

SINGER*

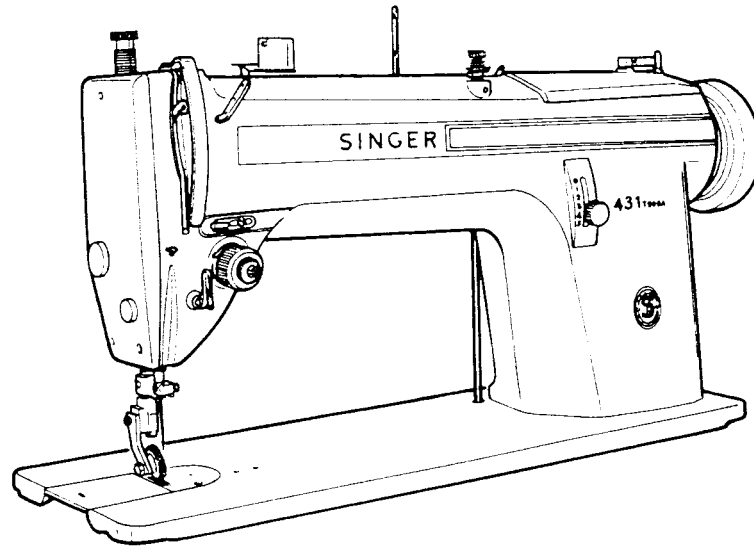
**Service
Manual**

431

T 200A

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DESCRIPTION

Machine 431T200A is a low speed, wheel feed single needle, lockstitch machine designed for general stitching operations on light weight leathers.

GENERAL FEATURES

- Central bobbin, short beak oscillating shuttle on horizontal axis.
- Snap-out shuttle race for easy removal of shuttle.
- Link take-up.
- Pinch-point free thread take-up lever guard.
- Length of stitch controlled by regulator thumb screw on front of machine arm.
- Intermittent wheel feed system.
- Arm top cover with built-in bobbin winder.
- Knee lifter built into underside of machine bed.

SPECIFICATIONS

Needle bar stroke		37.4 mm (1.472")
Presser bar lift	– Hand lift	7.9 mm (0.313")
	– Knee lifter	9.1 mm (0.358")
Maximum stitch length		5.1 or 3.2 mm (5 or 8 s.p.i.)
Stitch type		No. 301
Bed size		476 mm x 178 mm (18.75" x 7")
Space at right of needle		280 mm (11.02")
Maximum speed		1,800 s.p.m.
Oil		Type "B" or "D"

