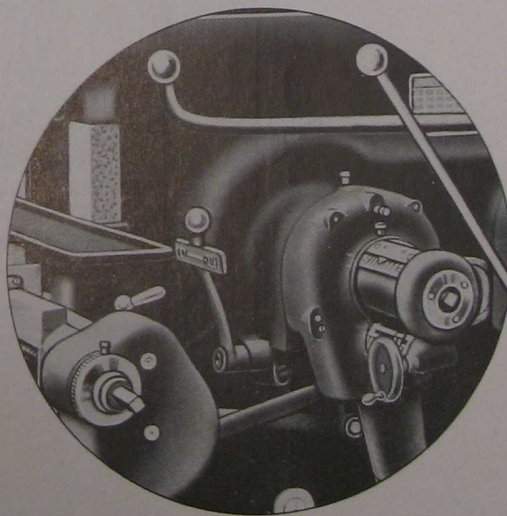
Centralized Control

If there is any one feature that has been particularly emphasized in the new "American", it is centralized control. Convenience of operation is perhaps just as essential to the producing ability of a shaper as the factors of power and rigidity. If a machine is unhandy, if the controls are difficult and levers hard to reach, the operator not only cannot, but will not work with enthusiasm and efficiency. A machine that

is sluggish and difficult of operation has a retarding effect upon the operator both mentally and physically, resulting in decreased output and lack of interest, both in his machine and in his work.

One thing is absolutely certain—no one can ever criticize the new "American" Shaper for lack of operating convenience. There is no shaper built today that can equal the "American" in this respect. From his natural working position the operator has but to lay his hand upon the primary control lever, which starts and stops the machine. From the same position he can easily reach the speed change lever which controls the speeds in the gear box—4 changes of speed thru one lever. The back gear lever, which engages and disengages the back gears is brought to the front, where it can also be conveniently reached from the working position. Last, but not least, the feed control lever located at the operating end of the cross rail is at hand for instantly engaging, disengaging, or reversing the feed. The operator does not have to move from his tracks to start or stop the machine, to change speeds, to engage or disengage back gears, or to control the feed.

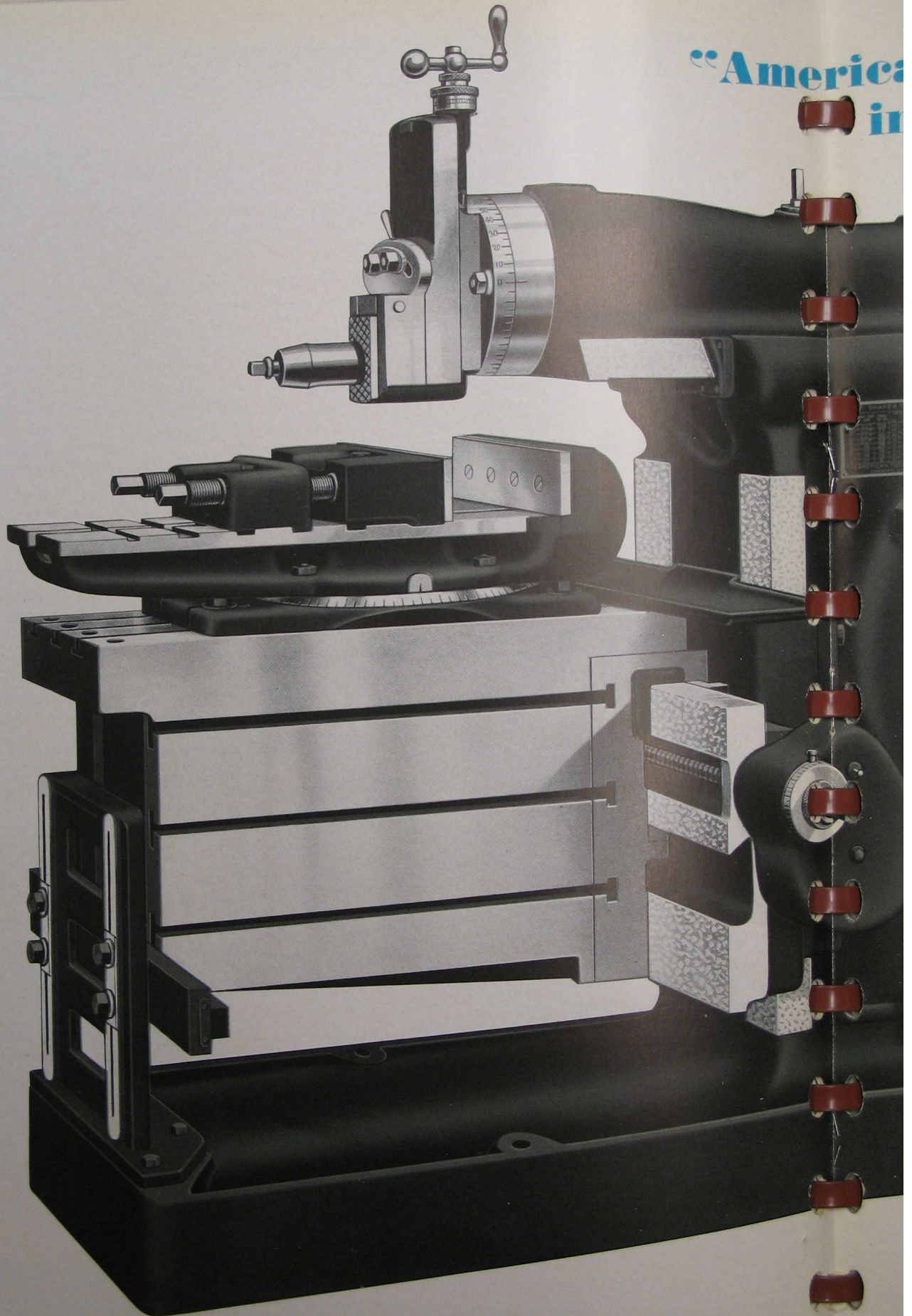
Such convenience is of real, practical value, and can be found in such a highly-developed degree in no shaper but the "American".



