OPERATING INSTRUCTIONS AND PARTS LIST FOR

SHAPER

Model Number 103.23920

This is the model number of your Shaper. It will be found on a plate on the belt guard. Always mention this model number when communicating with us regarding your Shaper or when ordering parts.

Instructions for Ordering Parts

All parts listed herein must be ordered through a Sears retail store or mail order house. Parts are shipped prepaid. When ordering repair parts, always give the following information:

1. The Part Number.
2. The Part Name.
3. The Model Number 103.23920.

This list is valuable. It will assure your being able to obtain proper parts service. We suggest you keep it with other valuable papers.

SEARS, ROEBUCK and CO.

LITHOGRAPHED IN U. S. A.

SOURCE FORM 39929

OPERATING INSTRUCTIONS AND PARTS LIST FOR SHAPER MODEL NO. 103.23920

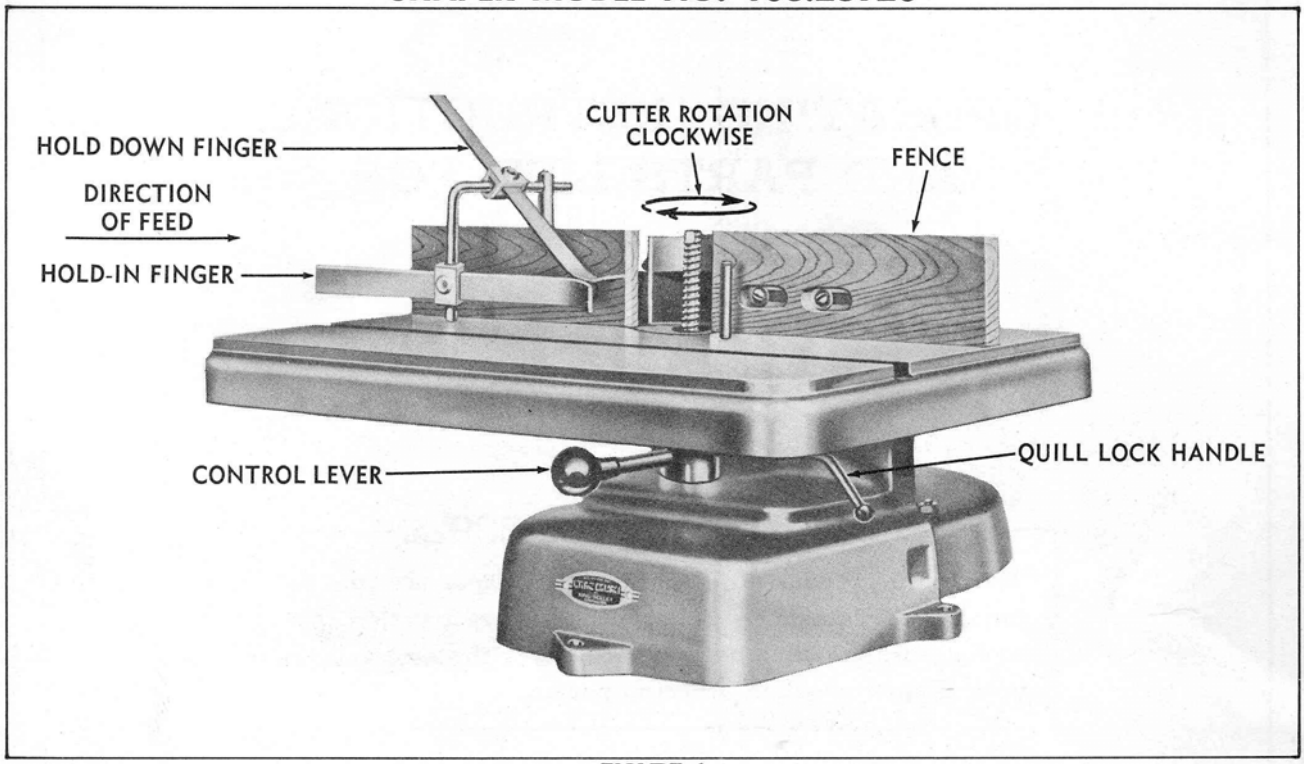

FIGURE 1

You are now the owner of a wood shaper which embodies the latest design, precision machining and very careful inspection. It is a tool which will produce top quality work, and by using cutters of various shapes and other accessories, we are sure you will find this shaper one of the most useful tools in your shop.