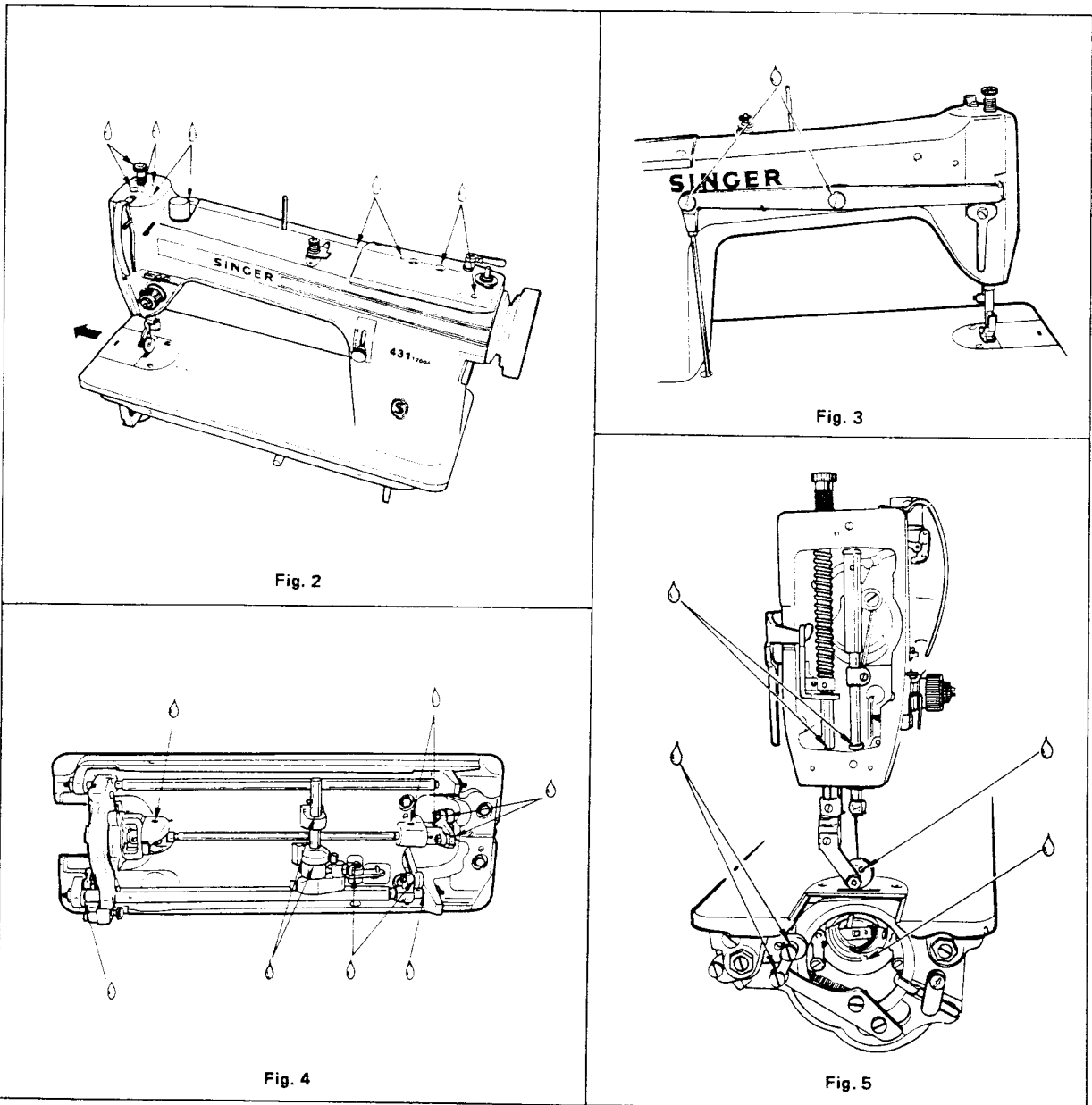
INSTALLATION

Before placing the machine in its cut-out on table, see that the four cushioning pads are at the four corners of the cut-out. Place the machine on these pads.

LUBRICATION*

Use SINGER* Oil, Type "B" or "D". Use Type "D" oil when an oil is desired which will produce minimum stain on fabrics.

A machine in continuous use should be oiled frequently. Frequency is dependent upon the speed at which the machine is operated and the type of work being done. Basically the machine needs oiling at least twice each working day.



Before starting the machine, at the beginning of the day and again after midday recess, apply a few drops of oil at each of the oiling points on the machine as shown in Figs. 2 through 5.

Never attempt to oil shuttle race (see Fig. 5) through holes in throat plate.

SPEED

The maximum speed recommended for this machine is 1,800 s.p.m. depending on the material sewn and the type of work being done.

It is advisable to operate this machine at a speed 500 s.p.m. less than maximum for the first 100 hours of operation.

NEEDLES

The needle you select will have a very direct effect on the quality, strength and appearance of the stitching produced by the machine. For best sewing results use longer needles, Catalog No. 2220 (16 x 6), in sizes determined by size of thread and type of material being sewn.

TO SET NEEDLE BAR AT CORRECT HEIGHT

PREPARATION:

Remove face plate, slide plate and throat plate. See that needle is correctly set in needle bar.

Lower end of bushing must be set as shown in Fig. 6. To reset the bushing, loosen screw (1).

CHECK:

When needle bar is at its lowest point (during rotation of machine pulley), the uppermost timing mark on needle bar should be level with lower end of bushing.

Check timing of hook as instructed under TO TIME THE SHUTTLE.

SETTING:

Loosen clamping screw (2), Fig. 6. Raise or lower needle bar, as required. Then securely tighten screw (2).

Replace throat plate, slide plate and face plate.

