

**OPERATING INSTRUCTIONS  
AND PARTS LIST FOR  
CRAFTSMAN  
JOINTER**

**4 $\frac{3}{8}$  INCH**

**Model Number 103.21820**

This is the model number of your Jointer. It will be found on a plate located on the right side of the front table. Always mention this model number when communicating with us regarding your Jointer or when ordering parts.

**HOW TO ORDER REPAIR PARTS**

All parts listed herein may be ordered through Sears, Roebuck and Co. or Simpsons, Sears Limited. When ordering parts by mail from the mail order house which serves the territory in which you live, selling prices will be furnished on request or parts will be shipped at prevailing prices and you will be billed accordingly. **WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST:**

1. The **PART NUMBER**
2. The **PART NAME**
3. The **MODEL NUMBER**
4. The **NAME** of item

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.—U. S. A.  
SIMPSONS, SEARS LIMITED—CANADA**

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# OPERATING INSTRUCTIONS AND PARTS LIST FOR JOINTER

MODEL NUMBER 103.21820

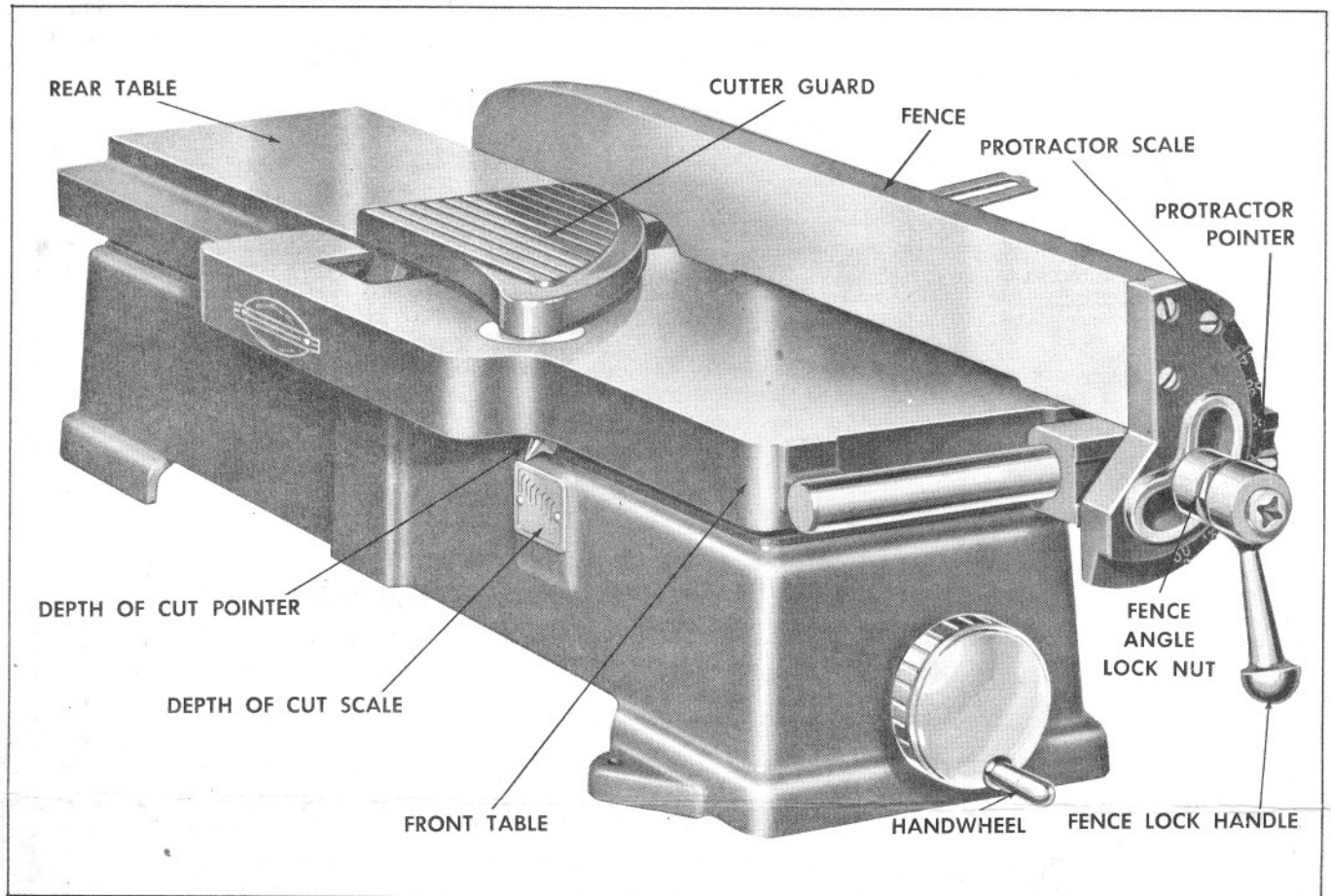


FIGURE 1

This Jointer has been completely assembled, inspected and tested at the factory. To avoid breakage and misalignment of parts during shipment, the fence, cutter guard, and several miscellaneous parts have been packed disassembled. These parts are listed below. Be sure they are all accounted for before discarding any of the packing material.

1. Fence Assembly
2. Bag Assembly consisting of:
  - a. Item 77; Machine Screw—2 pcs.
  - b. Item 79; Fence support knob
  - c. Item 80; Spherical washer
  - d. Item 78; Fence support washer
  - e. Item 81; Fence support with hinge
  - f. Item 82; Fence support washer
  - g. Item 83; Fence support rod
  - h. Item 84; Hex jam nut
  - i. Item 17; Allen wrench
3. Item 1; Cutter guard.

## ASSEMBLY:

The tool may be reassembled as follows:

1. To install the cutter guard, (See Figure 1), engage the hexagon stud in the swinging guard insert, Item 2, in operating position and drop the guard in place.

2. Assemble the  $\frac{1}{2}$  inch hexagon jam nut, Item 84, onto the fence support rod, Item 83, and thread the rod into the tapped hole in the pulley side of the front table, Item 5, until rod is approximately  $1\frac{1}{8}$  inches from the table (See Figure 3) in a vertical position. Lock the fence support rod in position by running jam nut tight against table.
