

TRIMOSAW

Operating Instructions



Model A-3

HILL-CURTIS Co.
MAKERS OF HIGH GRADE SAWING MACHINERY
SINCE 1881
KALAMAZOO MICHIGAN

Index for A-3, A-1 and Junior (J-10) Models.

	Page
CLAMP—WORK HOLDER—	
How to use	12
Take up	24
To remove	11
Unlocking	12
DRILL—	
Drilling	19
Inserting	26
Sharpening	20
To tighten Drill Chuck	24
FINGER—	
How to operate	13
To remove from table	13
To take out play	13
GENERAL ADJUSTMENTS AND TAKE UPS, ETC.—	
Changing from one operation to another	15
Motor mounting	23
Oiling	2
Swing Routing and Jig Saw Arm out of place	20
To remove end play in main shaft	24
To remove end play between Finger and Brass Nut	24
To tighten Drill Chuck	24
“Take Up” on Work Holder Clamp	24
Use and care of Belts	23
JIG SAW—	
Broaching an Inside Mortise	17
Inside Mortise in Solid Type High	17
Jig Sawing	16
Making an Inside Mortise	16
Use of Gauges in Jig Sawing	17
OPERATIONS—GENERAL—	
Broaching an Inside Mortise	17
Cutting down Quaded End of Slugs	8
Drilling	19
Inside Mortise with Circular Saw	9
Inside Mortise with Jig Saw	16
Jig Sawing	16
Mitering	14
Outside Mortise	11
Planing Cuts to Type High	19
Routing	12
Sawing and Trimming	19
Stereotype—Solid Type High Jig sawing Inside Mortise	17
Stereotype Type High Planing	19
Straightening Warped Plates	10
Tacking Strips	10
ROUTER—	
Inserting	18
Locking Cuts on Router Plate	18
Planing Cuts to Type High	19
Routing	19
Setting Spindle	19
Sharpening	20
SAW—CIRCULAR—	
Raising and Lowering Saw	2
Removing	3
Sharpening (and correct Saw to use)	4
SPECIAL GAUGES—	
Any Angle Gauge	21
Beveling Gauge	22
Cross Cutting Gauge	22
Extension Gauge	20
Right Hand Ripping Gauge	21
TRIMMER—	
Removing	6
Setting Trimmers and Micrometer Gauge	7
Sharpening	6
Truing	6
Index for Ben Franklin TrimOsaw	
CLAMP—WORK HOLDER—	
Operating Work Holder Clamp	28
Raising Clamp to Saw Large Plates	28
OPERATIONS—	
Cutting down Quaded End of Slugs	8
Making an Inside Mortise with Circular Saw	9
Making an outside Mortise	11
Mitering	29
Setting by Point Adjustment	27
SAW—CIRCULAR—	
Grinding Saws	29
Raising and Lowering Saw	25
Removing Saw and Saw Heads	25
TRIMMER—	
Removing Trimmer Knives	26
To set Trimmer Knives	27
To sharpen Trimmer Knives	26
MOTOR MOUNTING	23
EXTENSION GAUGE	20

FOREWORD



This book of TrimOsaw operating instructions is published for the benefit of those owning and operating TrimOsaws. It also carries certain suggestions on such relatively simple, yet important angles, as lubrication, supervision and proper care.

Just as with a pocket knife or any other tool which relies on a sharp edge it is necessary that TrimOsaw Saw Blades, Trimmers, etc. be kept sharp. We have herein explained not only how the TrimOsaw user can quickly and efficiently do this sharpening, but what is more to the point, the TrimOsaw (except in our Ben Franklin model with which it is an extra) comes complete with a Saw Grinding and Truing Device, with which any novice can in a few minutes condition a Saw Blade and put it in far better condition than the most expert saw filer can. This Saw Grinding Device and our "Hard" Metal type Saw Blades represent both distinct engineering advances and practical improvement.

We respectfully ask the reader to take advantage of them by becoming proficient in their use as explained herein. These and many more features of the TrimOsaw, which space does not permit us to touch on, give the owner and operator of the TrimOsaw advantages over all other existing saw-trimmers, and careful study of these operating instructions will therefore make it possible for you to produce more and better work with the TrimOsaw and thus justify the investment which the owner has made and at the same time advance your own fortunes.

NOTE:

- (1) Some one individual should be charged with the responsibility of seeing that the TrimOsaw is properly lubricated.
- (2) Have the oil can handy at all times.
- (3) Learn from these instructions where and how to oil.
- (4) Clean the TrimOsaw regularly. Clean up around the floor. See that the various parts of the machine are placed where they belong, after using, so that it will be ready to start off and do any operation at any time.
- (5) Do not overlook the fact that the TrimOsaw is a precision machine. Many of its parts are made to a limit of $\frac{1}{2}$ of $\frac{1}{1000}$ of an inch. This is done to insure accuracy of the many fine operations required for good printing. It is not intended for cutting boxing and crating lumber and such work should not be done on a TrimOsaw.



Oiling the TrimO saw

Paragraph No. 1.

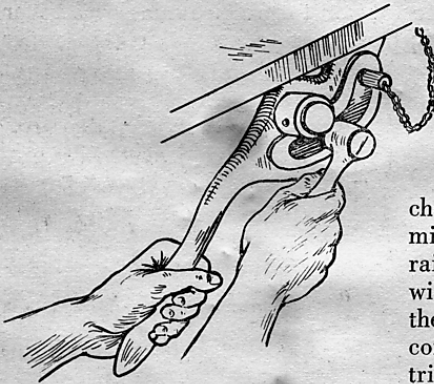
The ball bearings used on the TrimO saw Saw Arbor, Drill Spindle, and Tightener, are the very best made. They are guaranteed by the manufacturers, and we, in turn guarantee them to you, but they must have sufficient and suitable lubrication. This is a condition of the guarantee. The Oil furnished with the TrimO saw is especially selected for use on the TrimO saw and for all its bearings because of its non-acid quality and its suitability for high speed bearings. Good lubrication means better service and longer life for your TrimO saw.

Bearings should be oiled at least once a day or oftener depending on the work you are calling on the TrimO saw to perform. Oil the following places: (1) Saw Arbor. (2) Double Drill Pulley on rear pedestal. (3) Double Drill Pulley on neck. (4) Main Shaft, oil at rear of table on pedestal. (5) Lower Jig Saw Bar, at both top and bottom of bar and in drilled oil hole. (6) Upper Jig Saw Bar at both top and bottom of bar. (7) Drill Spindle, both in oil hole at side, and in spindle slot. (8) Lower Pitman or Jig Crank Shaft Bearing—oil this at rear of pedestal—large oil cup. (9) Pitman or Lower Jig Connecting Rod, oil both top and bottom pins. (10) Ball Bearing Tightener Pulley, on Saw Belt Tightener. (11) Motor—both bearings.

Raising and Lowering Saw and Trimmer

On A-3, A-1 and J-10, (Junior) Models

Paragraph No. 2.



On the right hand side of the TrimO saw, (all models except the Ben Franklin for which see paragraph No. 38), just underneath the table, on the saw hanger bracket, you will find a knurled pin on a chain. This pin determines the Trimming position. When the long or raising lever is raised up as far as it will go, (the pin being in position), the Saw and Trimmer are in the correct position for sawing and trimming of rules, slugs, etc. This

pin need only be removed when it is desired to remove the trimmer tool, or when sharpening saws on the Saw grinder.

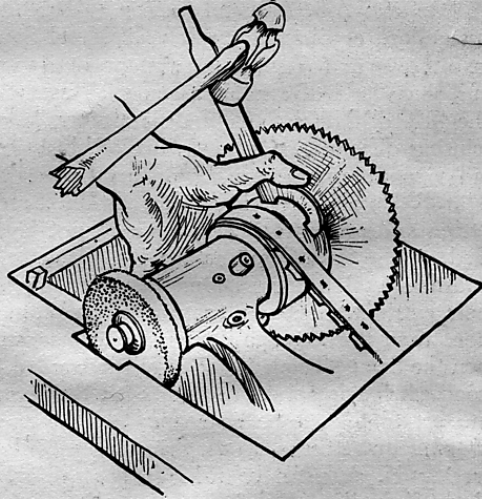
When it is desired to lower the saw so plates, etc., can be cut, push down on the long lever until the door is flush with the table then lock with the short lever. Located on the saw arbor between the drive belt and emery wheel is a rubber bumper. If this bumper is too high it will not permit the raising of the saw to the proper height for cutting plates. With a jack knife reduce height so the saw can be raised to the desired point. When bumper has worn down it should be replaced, otherwise metal to metal contact of door and saw arbor may result in noise due to vibration.

Removing Saws

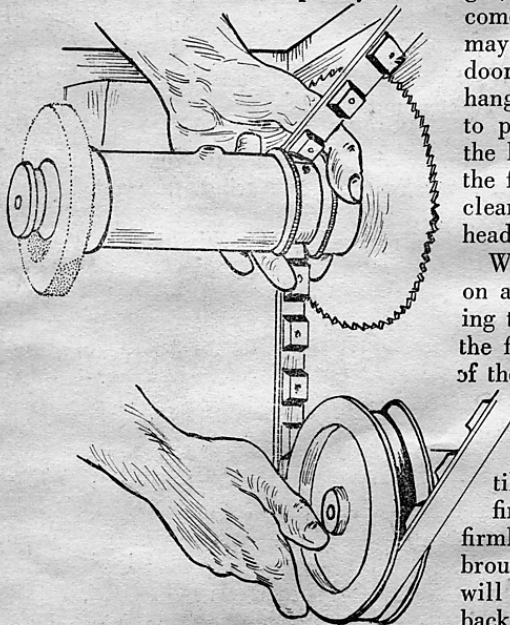
On A-3, A-1, J-10, (Junior) Models

Paragraph No. 3

It is advisable to take off both the saw blade and the saw head when removing the blade from the machine as owing to the patented TrimO saw feature of independent saw head and trimmer tool, it will in no way affect the setting of the trimmer. Place the spanner wrench in position on saw collar, and with a light hammer such as used for tacking on plates, tap the spanner wrench two or three light blows in the same direc-



tion as the saw rotates. This will loosen the saw head. (To hold the saw arbor from turning while tapping the spanner wrench, grasp the saw arbor pulley and drive belt with left hand, thumb over wrench.) Then lower the saw as far as it will go, and with the left hand holding the saw collar, turn the main drive pulley to the right, and the saw with head will come off the arbor. The saw may be taken up through the door, or underneath the saw hanger as desired. Vice versa to put saw back on. Be sure the back face of saw head and the face of arbor are carefully cleaned before replacing saw head.