(Fig. No. 2) CENTRALIZED CONTROL—ALL CONTROL LEVERS BROUGHT TO OPERATING POSITION



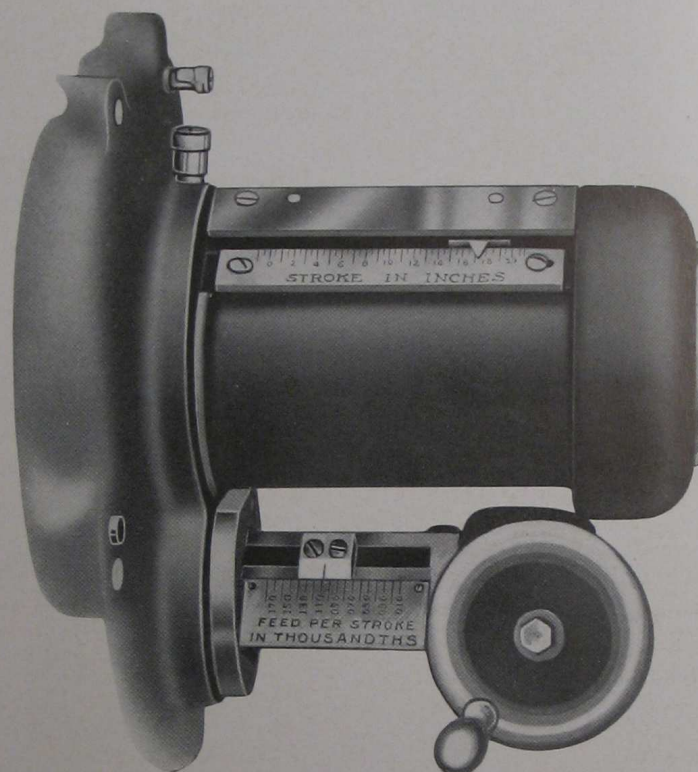
"America
in



**“American” Auto-Oiled Shapers are built
in sizes 16" to 36" inclusive**



THE AMERICAN TOOL WORKS COMPANY



STROKE LENGTH AND FEED ADJUSTMENT SHOWING GRADUATED SCALES

Stroke Range

Owing to the importance of the stroke range to efficient shaper operation, guess work was entirely dispensed with in determining the range for the new "American". Instead, a careful study was made of the correct cutting speeds for metals of various kinds and lengths, resulting in a range of strokes per minute calculated to give the best results on all classes of work. It would, of course, have been an

easy matter to have supplied this shaper with a wider stroke range, but since both slower speeds and faster speeds than those furnished are impracticable and would only serve to widen the gaps between the speeds, it was decided to hold the range within practical limits, with close speed increments, and in that way provide only speeds that could be used effectively.



Novel Method of Changing Stroke Length

A feature of unusual convenience is the new method of changing the stroke length. Instead of the three operations of unclamping, setting the stroke and then reclamping formerly required to change the stroke, only one operation is necessary on the new "American". An automatic clutch lock is released by the application of the stroke crank to the end of the stroke adjusting shaft. The adjustment is made and the mechanism again automatically locked by the removal of the stroke crank. This mechanism is so arranged that the stroke adjusting crank will not stay on the shaft unless held there; consequently, the locking device cannot be left open through carelessness.

Another feature that will appeal to every shaper operator is the use of a straight scale along which a pointer travels indicating the stroke length as the adjustment is being made. This is so much simpler and so much easier to read than a graduated dial or a scale on the column and a pointer traveling back and forth with the shaper ram, that it simply can't help from creating a favorable impression on the operator.

Cross Feed

The cross feed is absolutely new and possesses advantages found only on this particular design. It is automatic, simple and fool-proof in operation, and provides nine nicely graduated feeds through a convenient hand wheel located on the bull wheel unit which moves a pointer along a graduated scale—no difficult reading dials being used. The scale is so located that it is in plain view of the operator at all times and provides a most convenient means for selecting the feed desired. The feed is engaged, disengaged, or reversed through a lever on the cross-rail unit. The feed itself takes place during the entire return stroke of the ram, without shock or impulse, insuring freedom from breakage or

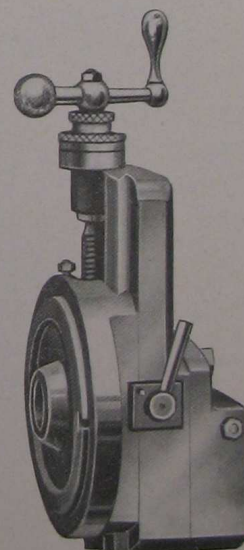
damage to the actuating mechanism. All parts in the feed mechanism are compact and present a neat and symmetrical appearance, while all gears in this mechanism are securely covered.

An automatic safety mechanism is provided, which protects the feed works against damage should the tool accidentally be fed into the cut, or the apron fed into either end of the cross rail. This automatic safety device is positive in its action and is not subject to atmospheric conditions, temperature or the action of oil. Furthermore, it requires no adjustment.

Head

The head is very massively constructed, and proportioned to effectively resist the tool thrust from the heaviest cuts the motor or belt will pull. It is operative at any angle and is supplied with a very substantial locking mechanism. The tool slide is made in the solid type, with the male dovetail for the connection between the slide and swivel cast integral with the tool slide, instead of with the swivel, thus presenting a much more rigid construction, which is considerably less liable to spring or break under heavy thrust than the open-head type.