To prevent damage or loss in shipment some of the parts were disassembled from the tool. These parts are listed below. Be sure they are all accounted for before discarding any of the packing materials.

1. Illustration No. 23, Belt Guard.
2. Illustration No. 16, Motor Pulley.
3. Illustration No. 17, V-Belt.
4. Bag of miscellaneous small parts contains:
   - Illustration No. 20, (4) Motor Mount Bolts.
   - Illustration No. 21, (8) Motor Mount Washers.
   - Illustration No. 22, (4) Motor Mount Nuts.
   - Illustration No. 32, Guide Post.
   - Illustration No. 41, (2) Holding Fingers.
   - Illustration No. 42, Holding Bar with set screw, No. 43.
   - Illustration No. 44, (2) Holding Brackets with set screws, No. 43.
   - Illustration No. 45, Holding Arm.
   - Illustration No. 52, 1/8 Allen Wrench.
   - Illustration No. 53, 5/32 Allen Wrench.
   - Illustration No. 54, Spindle Nut Wrench.
   - Illustration No. 48, (4) Fence Frame Set Screw.

INSTALLATION:

There are three 7/16 diameter holes provided in the base of the shaper by which the tool should be fastened securely with screws or bolts to a well-built work bench.

We suggest that the bench be high enough so that the top of the shaper table will be waist high or slightly above. The back of the shaper base should be flush with the edge of the bench.

The Motor Mount should be installed as shown in Fig. 2.

1. Loosen two set screws, No. 13 (see Fig. 3) and remove motor mount, No. 19 and motor mount bars, No. 18, assembly from base.
2. Bolt your motor to the flat surface of motor mount with four bolts No. 20, washers No. 21, and nuts No. 22. Tighten the bolts lightly to allow for final adjustment.
3. Assemble the mounted motor to shaper as shown.
4. Secure pulley No. 16 to motor shaft with closed end up. Place the belt in position and tighten by pulling mounted motor away from shaper base.
5. Locate the control lever in mid-position directly over front mounting hole in base and secure with quill lock handle. Adjust motor and motor pulley so that belt runs in center of motor pulley and parallel with table top. Tighten motor mounting bolts and pulley set screw securely.