When it is required to put on a new saw, or when changing the saw blade, do not give the final tightening to any one of the four screws ahead of the others. Instead, screw in each screw a little at a time until each requires only the final short twist to tighten firmly. If screws are not brought down together the saw will "wobble". Always clean back of saw and face of saw head before replacing.

Sharpening Saws

Paragraph No. 4

On our A-3, A-1 and Junior (J-10) Model TrimO Saw, we furnish as standard equipment our "Hard" Metal Saw Blades, unless order specifies otherwise; for example, customer may wish one "Hard" Metal Blade and one Blade of another type, such as a Swage Tooth or a Set Tooth. The "Hard" Metal Saw Blade, however, is recommended for all general printing office work, viz. sawing of slugs and rule, both wood mounted and unmounted electros, also shell and solid type high stereotype. The "Hard" Metal Blade is hollow ground, requiring neither swaging nor setting and owing to its hardness cannot be filed, instead must be sharpened on the Saw Grinding Device. Do not attempt to swage or set the "Hard" Metal Blade. Doing so will damage it. These blades will hold their cutting edges five to ten times as long as any other saw. Where more than the average percentage of work is on wood mounted plates, then the Swage Tooth Blade is recommended, and where very considerable wood sawing is done, the Set Tooth Blade should be used. Both swaged and set tooth can be sharpened on the saw grinder, but require hand swaging or setting. Brass Saw Blades only should be used for cutting brass rule, and can be used for occasional sawing of copper and zinc plates, but where there is some quantity of the latter work, it is best to use the Special Fine Set Tooth (122 teeth) Metal Saw.

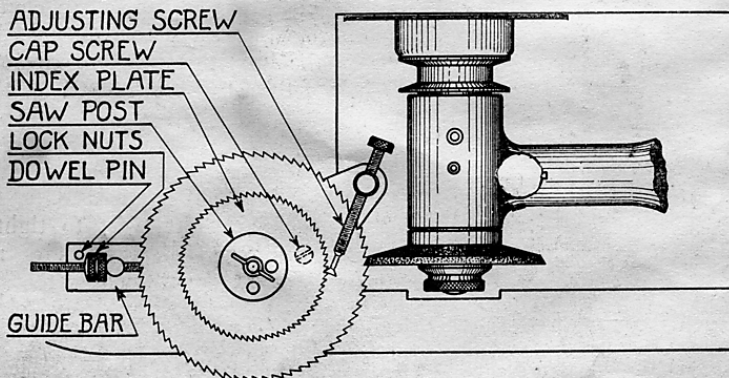
The detailed step by step instructions below given may on first sight or reading give the impression that this operation is complicated and difficult. The exact reverse is the case. It takes the average printer fifteen to thirty minutes to learn how to use this device and grind his first blade; thereafter the grinder is put in place, the blade ground, and grinder removed from the table in five minutes.

(1) Place Grinding Wheel on right hand end of saw arbor, with dished face of wheel out. Tighten nut firmly.

SPECIAL NOTE:

(a) For "Hard" Metal and Swaged Tooth Saws use form wheel X-294, which is the same shape as saw tooth and grinds face and back of tooth at the same time.

(b) For Brass Saws use wheel marked X-346 which is a thin saucer wheel and grinds face of tooth only.



(2) Place the Grinder in position on the TrimO saw table by means of dowel pin and cap screw in guide bar. Cap screw is placed in guide bar through hole in sliding member and is tightened with screw driver. This must be done before saw is placed on grinder.

(3) The Saw Post on Grinder has three holes, one each for $6\frac{1}{2}$ " , 7" and Brass Saw. Care should be taken to have saw post placed in correct hole and locked with wing nut for size and kind of saw to be ground.

(4) Remove Knurled Pin, which hangs on chain on the saw hanger bracket at right hand side of machine and raise grinding wheel until center of saw arbor is $1\frac{1}{8}$ " above top of table. This will result in saw blade being in line with center of wheel. Lock saw arbor in this position. This is important as saw teeth will be ground off on one side if arbor is raised more or less than $1\frac{1}{8}$ " above table.

(5) Saw to be ground is not removed from saw head. Saw Heads are drilled with $\frac{1}{4}$ " hole to receive the pin in index plate. Place saw head with saw down on saw post and then place index plate on saw head. Adjusting screw engages teeth of index plate and is used to adjust for grinding the face of tooth.

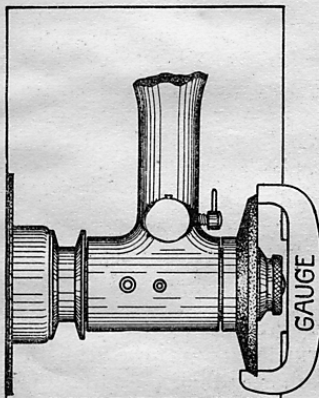
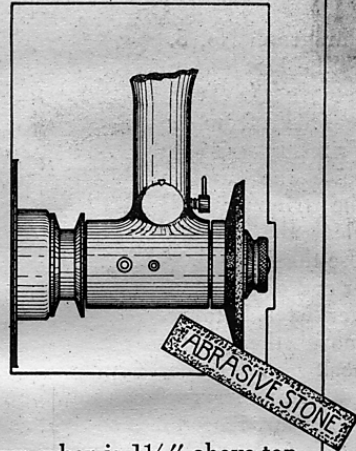
(6) Adjust the Saw to the grinding wheel before wheel is in motion. Make adjustments so wheel will grind very little. When wheel is in motion fine adjustments can be made for face of tooth with adjusting screw and for back of tooth, (or depth) with lock nuts. Lock adjusting screw with small knurled screw located on top of it, and tighten up the nut. Lock the locking nuts by holding one and tightening the other against it.

(7) Do not grind so heavy as to color the teeth. This will draw the temper and leave the saw soft. It is very much better to go around the saw two or three times grinding lightly, than to go around once, grinding heavily and perhaps ruin the saw. As a rule once around is sufficient.

(8) The Grinder is operated by pushing the sliding member with saw and index plate forward, (using both hands) into the grinding wheel. Keep the index plate tooth in contact with adjusting screw by slight pressure to left while grinding.

(9) Always keep Form Wheel X-294 dressed to correct shape of saw tooth by using abrasive stone to dress wheel and saw grinding wheel gauge to determine correct shape. NEVER try gauge on wheel when in motion. NEVER use saw grinding wheels for anything but saw grinding.

(10) If too heavy a cut is taken with grinding wheel a burr or rough edge will be raised on the side of saw. This can be removed either by going around the saw with the wheel taking a very light cut or with an oilstone rubbed flatwise against side of saw.

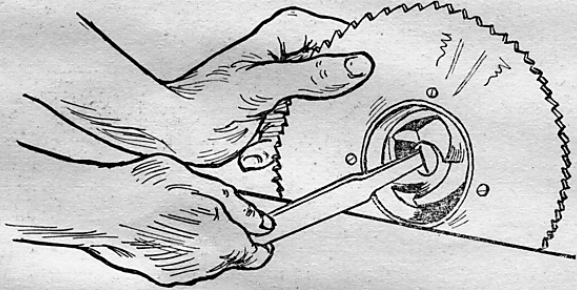


Removing Trimmer

On A-3, A-1, J-10, (Junior) Models

Paragraph No. 5.

The best way to remove the Trimmer Tool from the TrimO saw is to raise the saw so the trimmer will clear the table. Use the screw driver end of the spanner wrench to remove the center lock screw in the trimmer.

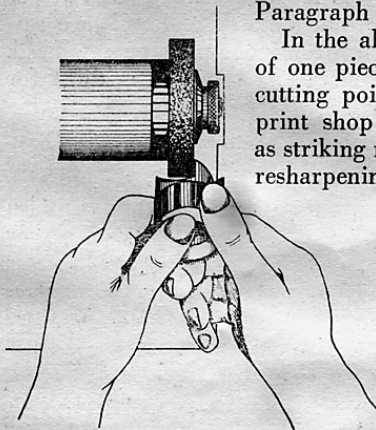


Trimmer Tool can now be removed from the arbor with your hands. If for any reason it is so tight as to make it difficult to remove, then it can be forced out by turning the adjusting screw through which the long center lock screw just taken out passes and on which the trimmer itself is seated, i. e. by turning screw to the left.

Sharpening Trimmer

On A-3, A-1, J-10, (Junior) Models

Paragraph No. 6.



In the above models the Trimmer Tool is made of one piece of high grade tool steel, and has four cutting points. Used as intended and on average print shop material, (and barring accidents such as striking nails), this trimmer tool will not require resharpening under three to twelve months. It is of the same type as is used in machine shops where it is termed an "end mill". Unless it has been damaged it will not require grinding, but instead can be sharpened by honing with an oil stone. When necessary to grind, hold cutting faces of points or knives against side of flat grinding wheel, grind lightly

and evenly. NEVER GRIND THE ENDS OF THE POINTS. After grinding, hone off burrs from cutting points with oil stone.

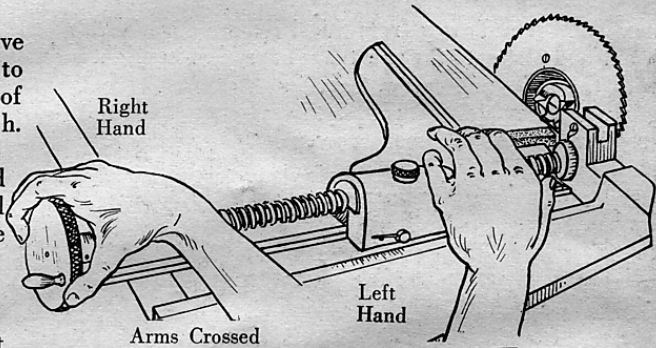
Truing Trimmer Tool

On A-3, A-1, J-10, (Junior) Models

Paragraph No. 7.