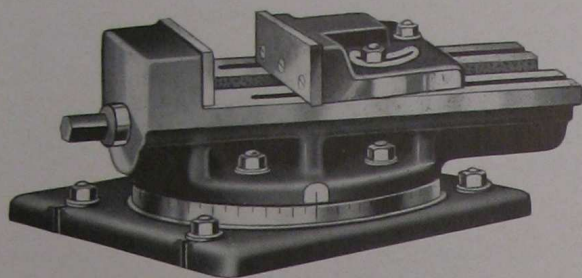
The tool slide is fitted with a full length taper gib with single screw adjustment for taking up the wear, and has an unusually large diameter feed screw fitted with a micrometer collar graduated in .001 inches. The tool post is of ample



HEAD



THE AMERICAN TOOL WORKS COMPANY



(Fig. No. 1) UNIVERSAL VISE

proportions to accommodate tool holders with inserted bits, and is made of high-quality steel, carbonized and hardened.

The compact design and unusual structural strength of this head has attracted considerable attention and has been most favorably commented upon by several of our most prominent shaper users.

Universal Vise

The universal vise, which is interchangeable with the plain vise, is a very desirable item for some classes of tool room work, especially when necessary to machine irregularly-shaped pieces.

This vise has a swiveling jaw, which swivels around a central stud and has two bolts for clamping it in position. A dowel pin is provided for locating the swiveling jaw parallel to the stationary jaw for holding regularly-shaped pieces.

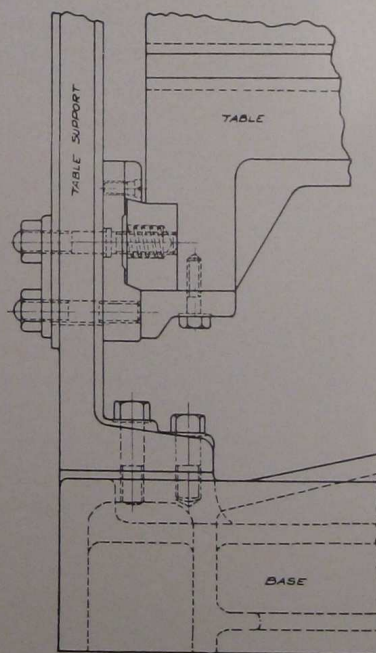
Automatic Compensating Table Support

The "American" automatic compensating table support always supports the table directly in line with the tool thrust regardless of the position of the table. It also functions independently of the base alignment, consequently does not impart any misalignment of the base to the table. While these features are undeniably essential to ideal shaper operation, yet by far the greatest value of the "American" compensating table support is the automatic compensation for table sag that it provides. Regardless of how much natural sag there is in the table itself, or how much is produced by the weight of the work placed

upon it, the mere tightening of the table support automatically brings the table back into its original alignment.

The accompanying illustration clearly shows how this unit functions. Just before the final finishing cut is taken over the table the table support is adjusted by first tightening the two lower nuts and then the two upper ones. When the upper nuts are tightened the taper wedge bar is pulled into the mating guide bar, which naturally lifts the table an amount equal to the taper on the bar. This is what is meant by the term "compensating for the table sag"—it takes the sag out of the table.

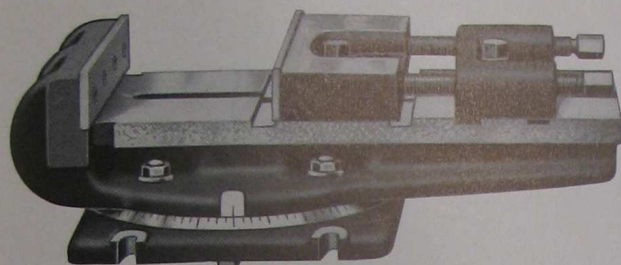
With the table in this position, with all the sag removed, the finish cut is taken. It naturally follows, then, that thereafter the drawing-in of the wedge bar by tightening the two upper nuts will automatically bring the table back into its original finished position. The operator can't go wrong—no matter how much effort he uses in pulling up the adjusting nuts, the table rises to its original finished position, and no more. It's automatic—it's positive—it's simple, and, above all, it insures accurate work.



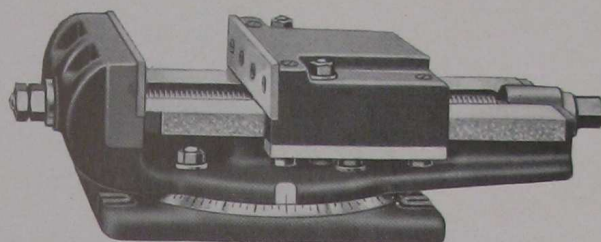
(Fig. No. 2) AUTOMATIC COMPENSATING TABLE SUPPORT