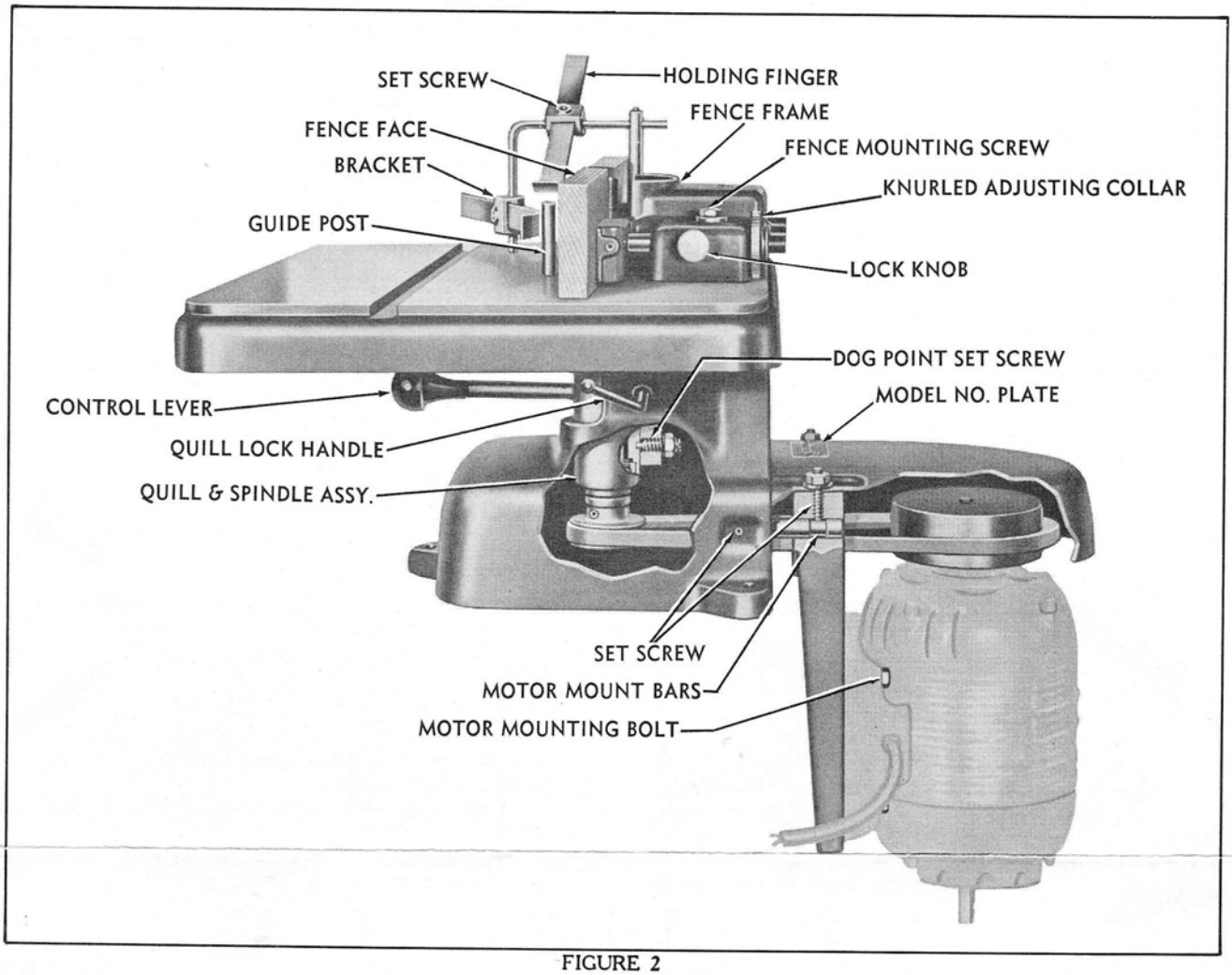

FIGURE 2

6. Tension the belt just tight enough to prevent slippage and secure by tightening two set screws No. 13.

7. Place belt guard in position as shown by attaching to motor mount. Using the two nuts, No. 26 and washers, No. 25 removed from the two screws, No. 24, secure the guard in place.

The Fence Assembly should be mounted flush with back edge of table as shown in Fig. 2 and make necessary adjustments in the fence faces to allow for your cutter.

NOTE: If motor turns spindle in the direction as shown in Fig. 1, mount cutters with cutting edge leading in direction of rotation; if in the opposite direction, place holding fingers on opposite side, reverse the cutters, and direction of feed.

For straight work use fence assembly, and for irregular shapes, use the guide post No. 32 inserted in either one of the two threaded holes. **Check before operation!**

MOTOR:

For general use a ½ horsepower, 3450 R.P.M. motor is recommended.

SPEED:

The motor pulley, used with recommended motor, provides a spindle speed of approximately 9000 R.P.M. which is suitable for smooth cutting.

LUBRICATION:

The ball bearings used on the cutter spindle have been packed with lubricant and sealed at the factory requiring no further attention.

To maintain smooth and easy operation of the controls, occasionally add a few drops of oil to the outside of quill. Also, wipe table top surface occasionally with an oily rag to prevent rust.