3. Install fence assembly on the Jointer by fitting fence slide, Item 72, over fence slide bar, Item 73, and sliding fence onto the table.
4. Assemble fence support, Item 81, to fence by means of the two machine screws, Item 77.
5. Place washers, Items 82, 80 and 79, fence support, Item 81, and fence support knob, Item 79, in position as shown in Figure 3.

## INSTALLATION:

The jointer should be mounted securely on a work bench or stand so that the table surface is at a comfortable working height. Three  $\frac{11}{32}$  inch holes are provided in the base for this purpose. The motor should be installed below on a wooden shelf. The jointer pulley is designed to use a standard  $\frac{1}{2}$  inch Vee type belt. After the position of the motor has been established, the required belt length may be

determined by measuring with a flexible tape around the **outside** of the pulleys, not in the groove. Cutter head rotation must be counterclockwise as viewed from the pulley side of the jointer. Pulley alignment, and belt tension adjustment, as well as direction of rotation should be considered when installing the jointer and its power unit.

#### LUBRICATION:

The precision ball bearings used in this jointer have been packed with grease and sealed at the factory. They should require no further attention for the life of the bearings.

To maintain smooth easy operation of the controls, oil should be applied occasionally to the following units located under the front table: the upper and lower slides, and the elevation screw and bracket. Oil should also be applied to the swinging guard insert and fence slide from time to time.

#### SPEED:

For best results, the jointer should be operated at approximately 4500 R.P.M. Satisfactory operating speed and power may be attained by using a 1/3 H.P. 1750 R.P.M. motor equipped with a 5 inch diameter pulley, if continuous heavy duty work is planned, a 1/2 H.P. motor should be used. Be sure to specify the shaft diameter of your motor when ordering this pulley.

#### CONTROLS:

The position of the fence is maintained by the clamping action of the fence angle lock nut and the fence slide lock, Item 62. The fence may be positioned at any point across the table by loosening the fence slide lock and the fence support knob, Item 79, and moving the fence along the fence slide bar, Item 73.