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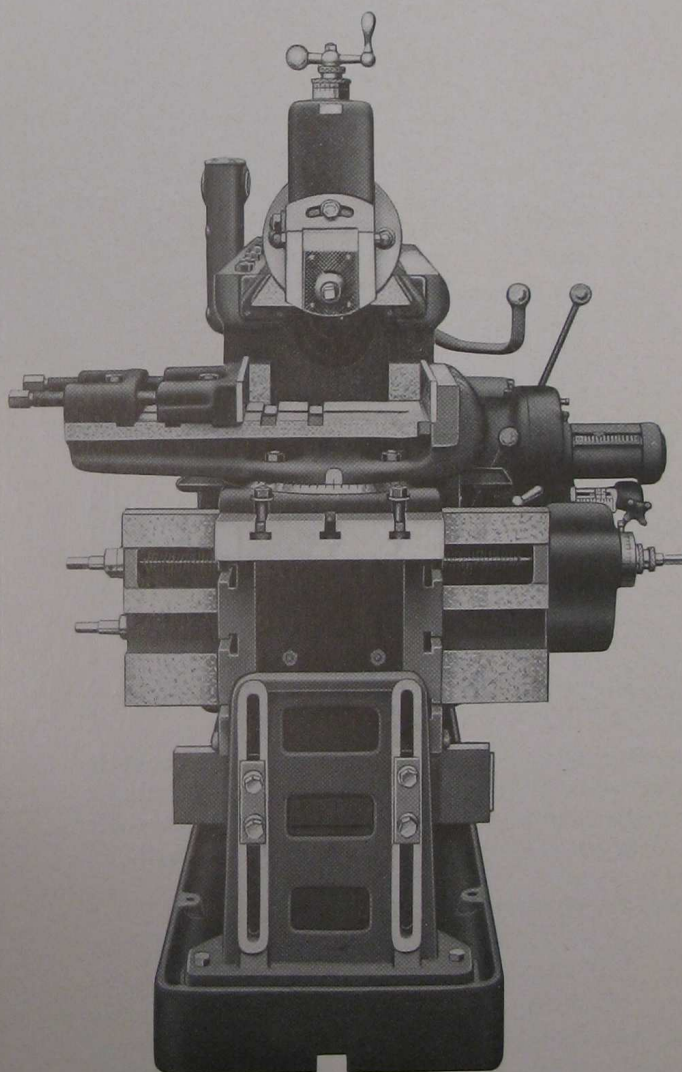
(Fig. No. 1) DOUBLE SCREW VISE



(Fig. No. 2) SINGLE SCREW VISE

Vise

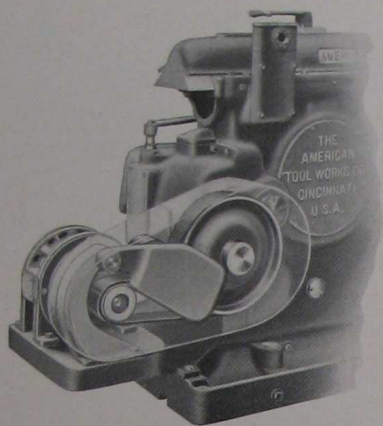
Either a single screw vise or a double screw vise is furnished as regular equipment. Our preference is for the single screw which is regularly supplied, unless customer expresses a preference for the double screw type. Our preference is based on the fact that the single screw vise is simpler and quicker to operate. However, some prefer the double screw vise because it will hold tapered pieces and also because it provides two heavy screws for holding the adjustable jaw against the work. 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. The top of the movable jaw provides a surface plate for the use of measuring instruments.



(Fig. No. 3) "AMERICAN" AUTO-OILED SHAPER—FRONT VIEW
SHOWING THE AUTOMATIC COMPENSATING TABLE SUPPORT



THE AMERICAN TOOL WORKS COMPANY



(Fig. No. 1) FLAT BELTED MOTOR DRIVE WITH IDLER

Motor Drive

The belt-connected motor drive is the type adopted, after careful consideration, for this new shaper. It is proportioned so the belt will deliver the full horse-power capacity of the motor recommended, and at the same time provide a quiet, smooth-running drive.

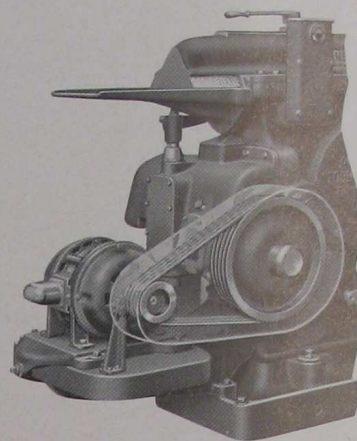
A constant speed motor of approximately 1800 r.p.m. is recommended, inasmuch as an 1800 r.p.m. motor is less expensive and smaller than motors of slower speed.

The motor is mounted on a substantial bracket or base bolted to the shaper column and is connected to the driving pulley by an endless belt with an anti-friction bearing idler, counterweighted to maintain constant belt tension. The whole motor drive unit, except the motor itself, is completely enclosed in a neat, dirt-proof housing.

If preferred by customer, a multiple vee-belt drive may be furnished in place of flat belt at no additional cost. With the multiple vee-belt drive, an 1800 r.p.m. motor should be used.

Keyseating

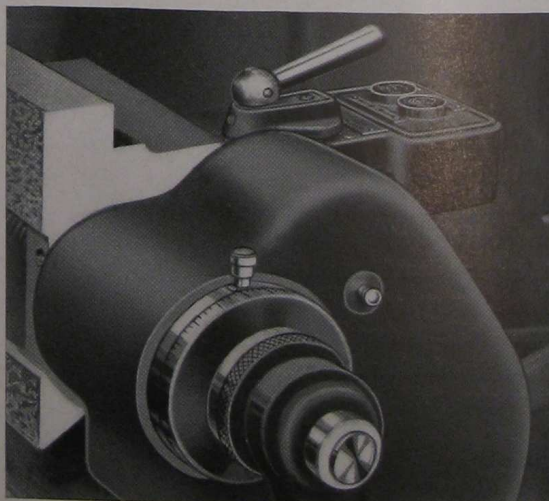
On all sizes below the 24-inch Heavy Pattern the rocker arm is made with a double section at the top, which in connection with the large opening in the column permits fairly large diameter shafts to be passed under the ram for keyseating.



(Fig. No. 2) V-BELTED MOTOR DRIVE

On the larger sizes, 24-inch and up, the rocker arm is closed to give greater rigidity, which is more essential on the larger sizes.