CONTROLS:

The control lever moves the spindle ⅞ inch to position the cutter.

The quill lock handle is used to lock the spindle and quill assembly at the desired height.

Caution; Always release lock before positioning the quill and tighten securely before starting operation.

Each fence face No. 49 may be moved forward or backward simply by releasing the lock knob No. 46 and turning the knurled adjusting collar No. 36. Each fence face operates independently of the other and of the fence frame by means of the simple micrometer-type adjusting mechanism. After the fence face position has been selected, it may be secured by tightening the lock knob.

The fence faces will close in from a 3 inch opening down to as little as one inch for small diameter cutters. Loosen the two screws No. 51 in the front of each face and slide the face to the desired position. The screws should be tightened securely after this setting.

NOTE: The opening should never be larger than is required to just clear the cutter.

The hold-down and hold-in fingers No. 41 are held tightly in position by a single socket head set screw No. 43 in the small bracket No. 44 for each. To change the angle, projection, or location of these fingers, loosen the socket head set screws with the Allen wrench No. 52 provided.

ADJUSTMENTS:

NOTE: After a few hours of operation tighten all pulley set screws.

If the **Quill Lock Handle** is not in a convenient position, remove handle and rotate quill lock, Item 14, 180 degrees. Reinsert and tighten lock handle.

The **Fence** must be parallel with the miter slot in the table if you intend using a miter gauge.

Adjustment, if necessary, may be made as follows:

1. Place fence faces in same plane by using a straightedge from one fence face to the other.
2. Loosen the two screws No. 40 holding fence frame to table.
3. Shift the complete fence assembly until both fence faces measure the same distance from the miter slot.
4. Re-tighten the two screws.
5. Check this adjustment by measuring again as previously explained.

OPERATION:

NOTE: This shaper is designed for use with ½" dia. bore cutters.

Mount the cutter on the spindle, follow with keyed washer No. 7, and lock securely with hex nut No. 8.

To lock, hold spindle with a wrench on the flat part of the spindle end and tighten hex nut with wrench No. 54.

Adjust the spindle height to cut the form to be shaped at the desired position on the work.

Cut the work-piece to size so that the shaping cut will be as light as possible to produce the desired pattern.

Set the fence faces so that the cutter projects far enough beyond them to allow the planned depth of cut. If the cut is to remove only a portion of the edge of the pieces, the two fence faces should be set even with each other.

If the cut removes material over the entire edge, thus reducing the width of the piece, the out-feed face must be set ahead of the in-feed face to provide a contact surface for the work after it passes the cutter.

Slide each fence face in as close as possible to the cutter.

Set the hold-down and hold-in fingers in proper position to press the work against the table and fence as it is fed toward the cutter.

Be certain that all units are securely locked in place at their proper settings.

It is a very good practice to make a trial cut on a piece of scrap wood as a double check on the set-up.

Feed against the rotation of the cutter with a smooth, even pressure. Experience will soon reveal the best rate of feed for the smoothest cut.

An unlimited variety of shapes may be produced with your shaper by changing the height of the cutter in relation to the work-piece, and by using various combinations of cutters on successive passes.

To make irregular shaping cuts, remove the fence assembly, select the collar that will position the cutter to obtain the desired pattern, and lock the collar and cutter on the spindle.

NOTE: The collar may be used either above, below, or between two cutters.

The guide post should be used as a pivot to support the work until it has been fed into the collar. Place it in either of the two threaded holes next to the table opening depending on the direction of rotation. Swing the work away from the pin after the cut is started.

A miter gauge attachment, available as an accessory, slides in the table slot, and should be used to hold the work when shaping ends of narrow stock.

In addition to the above, the following operations are some which can also be performed on your shaper:—shaping with a pattern, tongue and groove joints, reeding and fluting, planing, etc.

NOTE: See page 6 for set-up to cope sash rail ends.

SAFETY:

The keyed washer No. 7 should always be placed immediately beneath the hex nut No. 8.