The fence lock handle is designed so that it may be disengaged after use on the lock nut and will hang in a neutral position as shown. The angle between the fence and the table may be changed for beveling operations by loosening the fence angle lock nut and the fence support knob. The angle selected for the bevel cut is indicated on the protractor scale. After changing the fence position as described above, check carefully that the fence angle lock nut, fence slide lock, and fence support knob are all secure before proceeding with a cutting operation.

The fence support knob functions as a lock to secure the fence support which maintains accurate fence positioning.

The handwheel is used to raise and lower the front table, thus regulating the depth of cut indicated by the depth of cut pointer and scale.

Note: As the fence is tilted, the depth of cut is reduced.

#### ADJUSTMENTS:

If at any time the cut obtained should vary from that indicated on the depth of cut scale the following adjustment may be made. Set the front and rear tables at the same level and check with a straightedge. Loosen the screw, Item 8, holding the pointer, Item 6, and shift the pointer until it indicates zero on the scale. Tighten the screw securely after making the above adjustment.

If a 90° setting of the fence angle protractor does not produce square cuts the fence may be reset square

with the table by using an accurate tri-square. After the 90° relation between the fence and table has been established, the screw, Item 69, holding the protractor pointer may be loosened and the pointer reset at 0.

If a gouge or step is produced at the end of a cut it is an indication that the rear table is too low. Likewise, the cut may diminish or taper as the work is pushed through as a result of a high rear table. Either of these conditions may be rectified by aligning the table surfaces in the following manner. Lay a straightedge across both tables as shown in figure 2. By adjusting any of the six leveling jacks, Items 24 and 35, as needed, set the tables so that they are level and in the same plane, so that when the cutter head is turned slowly by hand, the knives will touch the straightedge **lightly** at either side of the table. The leveling jacks may be adjusted by loosening the lock screws, Items 26 and 33. After the jacks have been adjusted and the tables are in their proper relation to each other and to the cutter head, hold the jacks with a wrench so that they will not turn while retightening the lock screws.

Trial cuts should be made after any adjustment or repositioning to make sure that no other control unit has been disturbed and that all controls are functioning in proper relation to each other.

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

#### SHARPENING THE BLADES:

The three 4 $\frac{3}{8}$  inch high speed steel cutter knives, Item 43, will give satisfactory cutting surface for many hours of operation without regrinding, if they are honed occasionally with a fine abrasive stone to retouch the edge. This operation can be performed as shown in Figure 4. It is not necessary to remove the cutter blades from the head. Before honing, cover part of the stone with paper as shown to prevent injury to the table surface. For satisfactory results, the original bevel angle must be maintained on the knives. With the handwheel adjust the front table level so that the stone when resting on the table will touch the full width of the knife bevel. Secure the cutter head in the desired position by inserting a wooden wedge between it and the table as shown.