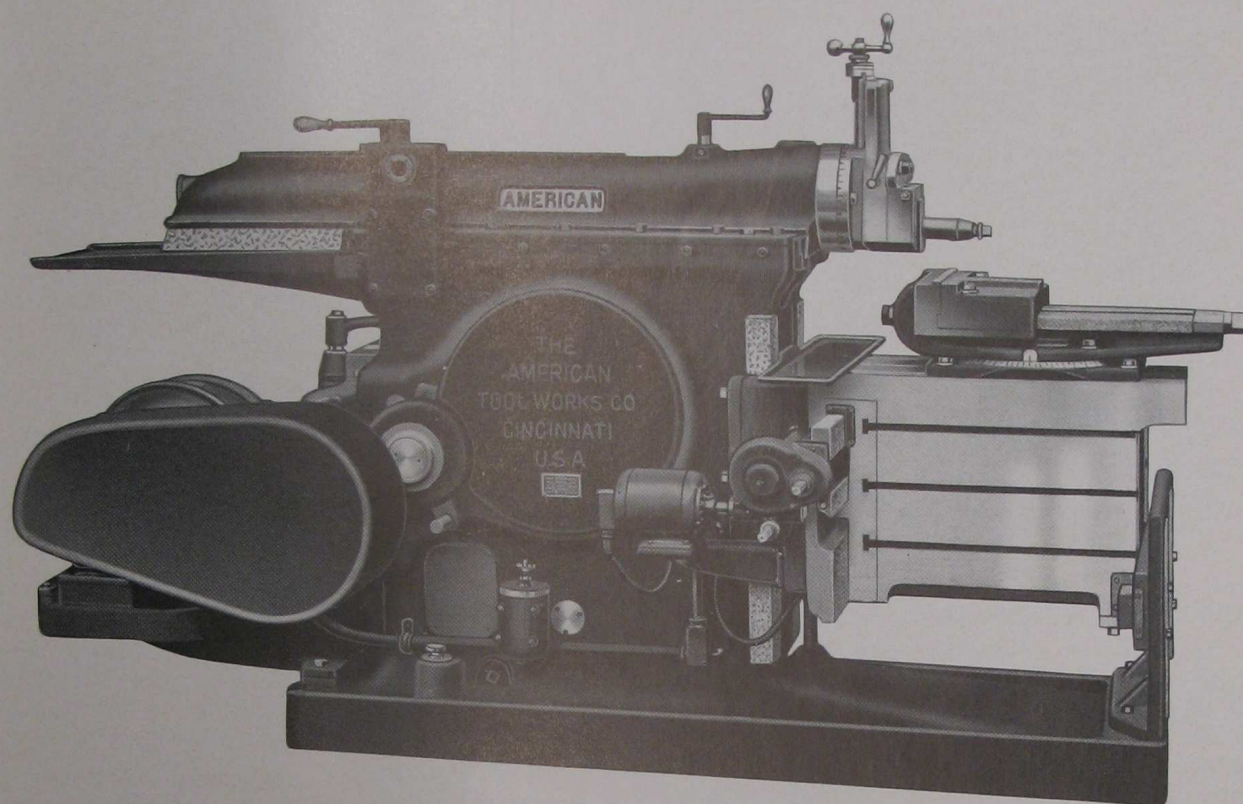
To permit keywaying on the large sizes the column is designed so the shaft can be passed along the front of the column, so the operator can watch his work and control the machine from his natural position, instead of having to pass the work along the rear or far side, as on other designs. This is one of the prominent and exclusive features of the new "American" Auto-Oiled Shaper.



(Fig. No. 3) SHOWING CONVENIENTLY LOCATED PUSH BUTTON FOR OPERATING POWER TRAVERSE FOR TABLE



THE AMERICAN TOOL WORKS COMPANY



POWER TRAVERSE FOR TABLE SHOWING MOTOR MOUNTING AND CONNECTION TO CROSS FEED SCREW

Power Traverse for Table

The power traverse for the table, which can be supplied on order for all sizes of "American" Auto-Oiled Shapers, is a most efficient and dependable mechanism. It is a self-contained, motor-driven unit, entirely independent of the operating mechanism of the shaper itself, consequently is never idling, and is in action only when the table is traversed along the rail by power.

The power traverse is driven by a small motor neatly mounted on the "off" side of the column, and connected to the cross feed screw thru a worm and worm gear. The control is thru a forward and reverse push button conveniently located at the operating end of the rail, thru which the table may be traversed in either direction by simply pushing

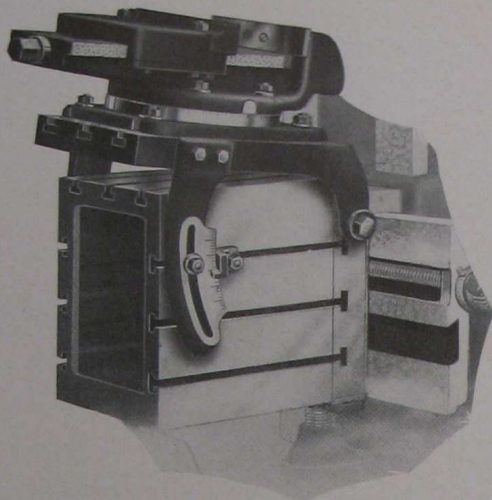
the button for the forward or reverse movement, as desired. It may be operated while the machine is at rest.

A very valuable safety feature is provided thru the power feed engaging lever, which controls an automatic lockout for the power traverse, preventing the power traverse being engaged while the power feed is functioning. This lever must be set central, thus disengaging the power feed before the power traverse for the table will function.