Always use a push block rather than allowing the hands to get closer than 3 inches to the cutter on narrow cuts.

Be sure to stop the shaper when making adjustments, or when changing settings.

Do not wear dangling neck ties, loose baggy sleeves, etc., while operating power tools.

The guard is supplied with this shaper for your safety—make sure that it is properly mounted!

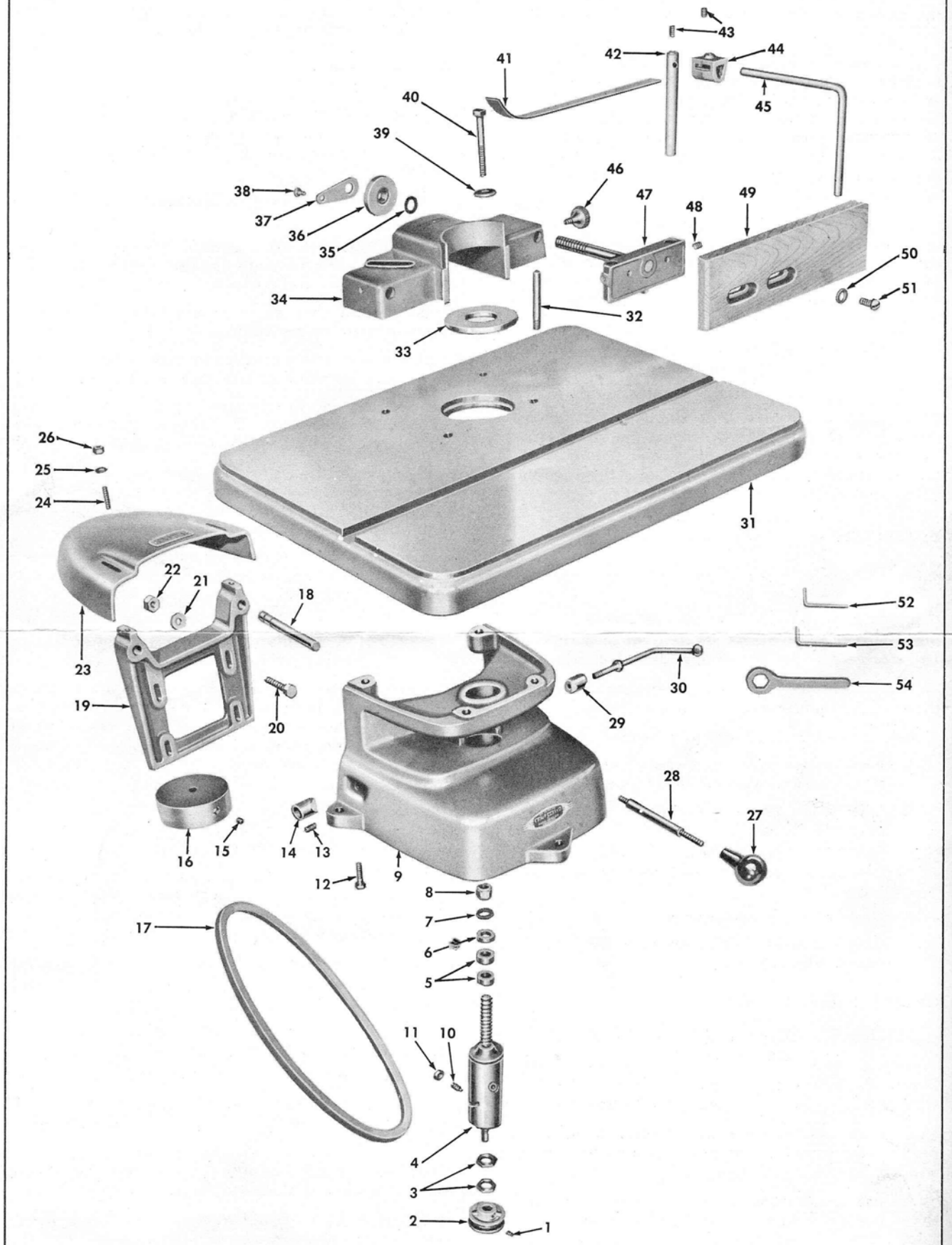
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FIGURE 3