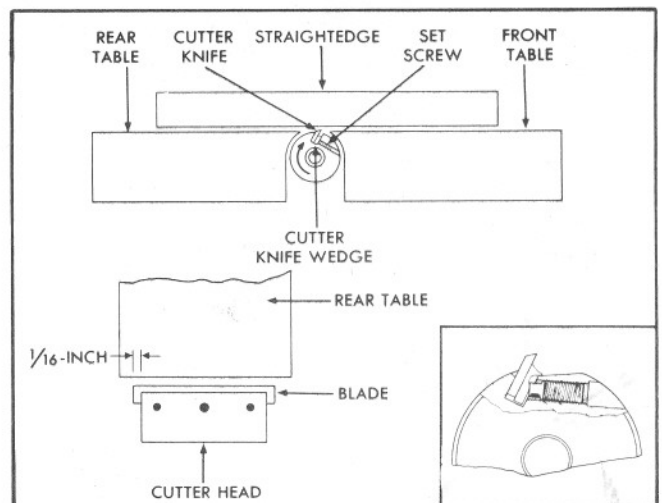


FIGURE 2

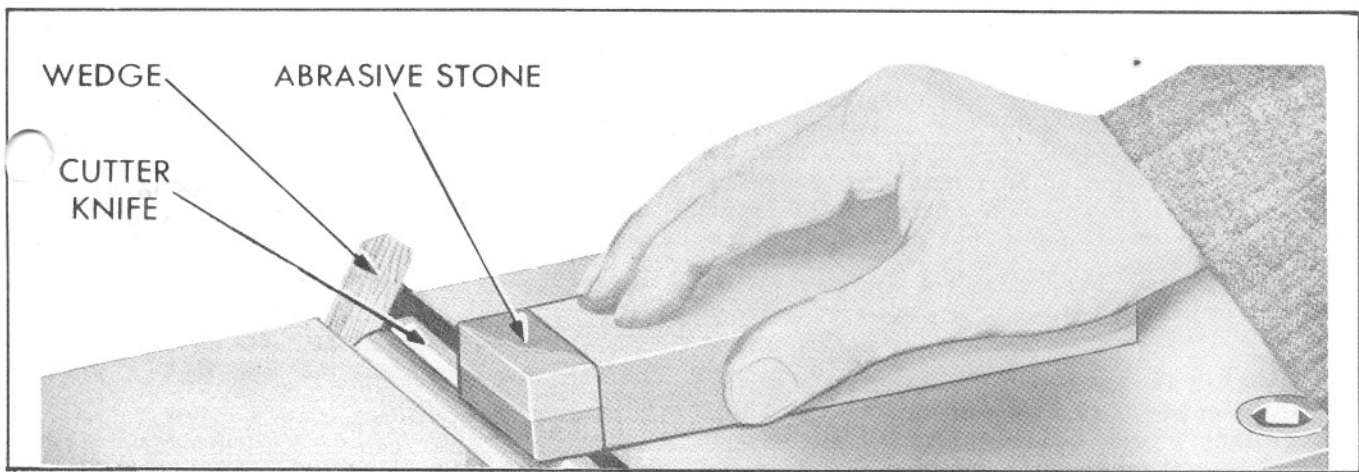


FIGURE 3

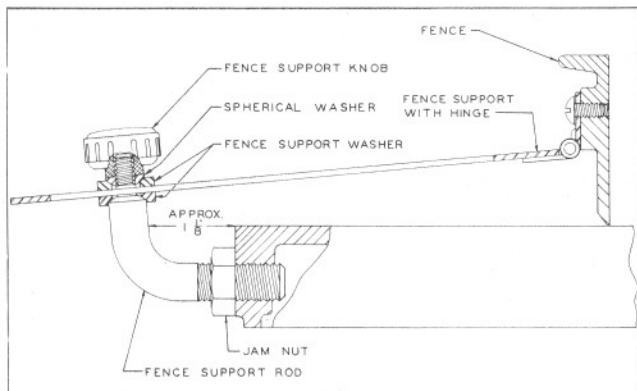


FIGURE 4

Place the paper-covered portion of the stone on the table and by moving the stone back and forth, hone the full length of each knife in turn.

The small burr on the flat side of the blades may be removed by a few light strokes with a fine abrasive stick or a piece of emery cloth.

**CAUTION!**

To insure safe operation of the machine, blades should not be reinstalled which have been ground down to less than 9/16 inch in width.

**RESETTING BLADES:**

If the blades are removed from the cutter head, extreme care should be exercised at time of replacement.