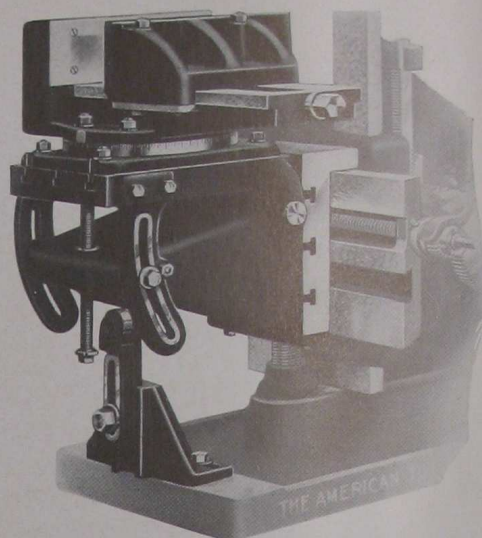
Owing to the simplicity of the power traverse mechanism and the fact that none of its elements are in operation except when in actual use, the life of this mechanism is greatly prolonged and its maintenance reduced to a negligible factor.



THE AMERICAN TOOL WORKS COMPANY



(Fig. No. 1) TILTING TOP FOR BOX TABLE



(Fig. No. 2) MOLD MAKER'S VISE AND TABLE

Special Tables and Vises

In order to adapt the new "American" Auto-Oiled Shaper most effectively to certain specific classes of work, a wide variety of tables and vises has been developed. The use of especially designed tables and vises for certain specific work will oftentimes materially increase the productivity and usefulness of the machine.

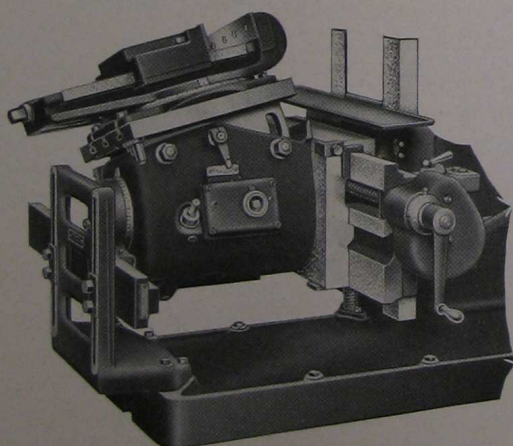
It is well, therefore, for the purchaser to carefully consider the character of his work and then purchase the equipment best suited to it.

Power Down Feed to Head

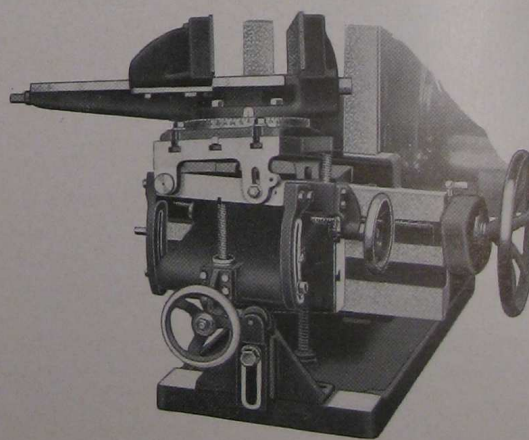
This mechanism, which is furnished only as an extra, automatically feeds the head down by power at pre-determined rates of feed, regardless of the angle at which the head is set.

The down feed mechanism provides 11 rates of feed, from 0 to .050 inches per stroke of ram, and is actuated by an adjustable bumper bar fastened to the column.

It is engaged or released thru a small lever on the ram near the head, and is fully protected against accident by an overload clutch,



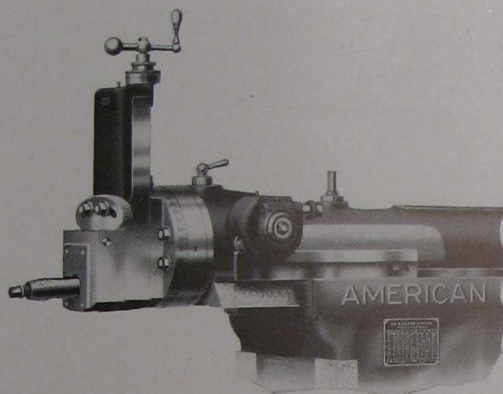
(Fig. No. 3) UNIVERSAL TABLE AND PLAIN VISE



(Fig. No. 4) COMPOUND TILTING TABLE FOR MOLD SHOP WORK



THE AMERICAN TOOL WORKS COMPANY



(Fig. No. 1) SHOWING APPLICATION OF POWER DOWN FEED TO HEAD

which automatically releases when excessive strains are encountered, and then re-engages when the pressure is relieved.

To protect the operator, a neat guard is provided for covering the bumper bar.

All shaper rams are regularly arranged for application of the power down feed mechanism either before or after the machine is shipped.

Countershaft

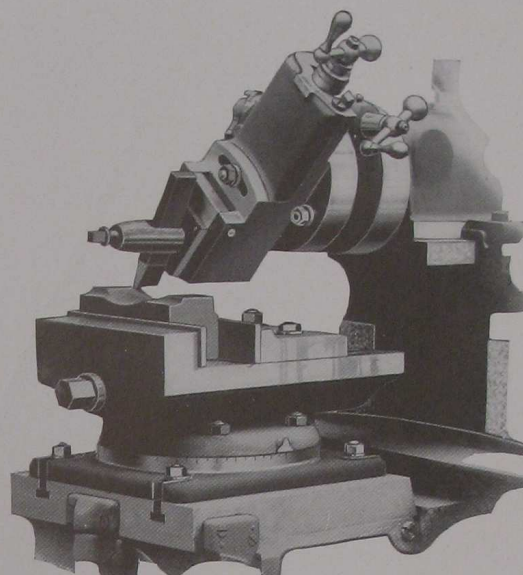
Tight and loose pulley countershaft, with roller-bearing mounting for the loose pulley, is furnished as an extra when wanted.