Providing Trimmer Tool has been evenly ground as per paragraph No. 6 all four points will remain one uniform length. However, if one of the points has been damaged so that it is shorter than the other three that does not make it necessary to grind down all points to the length of the shortest, instead the three longer ones will take care of all trimming

until they have worn down to the length of the fourth. When necessary to grind to bring all points to one uniform length, place an oilstone on table just

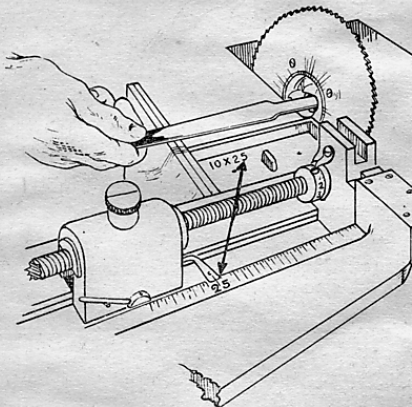


forward of center of trimmer tool (trimmer tool being locked tightly in place by center lock screw referred to in paragraph No. 5), in line with trimmer points on their down stroke, (stone should not come in contact with trimmer points at the back or up stroke,) and in corner formed by work holder gauge and finger. Leave about $\frac{1}{8}$ " space between end or edge of stone and trimmer tool before starting motor. Now, holding down stone with one hand, turn on the current and gradually work stone up to trimmer by turning micrometer screw hand wheel. Do this very carefully and slowly, and as soon as sparks are seen shut off motor, examine points, determine whether further grinding is necessary. When all four points have been ground, remove trimmer and sharpen faces by grinding per paragraph No. 6.

Setting Trimmer Tool and Micrometer Gauge

On A-3, A-1, J-10, (Junior) Models

Paragraph No. 8.

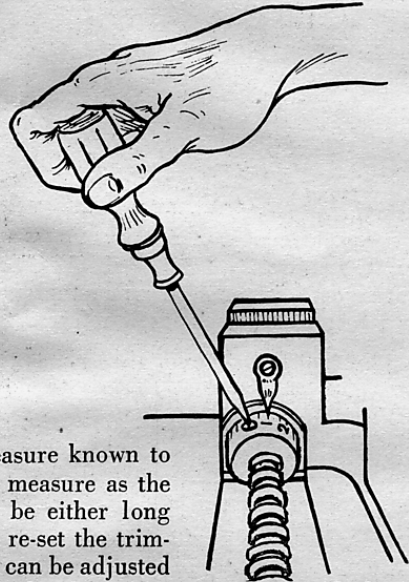


Best results in trimming will be had when the Trimmer Tool extends beyond the cutting edge of the saw so as to trim about $\frac{3}{4}$ of a point. Do not have the trimmer points extend so they will trim more than this, it being unnecessary. If preferred slightly less than $\frac{3}{4}$ of a point will give good results. However, the trimmer tool should not be set to trim less than $\frac{1}{2}$ point. To set the trimmer first remove the center lockscrew as per paragraph No. 5. Inside the trimmer tool, is the

adjusting Screw, visible when center lock screw is removed. Place a piece of iron furniture, (must be accurate) of a known measure, and set the finger at this measure. Then move the gauge forward until you are in line with the forward points of the trimmer tool. Then with a screw driver turn the adjusting screw. Turning it to the right carries the Trim-

mer Tool in and away from the saw table edge; turning to the left adjusts it out and closer to the saw table edge. When slight adjustments are made with the adjusting screw, bear in mind that an eighth turn of this screw moves the trimmer approximately 1 point. It is good practice to turn the saw arbor around by hand and in opposite direction to rotation of saw to be sure the trimmer is not out so far as to strike the edge of the table.

After the trimmer has been set to trim about $\frac{3}{4}$ point, test the micrometer gauge to determine whether your TrimO saw is cutting accurately. To do this, saw and trim one or more slugs to any given length and test with a piece of iron furniture or other measure known to be accurate and of the same length measure as the test pieces. Should the test pieces be either long or short, it will not be necessary to re-set the trimmer—instead, the micrometer gauge can be adjusted by proceeding as follows: If piece shows gauge is cutting a trifle long, turn the hand wheel to right; if too short, to left (having made sure that dial pointer was pointing to zero to begin with) to compensate for the number of points or half-points required. Now loosen the set screw located at zero position on the dial (do not remove this set screw) and holding the micrometer screw to prevent its movement, turn the dial so that zero is at the top position directly under the pointer and tighten screw.

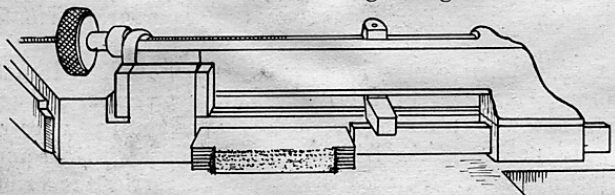


Cutting Down the Quaded End of Slugs to Prevent Work Up.

On All Models

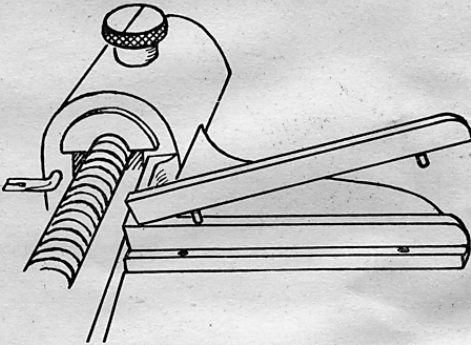
Paragraph No. 9.

By placing the finger on gauge at 4 picas 11 points, or 5 picas, and putting in five or six slugs at one time, the butted ends may be cut down so they will not print up. However, should the form be locked up, place it on table and rout off the high slugs with router bit. This latter



operation, of course, can only be performed on the Model A-3 TrimO saw.

Sawing and Trimming 10 Point to 2 Pica Material On A-3, A-1, J-10, (Junior) Models



Paragraph No. 10.

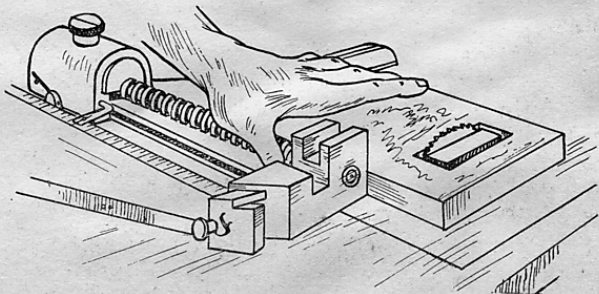
Extending the full length of the finger along its face will be found a removable 10 point attachment or gauge. This is held to the finger by two vertical dowels and can be readily lifted out and replaced but be sure it and its seat are cleaned before replacing. With this piece removed, it is possible to bring the lower lip of the

finger under the clamp bar and within ten points of the trimmer. With this piece removed and finger brought to any desired distance from two picas down to ten points, by use of graduated gauge and dial, it is possible to cut short measure leads and slugs all the way from ten point up to two picas. It is also possible to reduce the thickness of a slug; for example cutting off the ribs or the side of a 10 point face from a 12 or 14 point body.

Inside Mortising with Circular Saw On All Models

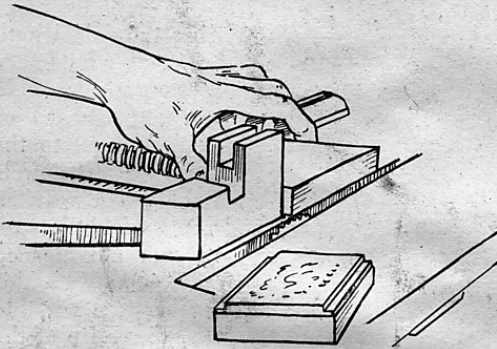
Paragraph No. 11.

In making an inside mortise by undercutting with circular saw, the first thing to keep in mind (because the work must be held by hand) is that the operation should be done carefully and easily. Use the micrometer gauge, placing cut in front of same and face up on the table. The scratched or etched line across the door of the TrimO saw indicates the point at which the saw will begin coming up through the work. Now, with the work in place, and the saw under the table, turn on the current and gradually raise saw with lever, meanwhile holding work with hand at a point away from where saw will come through plate. You can raise the saw only slightly more than this, as its continued upward movement would be halted by the rubber bumper striking under side of the door. The plate can now be moved either forward or backward to obtain the desired length of cut. Repeat this operation until the four saw cuts have been made and you will have a perfect inside mortise.



Tacking Strips

On All Models



Paragraph No. 12.

When as at times it is necessary to reduce the size of a cut or plate to the extent that nails or tacks at edges are removed a tacking strip can be cut with the circular saw by raising the same sufficiently above the table so as to reduce thickness of metal at edges sufficient to keep

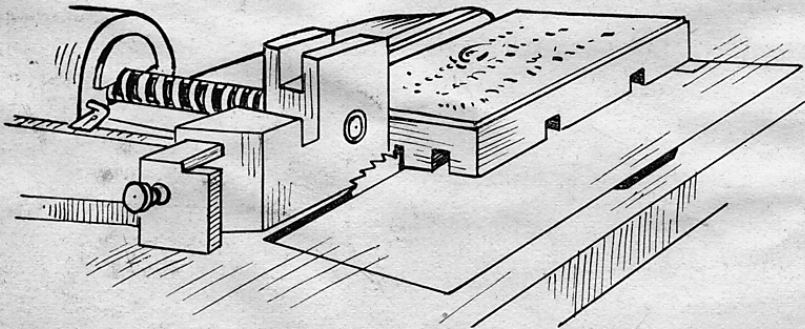
tack heads under printing surface. Normally one pass over the saw, which is six points wide, will provide sufficient space for tacks. If not, then the space can be made wider by passing over the saw a second or third time. It is almost always possible to use the micrometer gauge for this work, but be sure to place a piece of paper under the cut so as to prevent damage to printing surface while cut is passing over table.

Straightening Warped Plates

On All Models

Paragraph No. 13.

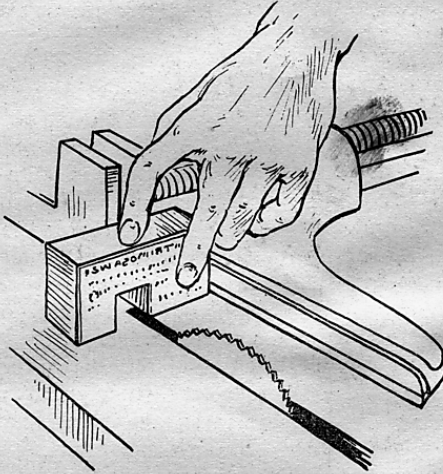
There are two ways this can be done. Raising the saw about $\frac{1}{2}$ " to $\frac{5}{8}$ " above the table and by passing the cut over the saw several times, will as a rule straighten up the cut. It may be found necessary to cross saw, that is with and across the grain, or perhaps from corner to corner as well. Judgment must be used in this operation so as not to reduce too greatly the strength of the base and thus prevent good lock up. However, we advise using the Type High Planer Tool for this operation. Place a piece of bristol board underneath the cut to be straightened and then proceed to plane the cut to type high. Remove the cut from the router plate, and paste the bristol board on the back of the cut and same will be perfectly type high. See paragraph No. 28.