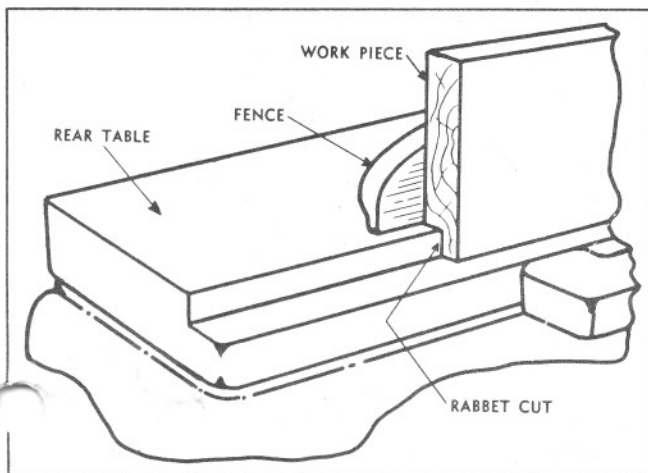


FIGURE 5

Set both tables at the same level—check with an accurate straightedge as shown in Fig. 2. The distance from the table surfaces to the cutter head should be the same at each end of the cutter head. Adjustment of the tables may be made with the leveling jacks as explained under "adjustments".

Install the blades so that they project 1/16 inch at left hand end of the cutter head. The edges should project slightly above the level of the table surfaces. Clamp the blades **lightly** in position. The flat point of each set screw must engage the bevel on the face of each wedge. See inset, Figure 2. With the straightedge on the table as shown in Figure 2, tap the blades into the cutter head with a piece of hardwood until the knife edge just touches the straightedge lightly at either end of the blade as the cutter head is turned by hand. When all three blades have been aligned in the above manner, **tighten the nine set screws securely.**

**OPERATION:**

The swinging guard shown in Figure 1 should be in operating position at all times except during rabbeting operations at which time it may be removed by lifting it straight up out of its hexagonal socket in the front table.

For the rabbeting operations, the fence is shifted from its normal position at the right hand edge of the table to the desired position on the left hand side. The width of cut is determined by the distance from the end of the cutter knives to the fence. (See Figure 5).

Face planing or surfacing is the most common function of the jointer, yet extreme care must be exercised during this operation. The depth of cut should be determined by the width of the material; the wider the material, the less the cut. In most cases a 1/32 cut will produce the best surface.

Deeper cuts should be made in successive passes across the cutter head until the full depth has been attained. The work should be advanced through the guard to the cutter head with a smooth slow feed. Place both hands on top of the work piece, the left hand pressing the piece firmly against the rear table surface, the right hand exerting the feed pressure over the front table.

When cutting pieces over three feet in length, the most uniform cut will be maintained by supporting the piece at table height after it leaves the rear table surface.

Warped stock should be cut on the concave side for best results. To avoid pitting or torn grain it is advisable, wherever possible, to determine which way the grain emerges on the surface of a piece of wood. The direction of feed should be governed accordingly; the grain should emerge on the lower surface of the piece and should point toward the front of the jointer.

When surfacing thin stock ( $\frac{1}{2}$  inch or less), a push block should always be used.

Because of the cut-out in the lower edge of the fence, designed for clearance at a maximum depth of cut setting, a guide surface is not available beyond the cutter head when surfacing stock less than  $\frac{1}{2}$  inch thick. It may be necessary to clamp an auxiliary

face to the fence if a guide is needed under the above circumstances. This "face piece" should be attached after the front table position has been established, and should rest on the rear table surface. The function of the fence in the beveling operation has been described in the paragraph on controls.

The swinging guard was incorporated for your safety—use it to its best advantage.

To be sure you will make a depth of cut as planned, always lower the table **beyond** the depth wanted and then crank the table **up** to the correct depth.

An interesting booklet covering special operations which may be performed on your jointer is available.