Regular Equipment

The base price includes the following equipment: Either double or single screw vise, table support, automatic lubricating system, roller-bearing mounting for high-speed shafts, belt guard and necessary wrenches.

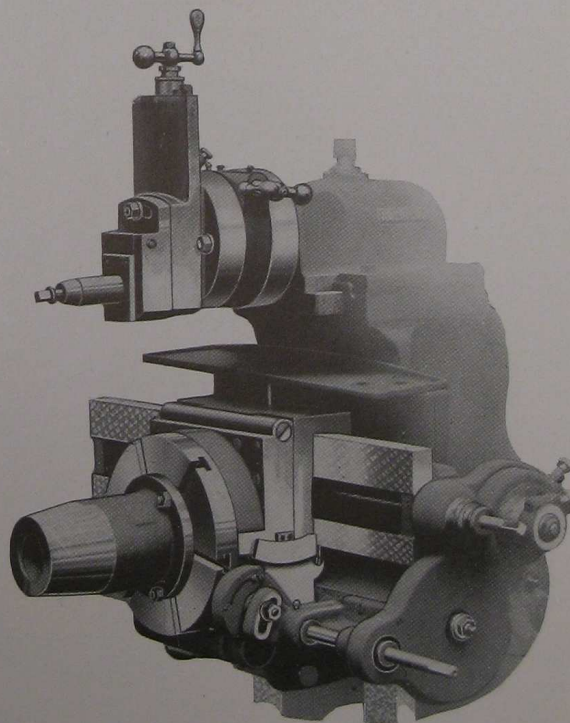
Extra Attachments

At extra cost we can equip all sizes of shapers with motor drive, power traverse for table, power down feed to head, universal table, universal vise, mold maker's table and vise, tilting top for regular box table, concave and convex attachments, circular attachment, countershaft for belt drive, special tables, vises, and attachments to suit customer's work, and a complete assortment



(Fig. No. 2) CONCAVE ATTACHMENT

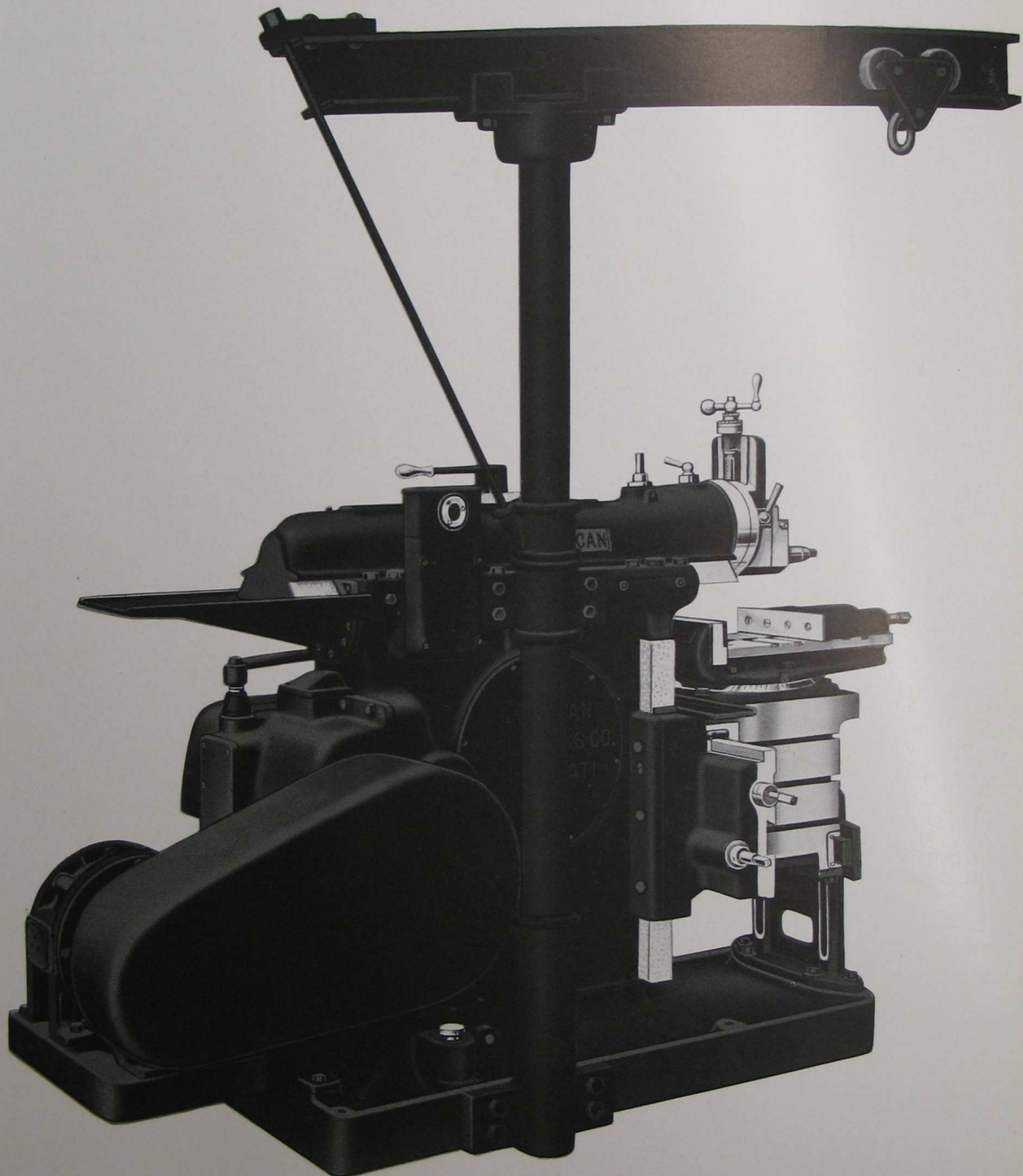
of tables and attachments designed especially for use in railroad shops. (See Railroad Shaper Catalog.)



