

# **SINGER**

157-4

# USE **SINGER**\* OILS and LUBRICANTS

*They insure freedom from lubricating trouble and give longer life to sewing equipment*

---

*The following are the correct lubricants for this machine:*

**TYPE B** — MANUFACTURING MACHINE OIL, HEAVY GRADE

*When an oil is desired which will produce a minimum of stain on fabrics, even after a long period of storage, use:*

**TYPE D** — MANUFACTURING MACHINE OIL, HEAVY GRADE

---

## OTHER **SINGER**\* LUBRICANTS

**TYPE E** — THREAD LUBRICANT

For lubricating the needle thread of sewing machines for stitching fabrics or leather where a thread lubricant is required.

**TYPE F** — MOTOR OIL

For oil lubricated motors and plain bearings in power tables and transmitters.

**NOTE:** All of the above oils are available in 1 quart, 1 gallon and 5 gallon cans.

**GEAR LUBRICANT**

This specially prepared grease is recommended for gear lubrication on manufacturing sewing machines.

**BALL BEARING LUBRICANT**

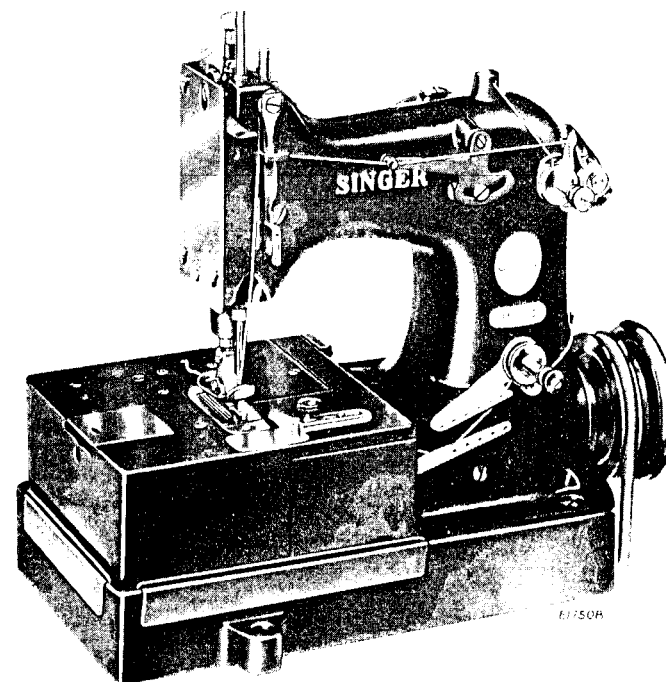
This pure grease is specially designed for the lubrication of ball bearings and ball thrust bearings of motors and electric transmitters, ball bearing hangers of power tables, etc. Furnished in 1 lb. and 4 lb. tins.

20097

## INSTRUCTIONS

FOR USING AND ADJUSTING

# **SINGER**\* SEWING MACHINES



**157-4**

FOR MEDIUM BURLAP BAGS

---

**AUTOMATIC OILING SYSTEM**

---

**THE SINGER MANUFACTURING CO.**

\*A Trademark of THE SINGER MANUFACTURING COMPANY

## DESCRIPTION

**SINGER Machine 157-4** has one needle and one looper and makes the two thread chain stitch, for medium burlap bags.

A looper and two throat plates for two-thread chain stitching are furnished with this machine as regular equipment. The throat plate for two stitches to the inch is on the machine, and one throat plate for four stitches to the inch is sent extra.

When the order so specifies, a looper and throat plate, for producing single thread chain stitching, will be furnished.

The machine is adjustable for producing two or four stitches to the inch.

The machine is equipped with a splash oiling system which automatically lubricates the principal bearings.

Needle bar stroke is two inches.

Clearance under the presser foot is  $\frac{7}{16}$  inch.

Cloth plate is nine inches wide.

Space at right of needle is five inches.

When the order so specifies, the machine will be equipped, without extra charge, with a knee lifter or with a foot lifter.

Copyright © 1958 by The Singer Manufacturing Company

---

## SPEED

The speed is up to 3,000 r. p. m., depending upon the nature and thickness of the material being sewn.

The top of the balance wheel should always turn over from the operator.

---

## TO SET UP THE MACHINE

Place the machine on the table in such position that the machine-driving pulley will be in alignment with the transmitter pulley. Mark the location for the three wood screws to center in the rubber bushings in the corresponding holes in the machine base, then fasten these three screws in place in the table. Now remove the machine and base, and place the felt cushion (which accompanies the machine) in proper position on the table, then set the machine and base upon this felt cushion and fasten the machine in place, having the three wood screws in the three rubber bushings in the machine base.