To Make an Outside Mortise

On All Models

Paragraph No. 14.



Raise the circular saw to whatever depth the mortise is to be and lock firmly in place. Remove the work holder clamp from the micrometer gauge, except on the Ben Franklin Model. Now place the cut to be mortised in the micrometer gauge setting the finger at the required position. The metal of the cut should face the saw. Now slide the micrometer gauge forward, passing thru the saw and

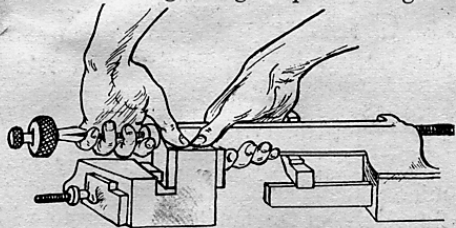
return the micrometer gauge, move the finger 6 points with micrometer screw hand wheel (on Ben Franklin use the point adjustment lever) and repeat this operation until the desired width is obtained. It is well to bear in mind the saw blade cuts 6 points, and by moving the finger 6 points each time the mortise is quickly made to exact width. These instructions have to do with the making of smaller outside mortises—those not exceeding 6 picas in depth. For larger size, it will of course, be necessary to proceed as per instructions for inside mortising, paragraph No. 21.

Clamp is Removable

A3, A1, J10 (Junior Models)

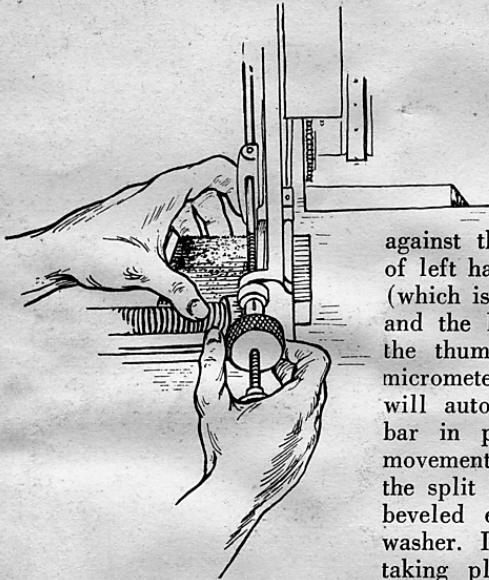
Paragraph No. 15.

To remove clamp from micrometer gauge and therefore from table place thumbs of both hands on top of raised projections at right hand end of the gauge between which the center member of the clamp is fitted. Fingers of both hands being under the clamp, each side of projection, then exert downward pressure on thumbs, lifting straight up with fingers. If, owing to newness or foreign matter it does not come easily, use screw driver and pry, using easy movement under the downward projecting jaw or lip of clamp at the extreme end nearest you.



Work Holder Clamp – How to Use

On A-3, A-1, J-10, (Junior) Models



Paragraph No. 16.

After placing work in position place thumb and forefinger of right hand on knurled surface of split lock nut body pulling it toward you. This will bring the clamp against the work. With forefinger of left hand placed over the casting (which is attached to the clamp bar and the long screw rod) and with the thumb of left hand over the micrometer gauge screw, the left hand will automatically hold the clamp bar in place, then with a quick movement of the right hand bring the split lock nut forward until its beveled ends seat in the beveled washer. Immediately on this seating taking place give the lock nut a

quick turn to the right with the ball of the thumb, in the meantime holding clamp as above indicated with left hand. Your work is now locked securely. A little practice will develop the proficiency necessary to make for speed and coordination of these movements, and you will find it is unnecessary to give the split locking nut a second turn to further tighten the work.

Unlocking the Work Holder Clamp

Place forefinger and thumb of right hand on knurled surface of split lock nut with a quick turning movement toward the left using mainly the forefinger you will unlock, then grasping lock nut pull it back quickly (with almost a jerk) to the end of the rod, then drop your thumb over the head on end of rod holding latter and lock nut together and push forward full distance; you have then unlocked your work and have left the machine ready for next operation. It is recommended that you practice these movements for about half an hour when you will find this is not only the quickest clamp that has ever been developed but also the most positive.

Operation of Work Holder Finger Also its Removal from the Table.

On A-3, A-1, J-10, (Junior) Models

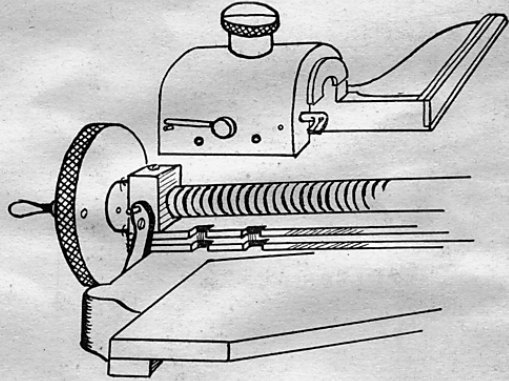
Paragraph No. 17.

Work holder finger is readily movable to any position along the micrometer gauge. The line mark on the top of the round knob of the finger shows the nut to be engaged with the micrometer screw when in

line and parallel with gauge and screw. When at right angles with these members finger nut is disengaged from the main screw. To move finger pull up head and give a quarter turn, place finger where wanted using the graduated brass scale on the carriage to locate, then turn the knob back to engage its nut with micrometer screw. You now have an even pica measurement providing dial at extreme right hand of screw is at 0, if not turn to desired position using hand wheel at left end of screw.

To Remove Finger from Table

Move finger to extreme left end of micrometer gauge and pull straight up. Finger will then lift from the gauge, there being two small slots at left end of carriage bar through which the two pins holding finger to bar pass. To replace finger it is, of course, necessary to do so at the same point at which



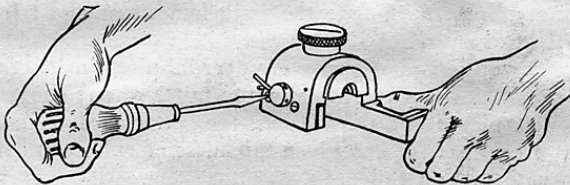
it is removed, and when machine is new it may be necessary to strike micrometer gauge finger with palm of hand to make it go in to place. Then with engaging nut on micrometer screw the finger can be started on the screw again, or with nut lifted out of screw finger can be placed at any point along gauge.

Taking Play Out of Finger

On A-3, A-1, J-10, (Junior) Models

Paragraph No. 18.

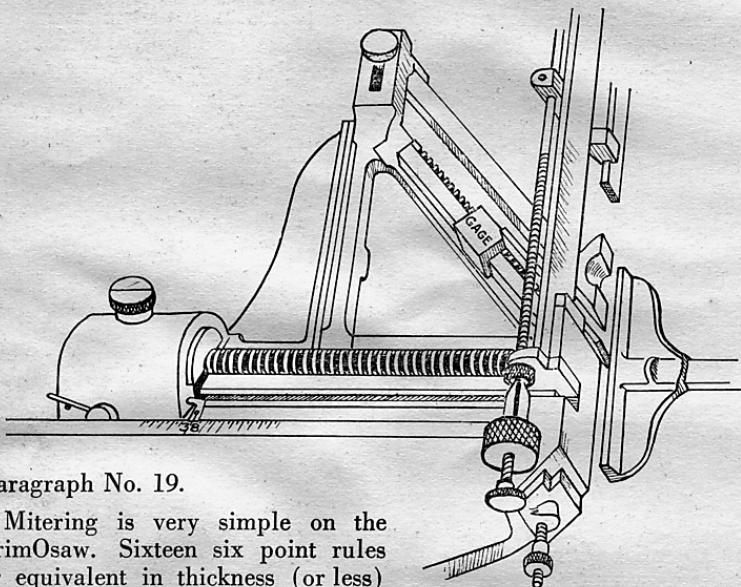
Remove finger from table. With screw driver take out the two small machine screws located on either side of the finger locking screw. These two screws hold a steel wearing plate to the inside of the back flange of the finger. Now insert a very thin piece of paper between plate and finger. Tighten up screws, try for fit on gauge bar. If play is still present, proceed as before and insert a second thin piece of paper. This is an adjustment that will probably not have to be made more than once in several years and is provided so that there need never be any play



between finger and its bar. In other words, finger can be kept rigid and will measure accurately for its full length at all times.

Mitering on the TrimO saw

On A-3, A-1, J-10, (Junior) Models



Paragraph No. 19.

Mitering is very simple on the TrimO saw. Sixteen six point rules or equivalent in thickness (or less) can be mitered at one time, i. e., 8 right hand and 8 left hand. Faces always up. As long as the same thickness of rule is used, it makes no difference what length is to be mitered.

Saw and trim your rules to the length desired.

Set micrometer finger at 38 picas, then place left hand miter vise in position and set miter vise gauge block at setting equal to length of one of rules you intend mitering, bringing rule up snugly to gauge block.

Place batter in position and bring same up to end of rule, then lock with locking screw. **From this point on the batter is your guide.**

Remove the miter vise gauge block, place rules to be mitered in miter vise, one against the other, using batter as guide. Do not place more than 4 picas of border in this vise at one time. Be sure end of each rule is brought into contact with batter.

Bring your work holding clamp up in the usual way and lock.

You can at the same time place up to 4 picas in the right hand miter vise at the extreme right hand back end of micrometer gauge, also using batter as your guide. You are then ready to cut and trim both right and left hand miters to a perfect 45°.

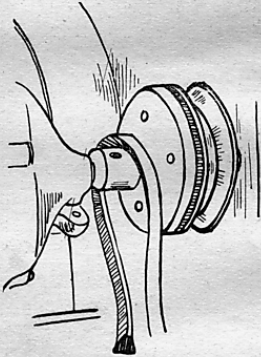
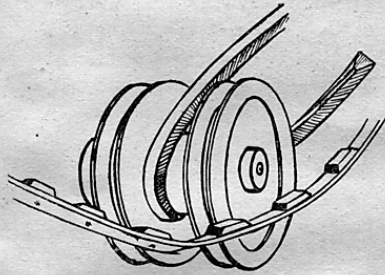
To miter the opposite end of the rules, transfer the rules from right hand miter to the left, and from the left to the right hand, saw and trim the rules, and you will have a perfect border.