## PARTS LIST

Order By			Order By		
Item No.	Part No.	Part Name	Item No.	Part No.	Part Name
1	29110	Cutter guard	43	18127	Cutter blade - Purchase from nearest Sears retail store or mail order house. Ask for Catalog No. 9-2291.
2	29416	Cutter guard insert	44	X-176	Set screw 5/16-24 x $\frac{1}{2}$ Socket hd. cup pt.
3	29222	Fence	45	18620	Handwheel with set screw
4	29212	Rear table	46	X-183	Set screw No. 10-24 x $\frac{1}{4}$ socket hd. cup pt.
5	29207	Front table	47	29722	Retaining ring
6	29719	Depth of cut pointer	48	18231	Ball bearing
7	X-627	Washer 11/64 I.D. x 5/16 O.D.	49	*X-547	Mach. screw No. 10-24 x $\frac{1}{2}$ slotted round hd.
8	*X-2951	Self tapping screw No. 6-32 x $\frac{1}{4}$ Phillips round hd.	50	*X-2450	Lock washer 3/16 inch, external tooth.
9	29811	Swinging guard spring	51	29423	Gib, left hand
10	29718	Swinging guard spring bracket	52	29419	Lower slide
11	*X-516	Mach. screw No. 8-32 x $\frac{1}{4}$ slotted round hd.	53	29422	Gib, right hand
12	X-611	Lock washer 5/16 inch	54	X-210	Cap screw $\frac{1}{4}$ -20 x 1 hex. hd.
13	*X-205	Cap screw 5/16-18 x 1 $\frac{1}{4}$ hex hd.	55	18711	Clevis
14	18713	Pin	56	29715	Link
15	X-611	Lock washer 5/16 inch	57	*X-605	Lock washer $\frac{1}{4}$ inch
16	X-212	Cap screw 5/16-18 x 1 $\frac{1}{4}$ hex hd.	58	*X-420	Hex nut $\frac{1}{4}$ -20
17	*X-1403	Allen wrench 5/32	59	18716	Table elevating bracket
18	18035-A	Pulley with set screw - 2 inch, single groove V-pulley, $\frac{1}{2}$ inch bore. Purchase from your nearest Sears retail store or mail order house. Ask for Catalog No 9A-2801 - $\frac{1}{2}$ inch bore.	60	*X-1103	Cotter pin 1/16 x $\frac{1}{2}$
19	29109	Cutter head assembly - includes items 40, 41, 42, 43 and 44.	61	29421	Upper slide
20	*X-179	Set screw 5/16-18 x 5/16 socket hd. cup point.	62	18133	Fence slide lock handle
21	29723	Spacer	63	X-330	Mach. screw $\frac{3}{8}$ -16 x 1 $\frac{1}{4}$ Phillips - Fillister hd.
22	29202	Base with depth of cut scale and retaining rings, Item 32	64	29425	Fence angle lock handle
23	18437	Spherical washer	65	29412	Fence angle lock nut
24	18516	Leveling jack	66	29712	Fibre washer
25	X-611	Lock washer 5/16 inch	67	X-546	Mach. screw $\frac{1}{4}$ -20 x $\frac{3}{4}$ Slotted fillister hd.
26	*X-232	Cap screw 5/16-18 x 1 $\frac{1}{4}$ hex hd.	68	29414	Protractor
27	18231	Ball bearing	69	*X-2951	Self tapping screw No. 6-32 x $\frac{1}{4}$ Phillips round hd.
28	38715	Retaining ring	70	29622	Fence angle lock stud
29	29717	Depth of cut scale	71	18922	Protractor pointer
30	X-1326	Drive screw No. 4 x 3/16	72	29216	Fence slide
31	29624	Arbor	73	29613	Fence slide bar
32	29722	Retaining ring	74	29413	Fence guide bar spacer
33	*X-232	Cap screw 5/16-18 x 1 $\frac{1}{4}$ hex hd.	75	*X-605	Lock washer $\frac{1}{4}$ inch
34	X-611	Lock washer 5/16 inch	76	*X-210	Cap screw $\frac{1}{4}$ -20 x 1 hex hd.
35	18516	Leveling jack	77	X-734	Mach. screw No. 10-24 x $\frac{3}{8}$ with external lock washer
36	*X-420	Hex nut $\frac{1}{4}$ -20	78	29628	Fence support washer
37	*X-162	Set screw $\frac{1}{4}$ -20 x $\frac{5}{8}$ slotted hd. half dog pt.	79	18619	Fence support knob
38	18437	Spherical washer	80	29629	Spherical washer
39	29615	Elevating screw	81	29250	Fence support with hinge
40	29201	Cutter head with set screws	82	29628	Fence support washer
41	*X-121	Set screw 5/16-24 x $\frac{3}{4}$ socket hd. dog pt.	83	29631	Fence support rod
42	29618	Wedge	84	*X-450	Hex jam nut $\frac{1}{2}$ -13
			85	29008	Fence assembly complete - including items 3, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 77 and 81.