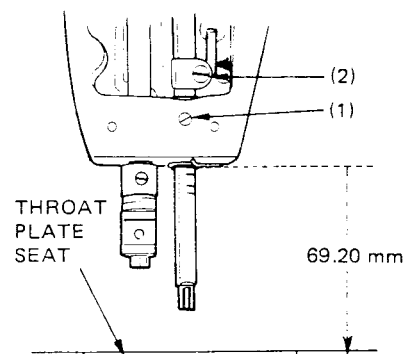


Fig. 6

TO SET CHECK SPRING HEIGHT

PREPARATION:

Thread the machine and place a material under the roller presser.

CHECK:

Turn machine pulley over toward you slowly. When take-up lever begins to rise, check spring (3), Fig. 7, makes a slight dip and a return to its higher position. Later, as take-up lever approaches top of stroke, check spring (3) should be drawn all the way down; setting the stitch. As lever descends, check spring (3) returns to rest.

SETTING:

Loosen screw (4), Fig. 7. Turn stud (5), Fig. 7 (at the same time turning entire tension assembly) either over toward left to lower the check spring's resting position and decrease its movement, or over toward right to raise the resting position and increase its movement. Securely tighten set screw (4).

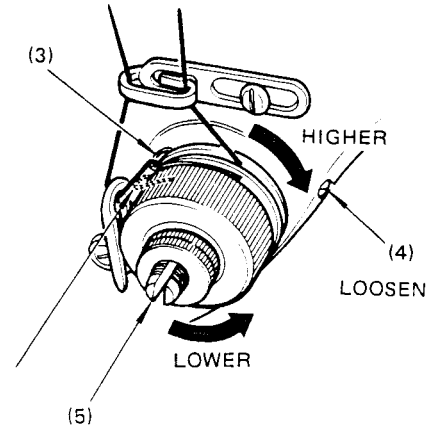


Fig. 7

TO SET CHECK SPRING TENSION

PREPARATION:

Thread the machine. Securely tighten set screw (4), Fig. 8. Make certain thumb nut is on stud (5), Fig. 8.

CHECK:

Tension on check spring (3), Fig. 8, should be sufficient to ensure action at top speed; but still light enough to permit itself to be drawn all the way down (as take-up lever approaches height of stroke) before any thread is drawn through the tension discs.

SETTING:

Using a large screwdriver in slot of stud (5), turn stud either over toward left to decrease tension or over toward right to increase it, as shown in Fig. 8.

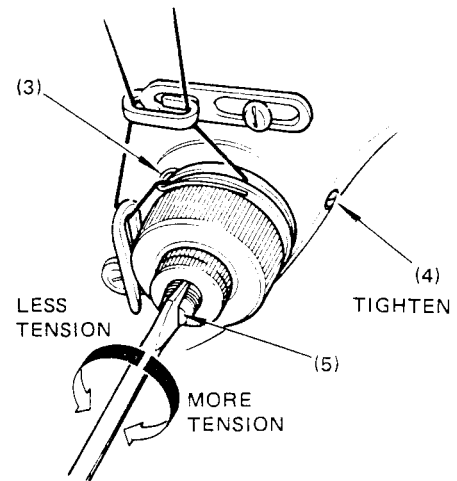


Fig. 8

NOTE: The tension on the check spring may require different setting depending upon the thread and material used. Heavier thread or bulkier material requires more tension to ensure correct thread control.

TO SET PRESSER BAR AT CORRECT HEIGHT

PREPARATION:

Remove face plate and slide plate.

Accumulation of lint, oil and dirt on roller presser seat on presser bar may prevent proper seating of presser. Clean this area before checking and setting the presser bar.

CHECK:

1. When roller presser is raised with presser bar lifting lever there should be a 7.9 mm (0.313") clearance between roller presser and throat plate.
2. When roller presser rests firmly upon feed wheel there should still be some clearance between guide bracket (6) and lifting lever link (7), as shown in Fig. 9.
3. When roller presser is at its highest point and needle bar at its lowest, the roller presser should clear the needle bar thread guard (8) at the lower end of needle bar.