(Fig. No. 3) CONVEX ATTACHMENT



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BOOM CRANE ATTACHMENT FOR HANDLING HEAVY PIECES



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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 Pattern	36" Heavy Pattern
RAM									
Length of Stroke.....	16 3/4	20 3/4	20 3/4	24 3/4	24 3/4	28 3/4	32 3/4	32 3/4	36 3/4
Bearing in column.....	32x10 3/8	32x10 3/8	36x11 1/4	36x11 1/4	41 1/2x12	41 1/2x12	41 1/2x12	47x13	47x13
Keyway capacity.....	3	3	3 1/2	3 1/2					
TABLE, PLAIN									
Horizontal travel.....	24	24	24 1/2	24 1/2	30	30	30	35	35
Vertical travel.....	12	12	12	12	12 3/8	12 3/8	12 3/8	12 1/2	12 1/2
Maximum distance, table to ram.....	16 3/8	16 3/8	18 1/4	18 1/4	17 3/8	17 3/8	17 3/8	17 1/2	17 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 1/2	16 1/2	18	18	18	20	20
TABLE, UNIVERSAL									
Horizontal travel.....	24	24	24 1/2	24 1/2	30	30	30	35	35
Vertical travel.....	12	12	12	12	12 3/8	12 3/8	12 3/8	12 1/2	12 1/2
Maximum distance, table to ram.....	15 5/8	15 5/8	17 3/8	17 3/8	17 3/8	17 3/8	17 3/8	16 3/8	16 3/8
Length of top.....	16	16	17	17	19	19	19	21	21
Width of top.....	18	18	18 3/4	18 3/4	19 1/4	19 1/4	19 1/4	20 3/4	20 3/4
Side (depth and length).....	12 5/8x15 1/2	12 5/8x15 1/2	13 1/4x16 1/2	13 1/4x16 1/2	14 3/8x18 1/4	14 3/8x18 1/4	14 3/8x18 1/4	15 1/2x21	15 1/2x21
HEAD									
Diameter of head.....	9 1/2	9 1/2	9 1/2	9 1/2	10	10	10	11	11
*Vertical travel.....	7	7	7	7	9 1/4	9 1/4	9 1/4	9 1/4	9 1/4
Size of tools.....	3/8x1 3/4	3/8x1 3/4	3/8x1 3/4	3/8x1 3/4	1x2	1x2	1x2	1x2	1x2
*Deduct 2" when with power down feed, all sizes									
DOUBLE SCREW VISE									
Size jaws.....	12x2 1/2	12x2 1/2	12x2 1/2	12x2 1/2	15x3	15x3	15x3	18x3 3/4	18x3 3/4
Jaws open.....	12	12	12	12	15	15	15	16 3/4	16 3/4
SINGLE SCREW VISE									
Size jaws.....	12x2 1/2	12x2 1/2	12x2 1/2	12x2 1/2	15x3	15x3	15x3	16x3 3/4	16x3 3/4
Jaws open.....	13	13	13	13	16	16	16	16	16
MOULD MAKER'S VISE									
Size jaws.....	16x5 1/2	16x5 1/2	16x5 1/2	16x5 1/2	18x7	18x7	18x7	18x7	18x7
Jaws open.....	16	16	16	16	18	18	18	19	19
Overhang side of table.....	2 1/2	2 1/2	2 1/2	2 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
UNIVERSAL VISE									
Size jaws.....	11x2 5/8	11x2 5/8	11x2 5/8	11x2 5/8	12x3 1/8	12x3 1/8	12x3 1/8	12x3 1/8	12x3 1/8
Jaws open.....	11	11	11	11	12	12	12	12	12
SPEEDS, FEEDS, ETC.									
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 1/2-132	9 1/2-132	8 1/2-120	8 1/2-120	8 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
Range of power down feeds.....	.00-.050	.00-.050	.00-.050	.00-.050	.00-.050	.00-.050	.00-.050	.00-.050	.00-.050
Diameter of pulley.....	16	16	16	16	16	16	16	16	16
Width of belt.....	3 1/2	3 1/2	3 1/2	3 1/2	4	4	4	4	4
R. P. M. of pulley.....	500	500	550	550	550	550	550	600	600
R. P. M. of countershaft.....	444	444	489	489	489	489	489	533	533
Countershaft tight and loose pulley.....	14x5 1/4	14x5 1/4	14x5 1/4	14x5 1/4	14x5 1/4	14x5 1/4	14x5 1/4	14x5 1/4	14x5 1/4
Floor space—motor drive, approximate.....	54x93	54x93	54x97	54x97	59x106	59x106	59x110	62x124	62x124
SHIPPING DATA									
BELT DRIVE, LBS.	Net.....	4100	4200	5100	5200	6500	6600	6700	8400
	Domestic Shipment.....	4400	4500	5500	5600	7000	7100	7200	8800
	Boxed for export.....	5400	5500	6400	6500	8000	8100	8200	10100
MOTOR DRIVE, LBS.	Net.....	4400	4500	5300	5600	6900	7000	7100	8700
	Domestic shipment.....	4700	4800	5700	6000	7400	7500	7600	9200
	Boxed for export.....	5800	5900	6600	7000	8600	8700	8800	10500
CUBIC FEET, ASSEMBLED	Belt Drive.....	160	160	195	200	260	265	270	340
	Motor Drive.....	195	195	230	235	270	275	280	360
Weight, Extra, Universal Tables.....		350	350	425	425	500	500	500	600