\*Standard hardware items—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.

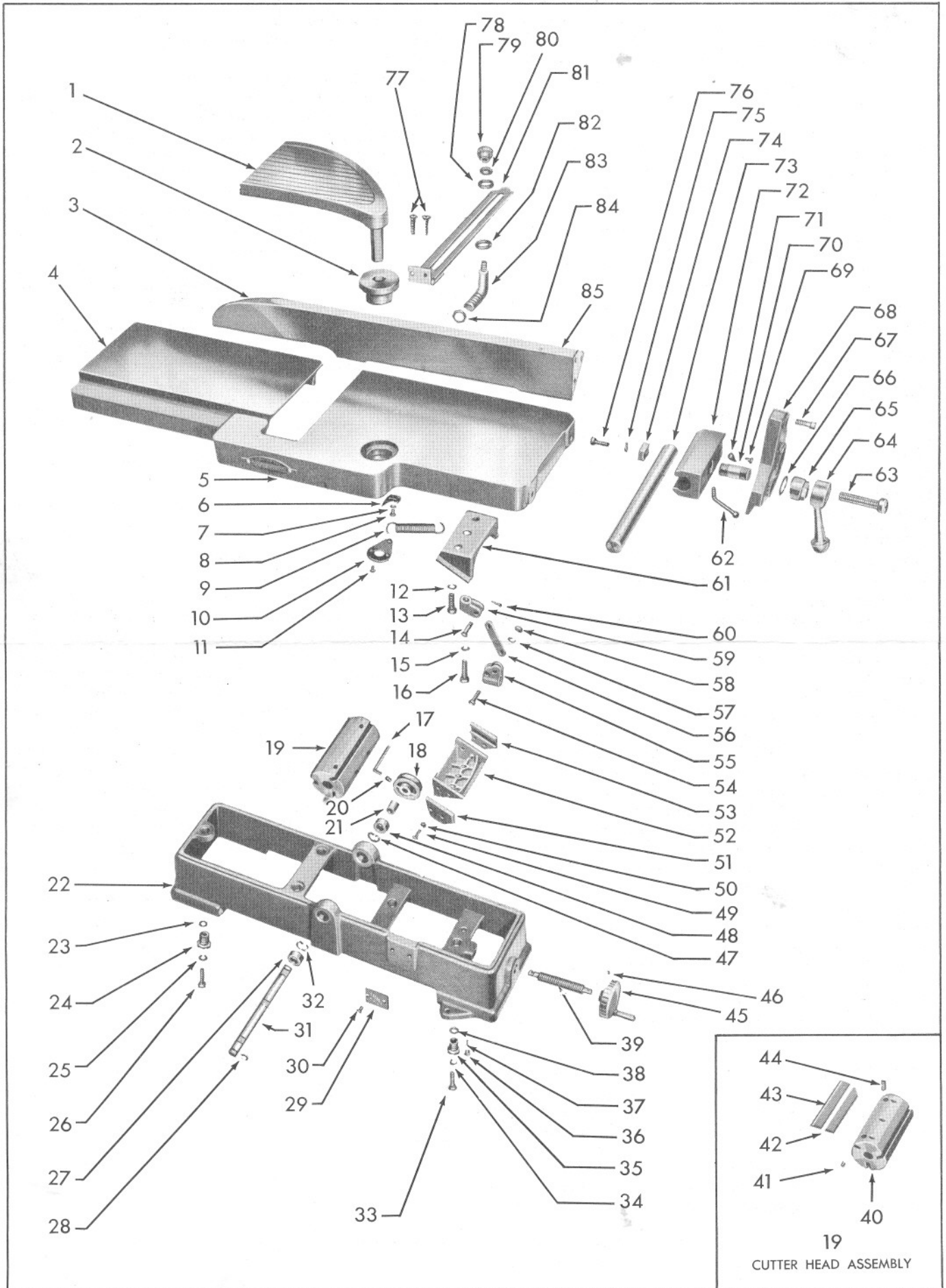


FIGURE 6