In the event the rules you intend mitering are over 39 picas in length, cut an extra piece the same thickness you are about to miter of any shorter even pica measure (say 20 picas) and use it to set the batter as described above. With your batter once set for any given thickness of rule, you can then miter any length rule of that thickness.

Changing From One Operation to Another. On A-3 Model

Paragraph No. 20.

While, as you can easily demonstrate to your own satisfaction that it is possible to operate on an A-3 TrimO saw, the circular saw, drill, and jig saw, all at the same time, you will recognize that this is not practical from an operating standpoint and neither is it advisable. We, therefore, suggest that it requires only a few seconds to slip the "V" belts on or off of their pulleys, that only such belts as are needed for any certain operation be used. When the circular saw belt is not being used, it should be slipped off the main pulley and let hang loose outside of the main pulley. When the drill belt is not being used it should be slipped off, and allowed to "ride" on the hub between the drill and circular saw belt pulleys. The jig saw belt, when not being used, can be slipped off and allowed to ride on the motor shaft.



By placing the jig saw belt on the small drive pulley holding it with the left hand and putting the belt as far as possible on the lower jig saw pulley with the right hand and continuing to guide it, turn the left hand toward the right and the belt will go on the lower pulley. See cut.

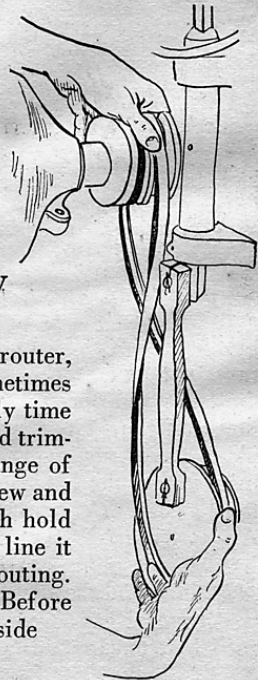
Belts should not be changed while in motion. A little practice throwing belts on and off will convince you that the TrimO saw is the easiest, simplest and quickest machine in changing from one operation to another.

Swinging Routing and Jig Saw Arm Out of Position

Although it is never necessary to remove the router, drill and jig saw head from the TrimO saw, it is sometimes desirable to swing it out of position; about the only time this is so is when a very large amount of sawing and trimming is to be done. You will find on the front flange of the head at the rear of the table a large knurled screw and a small dowel pin. The purpose of these is to both hold the head firmly to the base of the machine and to line it up correctly to insure accurate jig sawing and routing. These, therefore, must always be tightly in place. Before swinging head be sure to slip belt on right hand side off of top pulley.

When the circular saw belt is not being used, it should be slipped off the main pulley and let hang loose outside of the main pulley. When the drill belt is not being used it should be slipped off, and allowed to "ride" on the hub between the drill and circular saw belt pulleys. The jig saw belt, when not being used, can be slipped off and allowed to ride on the motor shaft.

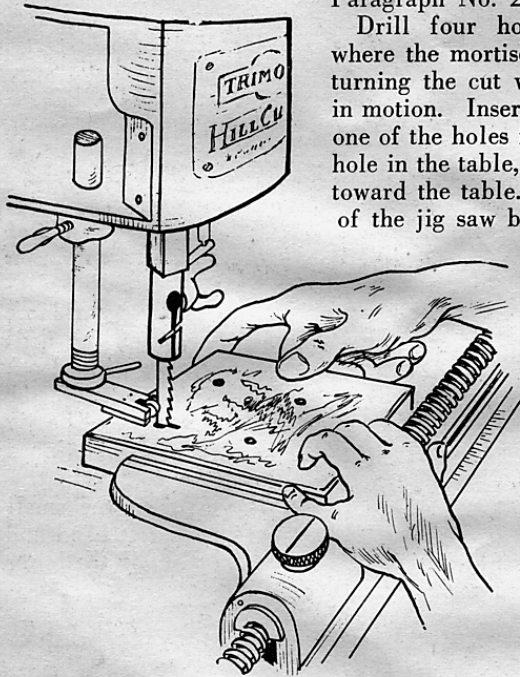
By placing the jig saw belt on the small drive pulley holding it with the left hand and putting the belt as far as possible on the lower jig saw pulley with the right hand and continuing to guide it,



Jig Sawing Making Inside Mortises, Etc.

On A-3 Model

Paragraph No. 21.



Drill four holes, one in each corner where the mortise is desired. This permits turning the cut while the jig saw blade is in motion. Insert the jig saw blade through one of the holes in the cut, and through the hole in the table, with the teeth facing down toward the table. Then slip the lower end of the jig saw blade into the lower jig bar

and tighten the lower wing nut. Now, raise the lower jig bar by turning the motor pulley with left hand until the jig saw blade is at its highest point. Now press down the upper jig bar with palm of right hand until you can slip the upper end of the jig saw blade into the slot, then tighten upper wing nut. Now place the jig saw foot with roller guide in position on top of the

work. It will hold work firmly to table preventing jumping and chattering and relieve you of the necessity of pressing downward with both hands, as is necessary with other types of machines, instead the hands can be employed exclusively in guiding the work into the saw. The lower part of the jig saw foot should rest firmly on the cut, but not so tightly as to prevent the cut sliding under it easily. Now push the foot forward so the jig saw blade fits into the groove of the roller. Care should be exercised to make sure that the jig saw blade has not been pushed forward by the foot nor forced to one side. The jig saw blade to operate properly must not be cramped in any way, but instead must be at right angles to the table and operate smoothly and easily in the roller guide and it will do so if the foot is properly placed. This roller prevents the jig saw blade from moving to either side or backing away from the work and insures that the blade will cut straight. Be sure that the foot as well as the bar which carries it is properly tightened before turning on power. A small plunger air pump is incorporated in the front of the TrimO saw head and a copper tube leads from it. This tube is directed at the jig saw blade and the air will keep lines on work visible while jig sawing.

Several conditions may cause jig saw to break: One of these is insufficient tension. Blades must be taut, but yet not too much so. The

simplest test for tensioning is to operate the jig saw idle and if the blade maintains a straight vertical position and does not whip, you know it is tight and taut. A series of drilled holes in the top of the upper jig saw bar provides (in connection with slip pin and washer which hold spring in place) the necessary means for tensioning. When machines leave here the pin is usually in the first or second hole at the top. After jig saw has been operated a while, it will be advisable to drop this pin one hole. Crowding a blade too much will, of course, cause breakage, as will also be the result if the blade is not held in line properly by the jig saw foot.

Keeping the jig saw foot down on the work so as to prevent work from jumping will also reduce saw breakages.

The two small screws, one at each end of the wood jig saw connecting rod should be kept fairly tight, but not so tight as to cause excessive friction.

Use of Gauges in Jig Sawing

Paragraph No. 22.

The TrimO saw is, so far as we know, the only machine which will jig saw an absolutely straight line. This, of course, requires the use of micrometer gauge or our special any angle gauge which is furnished as an extra and employed in connection with large work, such as steel rule dies for paper box and carton work. By use of micrometer gauge and finger, you can make either inside or outside mortises so accurately that anything you have to insert in mortises will fit tightly and without broaching.

Inside Mortises in Solid Type High Stereotype On A-3 Model

Paragraph No. 23.

The TrimO saw is the only Saw Trimmer we know of with which it is entirely practical to make inside mortises in solid type high stereotype. The procedure is as per paragraph No. 21 except that for this work our patented Stereo Jig Saw Blade should be employed. This blade has rounded gullets and is beveled from front to back. This construction prevents metal from filling the teeth gullets and adhering to sides of blade. On this class of work it will be found that a little oil placed along the line of the saw cut will materially reduce friction of saw passing through work. This special stereo blade is not furnished regularly with the A-3 unless we are advised in advance that it is wanted instead of the regular blade for other general work.

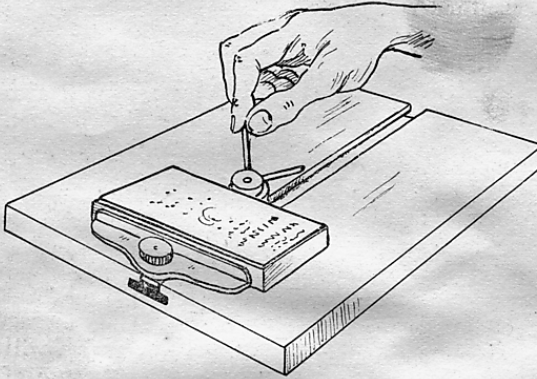
Broaching an Inside Mortise On A-3 Model

Paragraph No. 24.

When it is desired to true up an inside mortise, or to make it a trifle larger so the type may be inserted, the broach, (sometimes called rasp or file) should be inserted the same as a jig saw with the cutting teeth facing down. However, the roller guide on the jig saw foot DOES NOT work against this broach. The foot, however, should be placed on the cut, as this will hold the cut tightly on the table, and avoid damage to cut. The broach is made of highly tempered tool steel and will last for a long time if carefully used, but it must not be over-loaded.

Locking Cuts on Router Plate

On A-3 Model



Paragraph No. 25.

Lock the stop casting tightly near one end of router plate by use of small steel pin which fits into holes in knurled locking screw. This stop must be sufficiently tight to prevent its movement. Place cut or plate squarely against the stop and move the locking device up to the cut. By

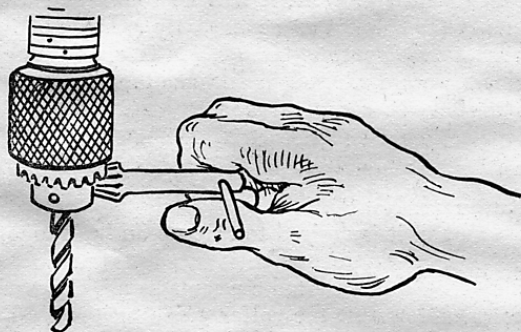
turning the top lever, you tighten the locking device in place on the router plate. Now turn the lower which is the longer lever, as far as it will go. This lower member is an eccentric and as you will see its sharp beveled edge cuts into the side of the cut, performing two functions, i. e., holding the cut tightly in place and at the same time forcing it down squarely on the router plate. It is of course, necessary that the router plate be kept clean at all times and that any work locked on it be held down tightly while locking.

To Insert Router, Drill, and Type High Planer Tool

On A-3 Model

Paragraph No. 26.

The Drill Spindle is built on the principle of a high grade machine shop drill press. One of the important things about this feature of the TrimO saw is that it must be kept well oiled. Open the chuck as far as possible, and insert the tool to be used as far as it will go. Then lock the chuck tightly with the drill chuck wrench.