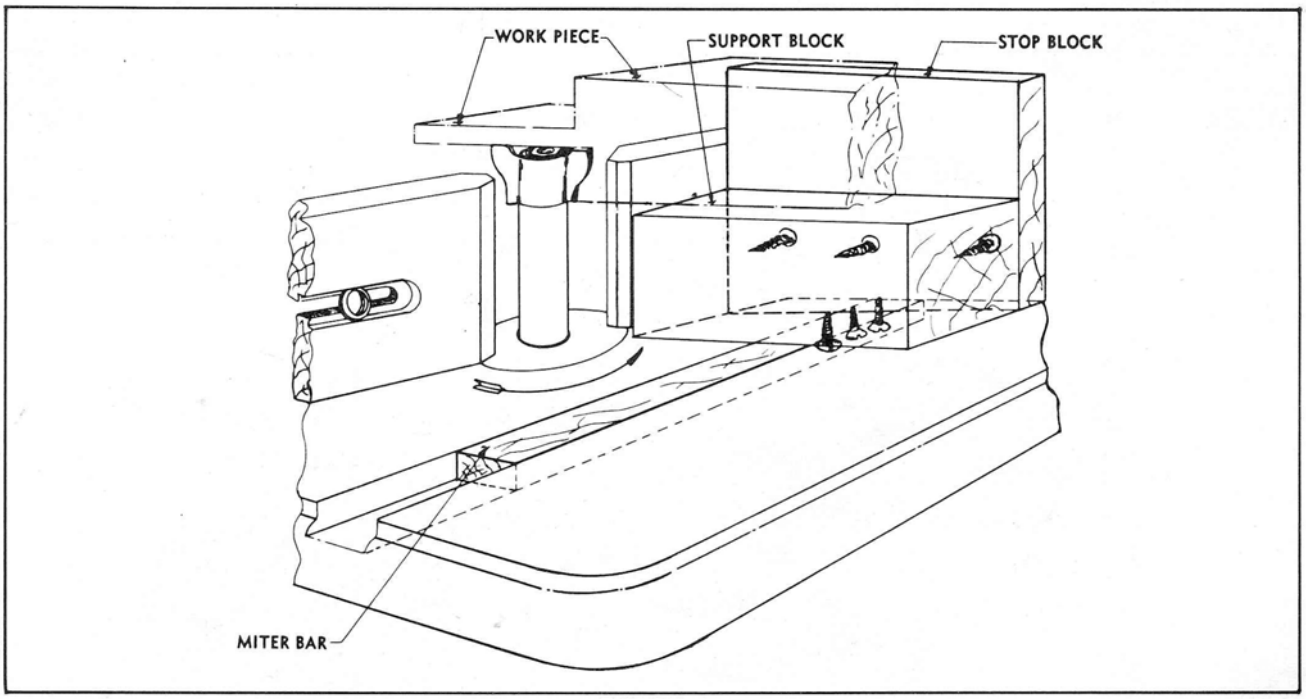

FIGURE 4

Fig 4 shows an inexpensive set-up to cope and tenon the rail ends of a window sash or door using a wooden jig for supporting the work.

This jig must be accurately constructed. Make sure that all surfaces are flat and square with one another. All pieces should be held together by at least 3 wood screws in each piece. The jig should be made to clear the cutter by 1/4 inch and should be high enough to bring the tenon of the work approximately 1/8 inch above the fence faces. The bar which slides in the miter slot should be made of hard wood, 3/8 inch thick, and should slide freely in the slot.

For accurate work make sure that:

1. The top and bottom surfaces of the support block are parallel.
2. The stop block is square with the top of the support block.
3. The stop block is also square with the miter bar or miter slot.