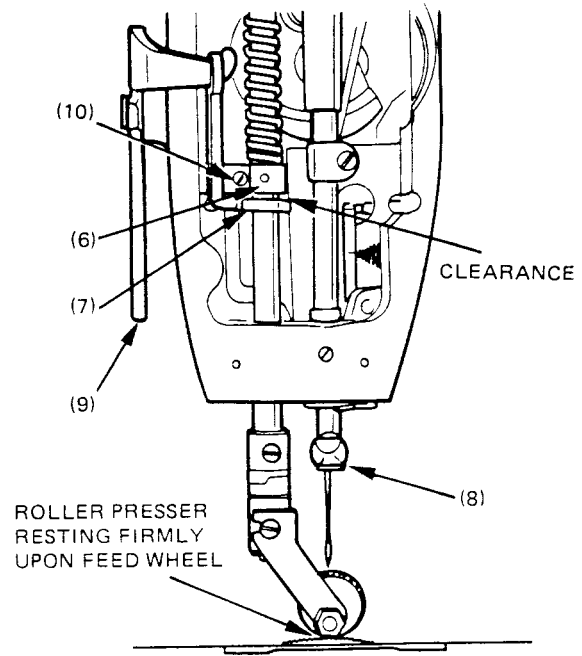


Fig. 9

SETTING:

1. Release presser bar lifting lever (9), Fig. 9, lowering the roller presser.
2. Loosen clamping screw (10), Fig. 9, and raise or lower guide bracket (6), as required.
3. Make certain the roller presser just clear the needle having no more than 0.4 mm (0.015") clearance maximum.

Securely tighten screw (10).

TO TIME THE SHUTTLE

CHECK:

Turn machine pulley over toward you until needle bar descends to lowest point and then rises approximately 2.54 mm (0.1").

At this setting, for normal sewing, the point of the shuttle should be at the center of the needle as shown in Fig. 10.

ALTERNATE CHECK:

When point of shuttle is at center of needle as explained above, the second-from-top timing mark on the needle bar should be level with the lower end of lower needle bar bushing.

TO RE-SET THE TIMING:

Loosen two set screws (11), Fig. 11, (one from top side of bed) in the shuttle driver (12). Move point of shuttle to center of needle and securely tighten the two set screws (11).

NOTE: Remove all end play from oscillating shaft when tightening set screws (11).

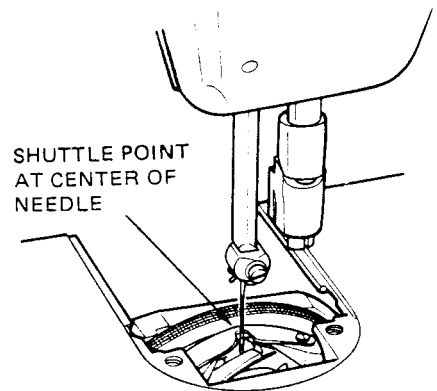


Fig. 10

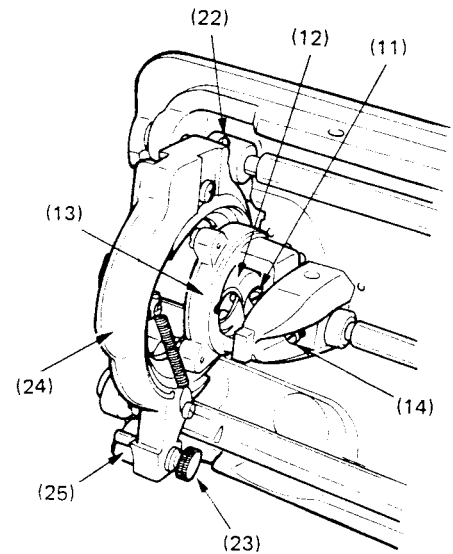


Fig. 11

TO SET THE SHUTTLE RACE SIDEWISSE IN RELATION TO THE NEEDLE

PREPARATION:

Remove slide plate, throat plate and bobbin case. Set needle correctly in needle bar.

CHECK:

When point of shuttle passes the right side of the needle, the clearance between point of shuttle and needle should be about 0 - 0.05 mm (0 - 0.002"), as shown in Fig. 12.

SETTING:

1. Loosen two set screws (11) holding the shuttle driver (12), Fig. 11.
2. Loosen set screw (14) holding the shuttle race (13), Fig. 11.