Setting of Router Spindle On A-3 Model

Paragraph No. 27.

An adjustable stop consisting of a stationary vertical screw and forming a part of the drill spindle head with two knurled nuts on the screw below the spindle stop pin and a single nut above the stop pin provide a means for obtaining any desired adjustment in the position of any router or drill, or the type high planer.

ROUTING:

For routing, first find the desired position of the cutting point of the router. This can be done quickly by pressing with right foot on the foot treadle and at the same time spinning the two lower adjusting nuts up to the router stop pin. When the exact position of router cutting point is determined, these two nuts can be locked together by holding one and tightening the other against it. The single upper nut should not be used in routing. With your right foot on the foot treadle, the router spindle can be raised and lowered when required.

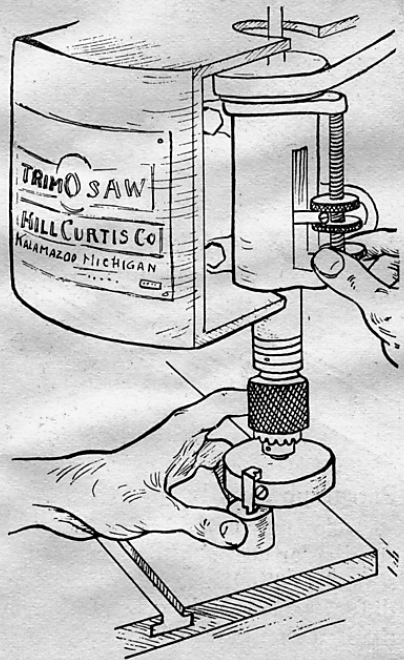
DRILLING: For ordinary drilling it is unnecessary to use these nuts.

Planing Cuts to Type High On A-3 Model

Paragraph No. 28.

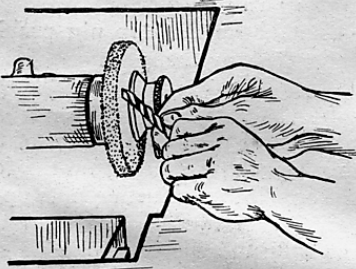
For setting the Type High Planer Tool, place the router plate on the table, and the type high gauge, which is marked .918" on top of the router plate with the full flat end up. Insert the type high planer tool, and lower same until the cutting point just touches the type high gauge, and with foot holding the cutter at correct position, bring the top nut down on stop pin and tighten firmly. Then bring up the lower two knurled adjusting nuts. This will hold the tool in position. Correct setting is largely a matter of "feel". Gauge should be easily moved sideways, but allow no up and down motion. After the type high planer tool is once set any number of cuts can be planed to type high. Push the router plate and work forward easily under planer, beginning at left hand side having made sure the table is clean, and that door is flush with table.

This operation can be performed just as accurately on the TrimO saw, as with a single purpose type high machine, and whether wood blocks or solid Stereotype metal.



Sharpening of Routers, Drills and Type High Planer Cutter

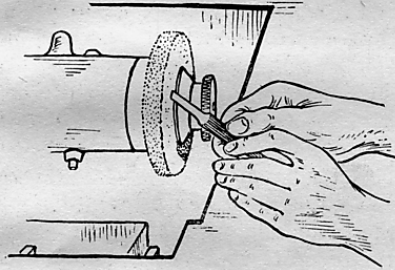
On A-3 Model



their sides, and of course, to correct angle so that they will present a beveled cutting edge to the work. The knack of holding at correct angle to the side of wheel and of turning the tool so as to keep the angle uniform in its sweep comes only with experience. It is, however, wise to keep a set of new tools as received with machine for guidance in grinding.

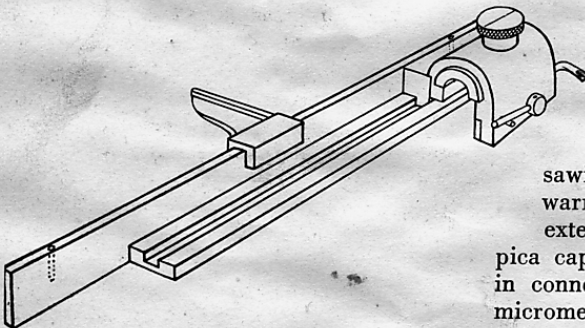
Paragraph No. 29.

The flat grinding wheel furnished with the machine is used for sharpening these tools. Never use either the forming or saucer wheels intended for sharpening saw blades, for this operation. Cutting tools mentioned above must never be ground except on their ends or faces, i. e., not on



Extension Gauge

On A-3, A-1, J-10 (Junior) Models



Paragraph No. 30.

We are prepared to furnish as an extra to those who find they have sufficient sawing of long rule to warrant the investment an extension gauge of 160 pica capacity which operates in connection with the main micrometer gauge.

Paragraph No. 31.

No cut for 160 pica Extension Gauge which we are prepared to supply for use with the Ben Franklin is shown. In principal, this Extension Gauge is the same as that here shown for other models. It naturally differs somewhat in construction in order to properly fit and work with the Ben Franklin main gauge.

Special Gauges

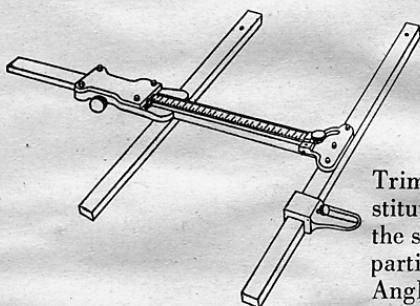
Particularly adapted for steel rule die and other special works
Paragraph No. 32.

The "A" model TrimO saw is particularly adapted to the quick and accurate production of wood base steel rule dies for box and carton manufacturers and is found in a large number of such plants. Demand has naturally arisen for machines which although basically like the A-3 model differ therefrom in certain respects more especially as to the replacement of fixtures intended only for printers use with other fixtures, usually gauges adapted to die making and other special purposes. We make several variations of the A-3 model, some of them including all standard A-3 equipment, and in addition certain special features for steel rule die work, as well as supplying this model as a jig saw and drilling machine only without circular saw or any table equipment. In other words there is a wide variety of choice as to equipment depending on the purpose or purposes for which the machine will be used.

The throat opening on the standard A-3 TrimO saw is 15 $\frac{5}{8}$ " from jig saw to inside of arm, while the A-31 model TrimO saw, which is the same as the A-3 except that it has greater throat opening, the distance from jig saw blade to inside of arm being 24".

In certain plants all regular A-3 equipment for the printing department is needed and in addition certain specials for box making. Many A-3's are serving good sized paper box or carton manufacturers in this double capacity.

Any Angle Gauge



Paragraph No. 33.

The Any Angle Gauge here shown and which has a capacity of 86 picas or 14 $\frac{1}{3}$ " from left hand side of saw was supplied as standard equipment with the A-3 TrimO saw until late 1924 when we substituted for it the type-high planer and the saw grinding and truing device. The particular purpose and value of the Any Angle Gauge is in the squaring of the larger electros and plates, and this

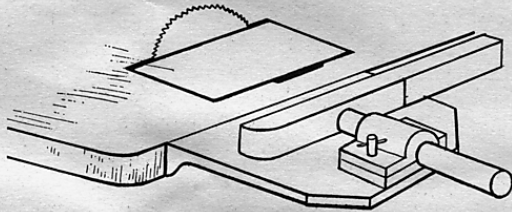
Gauge will be found valuable in any shop where a considerable number of large size plates are handled. By its use a plate out of square with its subject can quickly be squared. It comes in handy in making reglets, etc. and can be had as an extra for any A-3 in use.

Right Hand Ripping Gauge

Paragraph No. 34.

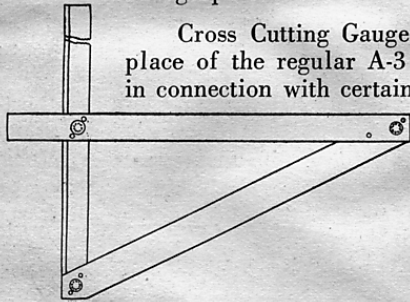
To provide space for and a means of ripping wood base for steel rule die work, etc., at the right hand side of the circular saw we are prepared to furnish (as an extra) an extension table to go on to the right

hand side of "A" model main table, it carries an adjustable ripping gauge or fence, maximum capacity between which and the circular saw blade is 12 $\frac{1}{2}$ ". While this can be attached to the TrimO saw in your plant a machinist should be called in to do the work. It is therefore desirable to order this gauge with the machine and have it put in place at the factory. When not wanted the fence can be readily removed by means of one screw, or complete unit can be removed from main table by means of two screws.



Cross Cutting Gauge

Paragraph No. 35.



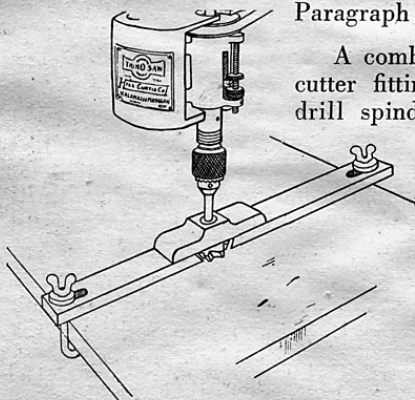
Cross Cutting Gauge shown by cut is made to take the place of the regular A-3 micrometer 86 pica capacity gauge in connection with certain

classes of block cutting, for example: where blocks are sawn to marked lines, or where close work is not important or where the work holder clamp is not needed. This cross cut gauge can be had with scale graduated to either printers measure or in

inches by $\frac{1}{8}$ ". This Gauge is an extra and can be supplied for any "A" Model Machine at any time.

Beveling Plates.

Paragraph No. 36.



A combination of a cutter tool and bar the cutter fitting into and being operated by the drill spindle chuck, the bar clamping to the table and intended of course for cutting bevels on unmounted plates for use with patent base, can be had as an extra for the A-3 TrimO saw. For shops which have beveling to do from time to time this device will be found just as satisfactory as a single purpose beveling machine.

When ordering always send sample of beveled plate so that we can make the cutter to proper angle.

General Adjustments and Take Ups

Paragraph No. 37.