PARTS LIST

Illust. No.	Order By Part No.	PART NAME	Prepaid Selling Price Each
1	X-179	Set Screw 5/16-18x5/16 Soc. Head Cup Pt.	$ .10
2	18035-A	Tool Pulley with Set Screw—2 inch. Single Groove V-Pulley—1/2 inch Bore. Purchase from Your Nearest Sears Retail Store or Mail Order House. Ask for Catalog No. 9-2801—1/2 inch Bore.	—
3	39621	Hex Lock Nut	.15
4	39160	Spindle and Quill Ass'y.	11.50
5	39617	Spacer	.20
6	39616	Spacer	.25
7	39711	Keyed Washer	.15
8	39615	Spindle Nut	.20
9	39180	Base	15.50
10	X-158	Set Screw 3/8-16x1 Slot. Head Dog Pt.	.10
11	*X-413	Hex Jam Nut 3/8-16	.10
12	X-743	Machine Screw 5/16-18x1 1/4 Hex Head with External Lock Washer	.10
13	X-179	Set Screw 5/16-18x5/16 Soc. Head Cup Pt.	.10
14	38631	Quill Lock	.40
15	X-179	Set Screw 5/16-18x5/16 Soc. Head Cup Pt.	.10
16	39170	Motor Pulley with Set Screw	1.80
17	X-1463	V-Belt 1/2x33 inches long — Purchase from Your Nearest Sears Retail Store or Mail Order House. Ask for Catalog No. 9-1633	—
18	39611	Motor Mount Bar	.30
19	39213	Motor Mount	4.30
20	*X-325	Machine Bolt 5/16-18x2 1/4 Square Head	.10
21	*X-601	Plain Washer 11/32 I.D.x11/16 O.D.	.10
22	X-417	Hex Nut 5/16-18	.10
23	39120	Belt Guard	1.90
24	X-184	Set Screw 5/16-18x1 1/4 Soc. Head Cup Pt.	.10
25	X-623	Plain Washer 21/64 I.D.x7/8 O.D.	$ .10
26	X-417	Hex Nut 5/16x18	.10
27	18916	Control Knob	.40
28	39612	Control Rod	.30
29	38632	Quill Lock Sleeve	.35
30	39614	Quill Lock Handle	.30
31	39212	Table	22.00
32	39613	Guide Post	.15
33	39411	Insert	.25
34	38413	Fence Frame	3.00
35	18451	Spring Washer	.15
36	38612	Knurled Adjusting Collar	.30
37	38711	Adjusting Collar Bracket	.15
38	X-2952	Thread Forming Screw No. 10-24x3/8 Round Head	.10
39	X-632	Plain Washer 11/32 I.D.x1 1/16 O.D.	.10
40	*X-227	Cap Screw 5/16-18x2 Hex Head	.10
41	38712	Holding Finger	.30
42	38614	Holding Bar	.35
43	X-173	Set Screw 1/4-20x5/16 Soc. Head Cup Pt.	.10
44	38412	Holding Bracket	.35
45	38615	Holding Arm	.35
46	38613	Lock Knob	.25
47	38110	Fence Shoe Ass'y	1.25
48	X-173	Set Screw 1/4-20x5/16 Soc. Head Cup Pt.	.10
49	39811	Fence Face—Right Hand	1.30
	39812	Fence Face—Left Hand	1.30
50	X-607	Plain Washer 17/64 I.D.x19/32 O.D.	.10
51	X-546	Machine Screw 1/4-20x3/4 Fillister Head	.10
52	*X-1405	Allen Wrench 1/8	.15
53	*X-1400	Allen Wrench 5/32	.15
54	38713	Spindle Nut Wrench	.25

***Parts marked in this manner may be purchased locally.**

This sheet is intended for instruction and repair parts only and is not a packing slip. The parts shown and listed may include accessories not necessarily part of this tool. All parts are shipped prepaid. All prices are subject to change without notice.