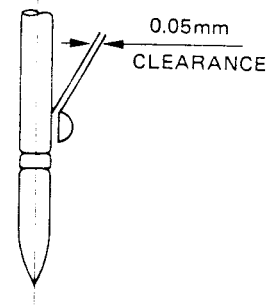


Fig. 12

3. Move shuttle race (13) and shuttle driver (12), as required.
4. Securely tighten set screws (14) and (11).

NOTE: When setting the shuttle race in position, make certain the needle will be located centrally in the slot of the shuttle race cap, as shown in Fig. 10.

Check timing of shuttle in relation to the needle and adjust as instructed on page 6.

TO REMOVE AND REPLACE SHUTTLE RACE

PREPARATION:

Turn machine pulley over toward you until needle is at its highest position.

Remove needle, slide plate, throat plate and feed wheel frame as instructed on page 9.

NOTE: When only the shuttle body is removed, there is no need to remove the feed wheel frame.

REMOVAL:

1. Push left and right shuttle race gate latches (15) outward and remove shuttle race gate (16), Fig. 13.
2. Remove shuttle body (17), Fig. 13.
3. Turn machine pulley over toward you until needle bar is located at middle of its stroke. Loosen two screws (11), Fig. 11, and remove shuttle driver (12).
4. Loosen screw (14) and remove shuttle race (13) toward head end of machine. (Fig. 11)

REPLACEMENT:

1. Replacement is the same as removal except in reverse order.
2. Adjust timing of shuttle as instructed on page 6.

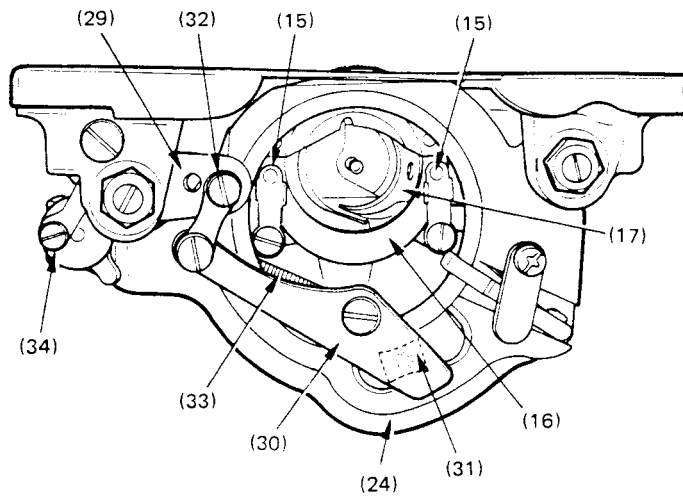


Fig. 13

TO TIME THE FEED

Before the machine leaves the factory, the feed eccentric is set for average sewing conditions; having the timing mark (18) align with the timing mark (19) provided on the arm shaft. (Fig. 14)

If for any reason it is necessary to alter the timing of feed eccentric, the eccentric should be adjusted and locked in desired setting with two set screws (20), Fig. 14.

SETTING:

1. Set the machine for longest stitch.
2. Remove arm top cover.
3. Loosen two set screws (20) in feed eccentric (21), Fig. 14.
4. Rotate feed eccentric (21) as required to obtain desired timing.
5. Securely tighten set screws (20).
6. Replace arm top cover.

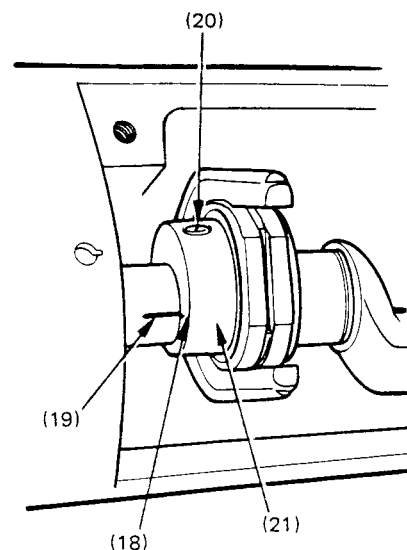


Fig. 14

TO SET FEED WHEEL AT CORRECT HEIGHT

The feed wheel should be set so that its teeth will project 1.05 mm (0.041") above the top surface of the throat plate, as shown in Fig. 15.

Variations of feed wheel height may be necessary depending upon the material being sewn.