"A" MODEL MOTOR MOUNTING. The motor on any "A" model TrimO saw is connected to the main drive shaft through a leather disc type flexible coupling. The motor is held by cap screws to shelf or plate which is a separate casting from the bracket on which it rests. The motor plate is supported by three large hollow screws in bracket through which pass three smaller screws. The purpose of the larger screws is to adjust the plate and, therefore, the motor to exact level and alignment of motor shaft with main drive shaft, while the smaller screws passing through them when tightened hold the plate firmly in place. These larger screws should be adjusted only when the smaller ones are loose. When motors are mounted at the Factory they are lined up with drive shaft and will never need realigning. Where TrimOsaws are shipped without motor care should be taken in mounting to see that the motor base plate or shelf is set at the proper height and made level by means of large hollow screws above referred to. When adjusting for correct height and level, work from the main table of the machine, be sure that outside diameters of half couplings on motor and main shaft also faces of coupling line up true. Then with motor on plate locate holes through motor feet and drill with 17/64" drill, tapping for 5/16" U. S. S. cap screws. Tighten motor firmly to plate using flat washers under screw heads.

MOTOR MOUNTING ON JR. TRIMOSAW. On the Junior or "J-10" model the motor is mounted on a plate attached to column of machine. Where motors are mounted outside of the factory the motor pulley should be lined up with the saw arbor pulley by means of a straight edge. Then proceed to locate, drill, and tap holes as for "A" model.

MOTOR MOUNTING ON BEN FRANKLIN TRIMOSAW. The motor on the Ben Franklin model is mounted on an adjustable swinging counterbalancing plate which in turn is hinged to a bracket. On this model the motor moves every time the saw position is changed and the mounting construction is so arranged that just the right belt tension can be had at all times. When the belt stretches as it will after some service remove pin on which plate hinges and place it in next lower hole. When motors are mounted outside of the factory lining up of motor pulley with saw arbor pulley will be by means of straight edge. It is well to clamp the motor in what you believe is the right spot on the plate and operate it with the belt on the saw arbor determining by the travel of belt that it is traveling straight in the "V" pulleys before drilling holes.

USE AND CARE OF BELTS. We go to considerable extra expense and cost to build TrimOsaws with "V" type pulleys and belts. This type of drive was finally decided on only after exhaustive tests of all other shapes and forms of belts, more particularly flat and round. These tests were carried on not only to determine the best shape or form of belt but also the best kind of belt, ability to transmit power, strength, flexibility, freedom from slipping and upkeep, and long service being the main considerations.

You have on your TrimO saw the very best possible type and quality of belt drive. Do not under any consideration procure belts from any source other than ourselves if you want the maximum service from the

TrimOsaW or in fact from the belts themselves. One characteristic of the "V" belt (which all users should keep in mind) is that the greater the load on it the more it will pull until it is worn out. This will be clear when we state that these belts seat and work on the inside beveled faces of pulleys only and not on the bottom of pulley groove. The "V" belt is practically a wedge, its sides only coming in contact with the beveled face of pulley. It therefore, cannot slip until it has worn so that it rides on the bottom of the pulley groove when it should be replaced. This does not mean that as belts stretch they cannot be taken up. It is possible on all the $\frac{1}{2}$ " sizes to cut off pieces and bring belts back to proper length. The circular saw drive belt tensioning device incorporates a ball bearing tightener pulley which is adjustable to take up slack. This particular belt, which is endless and of the lug type, should never be allowed to run so loose that it will strike the door.

Keep oil away from these belts.

END PLAY IN MAIN SHAFT. If after long use end play develops in the main shaft of the A-3 model, it can readily be taken up by loosening the hollow set screw which holds the combination half coupling and jig pulley and holding the circular saw and drill pulleys on the other end of shaft, push the small pulley which you have just loosened further on to the shaft and again tighten the set screw.

PLAY IN LOWER JIG SAW PULLEY. On the right hand end of the crank shaft where it passes through the pedestal you will find a set collar, end play in this bearing can be taken up by loosening set screw and pushing the collar slightly further and on to shaft and again tighten set screw.

WORK HOLDER CLAMP. The work holder clamp like all other parts of the TrimOsaW carries a five year guarantee and we have never been called on to replace a single one. If after long years of service the clamp should wear and develop a tendency to fan or "pull in" we suggest that you write us and we will send instructions as to how to readily remedy this condition.

END PLAY BETWEEN THE HALF BRASS NUT which forms part of the work holder finger on the A-3 and Junior models is not likely to result even after ten years or more of service. Should it develop simply remove finger and on a table or flat surface (with the nut pulled up to its high point in the finger) hold with left hand and peen surface of ends of brass nut where they extend through and up along side of the finger body. Do this work with a light ball hammer or other light weight rounded end instrument and strike about twenty-five light blows on each end, testing the fit from time to time and you will have taken up this wear and the finger will be as good as new.

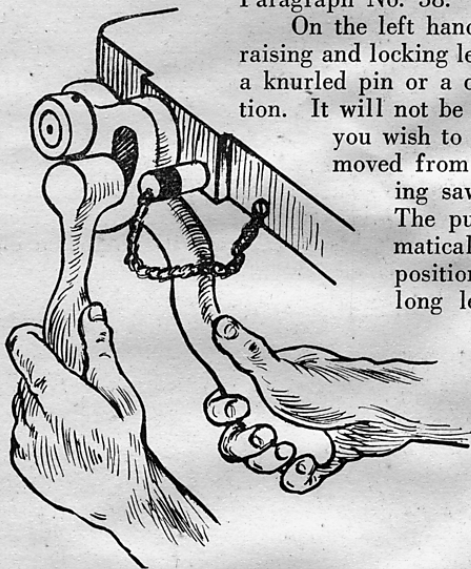
TO TIGHTEN DRILL CHUCK. Should the drill chuck come loose from the spindle, the way to correct this is as follows: Clean the spindle projection which enters the chuck carefully and be sure it is smooth all around and has no burrs. Clean the socket of the chuck carefully. Screw the jaws of the chuck up as far as they will go into the chuck body. Now place chuck on spindle with nuts on adjusting screw to the side of router head at extreme top and bottom positions. Put two

or three blocks or plates on the table under the chuck. Bring chuck down until it strikes these wood blocks. Take hammer and a piece of hardwood and with the latter placed on top of the drill spindle strike it four or five quick blows with the hammer. Naturally these blows must not be too heavy, that is why we suggest that you do not use heavier than the average weight hammer.

Raising and Lowering Saw

On Ben Franklin TrimO Saw

Paragraph No. 38.



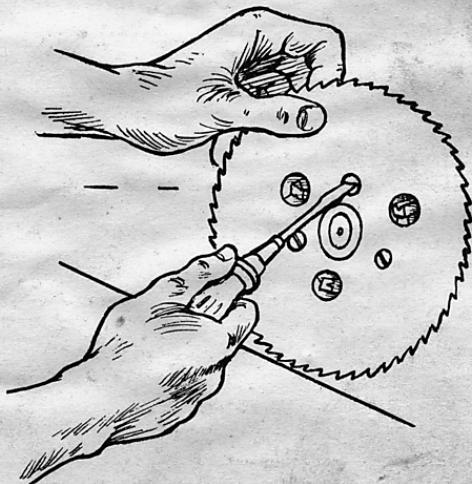
On the left hand side of the table, where the raising and locking levers are located, you will find a knurled pin or a chain. Keep this pin in position. It will not be necessary to remove it, unless you wish to raise the saw so it can be removed from the arbor, or when sharpening saw blades on the saw grinder. The purpose of this pin is to automatically stop the saw in correct position for trimming. Raise the long lever until it strikes the pin, and lock the small lever, and your machine will be in trimming position. When it is desired to lower the saw, so plates, etc. can be cut push down on long lever until the door is flush with the table, then lock with short lever.

Removing Saws and Saw Heads

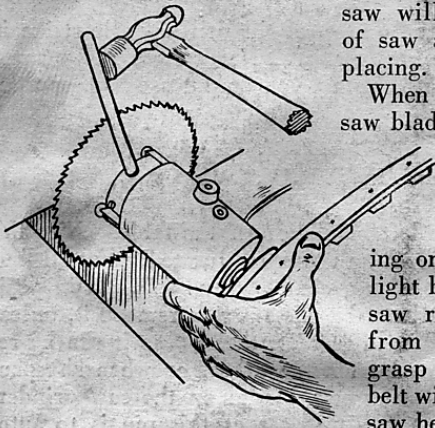
On Ben Franklin TrimO Saw

Paragraph No. 39.

One saw head, and two saw blades are furnished as standard equipment with the Ben Franklin TrimO Saw, and when it is required to put on a sharp saw, remove the knurled pin mentioned in paragraph No. 38, and raise the saw up until it clears the table. Remove the three small screws which hold the blade on the head. In replacing saw blade on head do not give the final tightening to any one screw ahead of the others, instead screw in each screw a little at a time until each requires only the final



short twist to tighten firmly. If screws are not brought down together the saw will "wobble". Always clean back of saw and face of saw head before replacing.



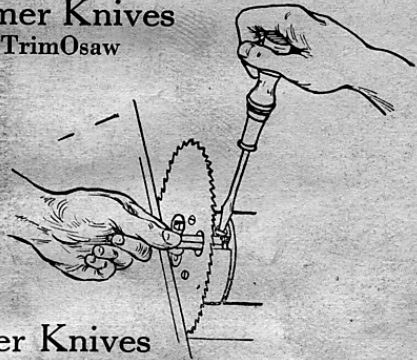
When it is desired to take off both the saw blade and the saw head from the Ben Franklin TrimO saw, place the $\frac{1}{4}$ "x6" pin in the hole of the saw collar, and with a light hammer such as used for tacking on plates, tap the pin two or three light blows in the same direction as the saw rotates. To hold the saw arbor from turning while tapping the pin, grasp the saw arbor pulley and drive belt with left hand. This will loosen the saw head. Raise saw up so it will clear the table. The saw will now come off.

Removing Trimmer Knives

On Ben Franklin TrimO saw

Paragraph No. 40.

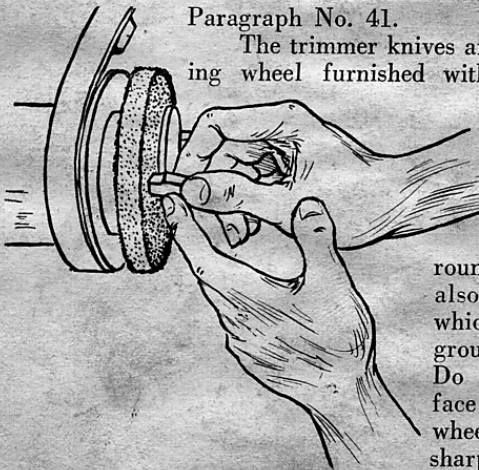
The trimmer knives on the Ben Franklin TrimO saw are held in position by small screws. To remove these knives for sharpening or for setting, loosen, but do not take out screws. The trimmer knives can now be pushed or pulled endwise and out of head.



To Sharpen Trimmer Knives

On Ben Franklin TrimO saw

Paragraph No. 41.



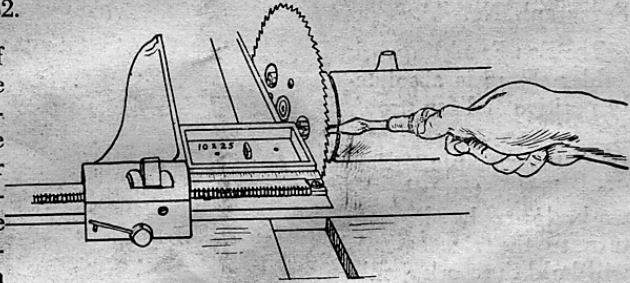
The trimmer knives are sharpened on the flat grinding wheel furnished with the TrimO saw. Hold the beveled end of the trimmer knives against side of grinding wheel, exerting only a little pressure and giving a slight up and down movement so as to maintain the rounded end. Try to maintain also the same degree of bevel to which the knives were originally ground when they were received. Do not touch the flat or front face of the knives to the grinding wheel as this is not necessary, sharpening should be done on the end only.

To Set the Trimmer Knives

On Ben Franklin TrimO saw

Paragraph No. 42.

Place a piece of iron furniture (must be accurate) in the gauge setting the finger at the same measurement as the length of the furniture. Then

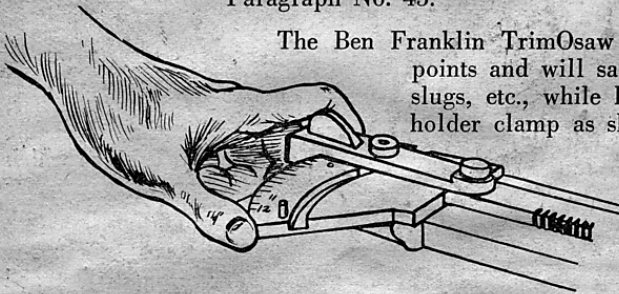


move the gauge forward until you are in a line with the forward trimmer knife. Set the trimmer knives so they just touch the furniture and lock each knife firmly in place. Trimmers should trim about $\frac{3}{4}$ of a point. Do not have the trimmer points extend so they will trim more than this, it being unnecessary. If preferred, slightly less than $\frac{3}{4}$ of a point will give good results.

Setting by Point Adjustment

On Ben Franklin TrimO saw

Paragraph No. 43.



The Ben Franklin TrimO saw is graduated to points and will saw and trim rules, slugs, etc., while held by the work holder clamp as short as two picas and up to sixty picas. The Point Adjustment Quadrant is located on the left hand end of the

Gauge. This quadrant is graduated in point adjustments from one up to twelve. The lever should always be at zero when even picas are to be cut.

The numeral nearest the lever on side toward you represents the number of points to which finger is set in addition to picas shown by scale.

THE OPERATIONS BELOW NAMED are performed on the Ben Franklin just as they are on the other models. Please refer to paragraphs indicated opposite these operations.

Making an Outside Mortise. See paragraph 14.

Making an Inside Mortise. See paragraph 11.

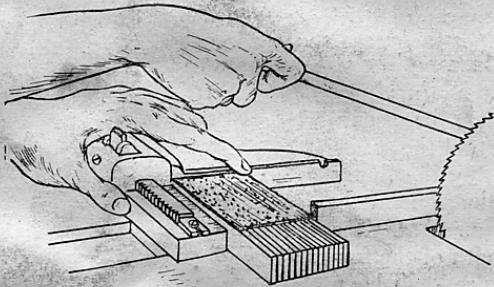
Cutting Down Quaded End of Slugs. See paragraph 9.

Operating the Work Holder Clamp

On Ben Franklin TrimO Saw

Paragraph No. 44.

The Ben Franklin work holder clamp is absolutely positive and fan proof. It works on the pawl and ratchet principle. Pull the clamp toward the work, lower handle and turn to the right. This will hold the work firmly in place. To unlock the clamp, turn the handle to the left and push handle back as far as it will go. Best results are obtained from this clamp when about $\frac{3}{8}$ " of threads are above the brass screw block and toward the operator.



After becoming accustomed to the use of this clamp, and the correct positions of pawl, screw block and handle you can tighten work with $\frac{1}{4}$ turn of handle.

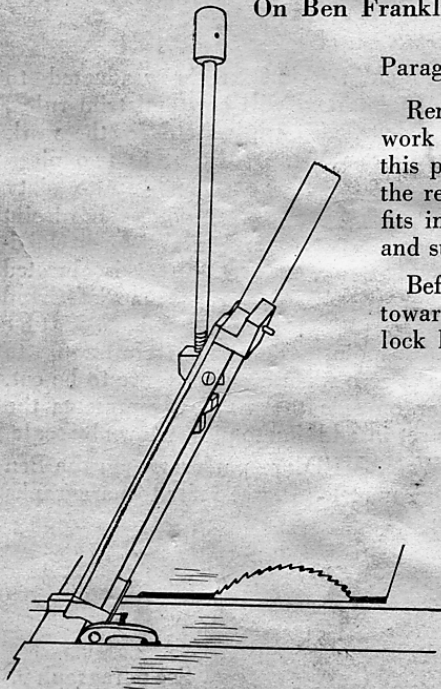
Raising Clamp to Saw Large Plates

On Ben Franklin TrimO Saw

Paragraph No. 45.

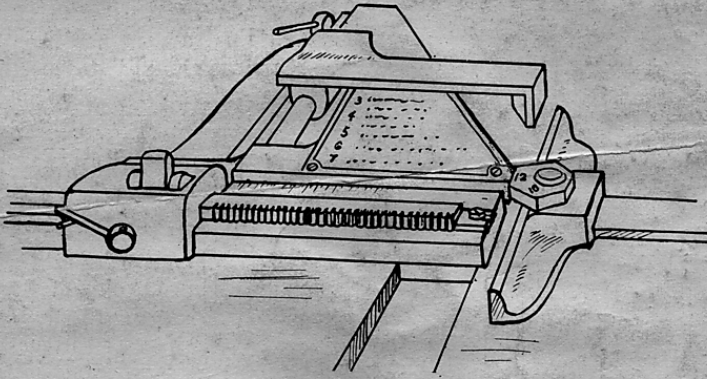
Remove the screw which holds the work holder clamp to the gauge bar, this permits the clamp to be raised. At the rear end of clamp is a hinge which fits in small hole at rear of gauge bar and supports clamp in upright position.

Before raising clamp pull clamp bar towards you as far as possible and lock by turning handle to right.



Mitering

On Ben Franklin TrimO saw



Paragraph No. 46.

Eight six point rules (or equivalent) can be mitered at one time on the Ben Franklin. Perfect miters can be made, but sharp tools should be used.

- (1) Saw and trim rule to desired length.
- (2) Set gauge finger at exactly 33 picas.
- (3) Place miter vise in position.
- (4) Turn hexagon dial on batter until side marked with numeral, same as thickness of rule, projects beyond the face of batter gauge.
- (5) Push batter gauge towards vise until dial touches end of vise.
- (6) Lock batter gauge in place, pull carriage back just enough to permit turning dial back to 0.
- (7) Place rules in vise, bring each into contact with batter, lock clamp and miter.

This will give you a left hand miter.

For right hand miter turn the rules face downward in the vise bringing each rule in contact with the face of the batter, lock clamp and miter.

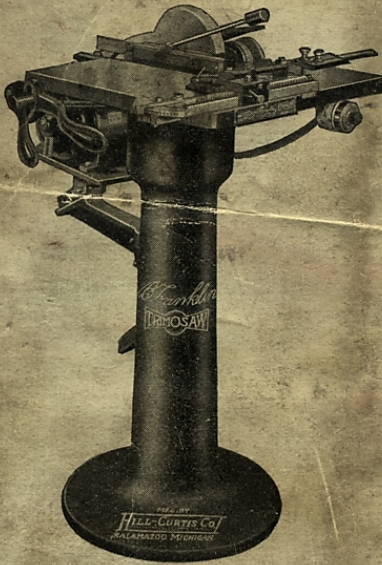
Grinding Saws

On Ben Franklin TrimO saw

Paragraph No. 47.

While a saw grinding and truing device is not furnished with the Ben Franklin as standard equipment, it can be had as an extra at any time. Instructions for its operation are the same as those given under paragraph No. 4. The Ben Franklin saw blades are of the swaged tooth type, and after the saw blades have been sharpened four or five times it will be necessary to reswage. To do this, place the saw blade in a vise, and with a light hammer and the swage tool, which is furnished with the TrimO saw, strike each tooth until it is about 6 points wide. The saw should be swaged before sharpening.

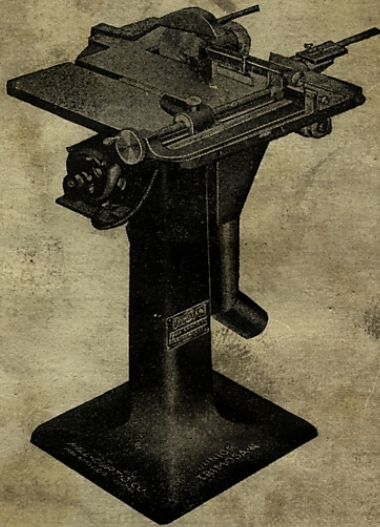
BEN FRANKLIN



The Ben Franklin is our latest addition to the Trim-Osaw line, and it has been designed primarily to meet the requirements of the smaller office where a larger investment required to provide either an "A" or Junior TrimOsaw may not be justified. The table measures 20x19". The work holder gauge has a capacity of 60 picas graduated to half points. The base of the machine forms a non-clogging chip pipe. The "Quick as a Wink" raising and lowering saw feature is provided. Motor is $\frac{1}{4}$ H. P.

JUNIOR TRIMOSAW

The Junior Model is an ideal machine for the plant using a large number of plates. The table measures 22x24", and is only slightly smaller than our "A" model, which is 28x28". The micrometer work holder gauge capacity is 12 point to 60 picas graduated to half points. The Junior is furnished with "Hard" Metal Saws, Saw Grinding and Truing Device, and with Right and Left Hand Miter Vises. Motor is $\frac{1}{2}$ H. P.



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