To adjust the height of feed wheel, loosen screw (22) and thumb screw (23), then raise or lower the feed wheel frame (24) by turning the feed wheel frame adjuster (25), as required. (Fig. 11)

When the feed wheel is set to the desired height, securely tighten screw (22) and (23).

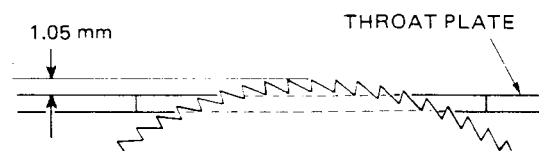


Fig. 15

TO CENTRALIZE FEED WHEEL IN THROAT PLATE SLOT

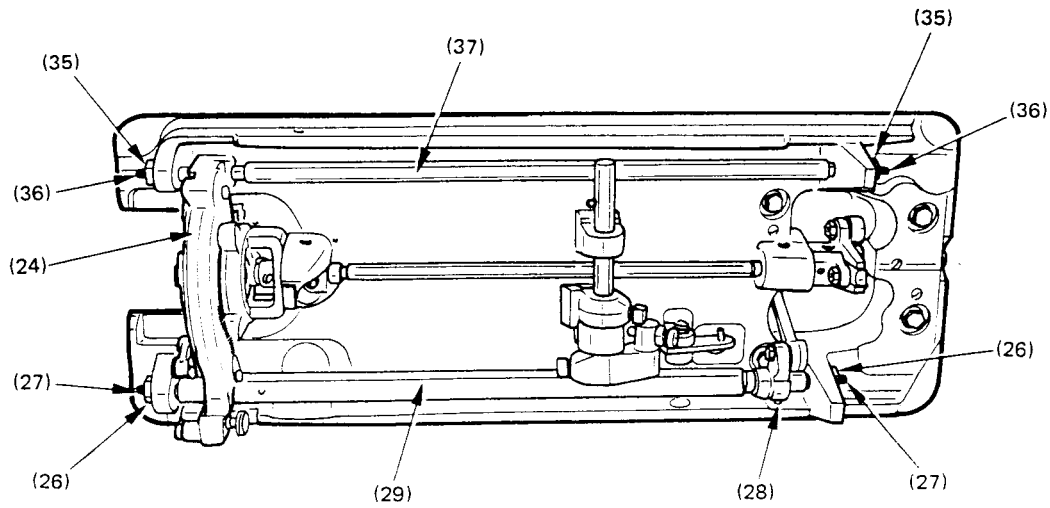


Fig. 16

CHECK:

Feed wheel should not contact edges of the throat plate slot.

SIDWISE SETTING:

1. Feed wheel should travel on a line midway between sides of throat plate slot.
2. Feed wheel can be moved toward left or right, as required, after loosening two nuts (26) on screw centers (27) and screw (28), Fig. 16, and screw (22), Fig. 11.
3. To move feed wheel toward left, loosen screw center (27) at left end of shaft (29), as required, and tighten the other screw center an equal amount. Then loosen screw (22) and move feed wheel frame (24) toward left an equal amount.
4. Make certain that screw centers hold feed rock shaft (29) snugly in place without binding. Then securely tighten both nuts (26), screw (28) and (22).

NOTE: Feed wheel drive (30) should be lightly in contact with the left side surface of feed wheel frame (24) and function freely without binding. (Fig. 13)

When the stitch length is set to zero, make certain feed wheel driver block (outside) (31) will be located centrally in the slot of feed wheel frame as shown in Fig. 13.

TO REMOVE AND REPLACE FEED WHEEL FRAME

PREPARATION:

Turn machine pulley over toward you until needle is at its highest position. Remove needle, slide plate and throat plate.

REMOVAL:

1. Remove hinge screw (32), spring (33) and remove feed wheel driver (assembly) (30), Fig. 13.
2. Loosen screw (28), Fig. 16, and turn feed rock shaft (29), Fig. 13, as required to permit removal of feed wheel frame (24).
3. Remove hinge screw (34), Fig. 13, both nuts (35) and screw centers (36), Fig. 16. Then remove feed wheel frame (24) with feed wheel frame shaft (37).

REPLACEMENT:

1. Replacement is the same as removal except in reverse order.
2. Adjust feed wheel height and sidewise setting as instructed on pages 8 and 9.