## TO OIL THE MACHINE

Use "TYPE B" or "TYPE D" Oil, sold only by Singer Sewing Machine Company. See inside front cover for description of these oils.

When the machine is shipped from the factory, the oil reservoir in the machine base is completely dry. Therefore, before operating the machine, fill the oil reservoir to correct level as instructed below.

Failure to follow these instructions will result in serious damage to the machine.

Pour oil into the machine base at **W**, Fig. 3 until it covers the oil gauge which is located inside the machine base at the front side of the machine. This oil gauge is not shown in these illustrations, but its location is indicated by the arrow **F**, Fig. 2.

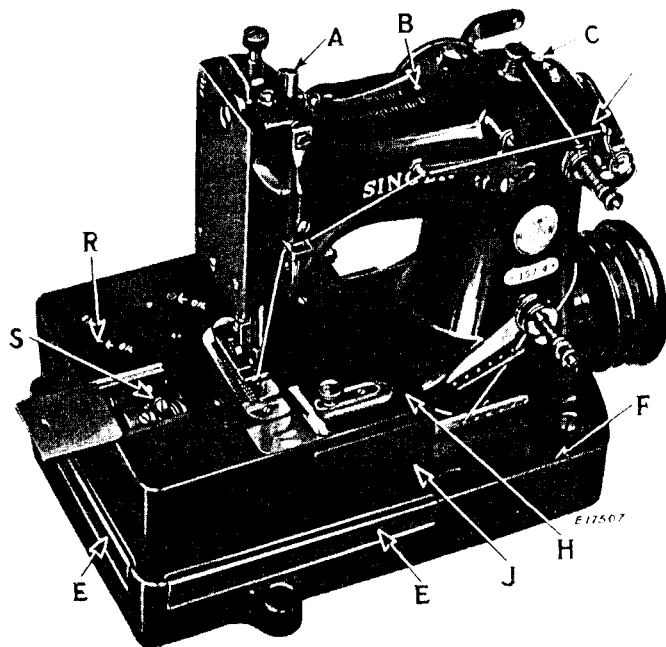


Fig. 2. Oiling Points—Front Side of Machine

**NOTE:** When observing the oil level at the gauge indicated by the arrow **F**, allow sufficient time for the oil to rise to its final level.

To oil the front end of the feed connection, withdraw the slide plate and apply oil to the oil hole **S**, Fig. 2.

Arm side cover **T**, Fig. 3, at the rear side of the machine, is transparent, thus enabling the operator to determine at a glance whether or not the splash system is functioning. Should the oil splash not be visible during operation of the machine, a lack of oil in the reservoir is indicated. In such case, stop the machine immediately and replenish the reservoir with the required quantity of oil.

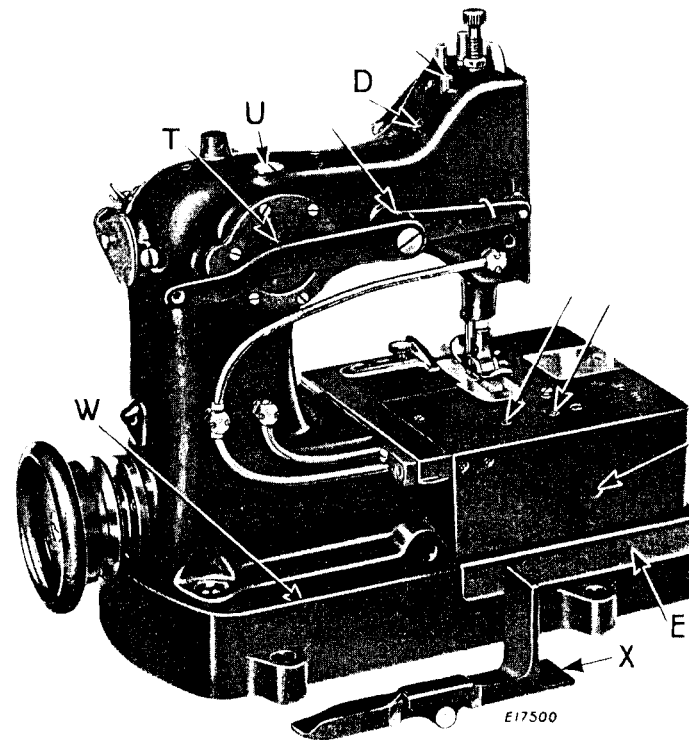


Fig. 3. Oiling Points—Rear Side of Machine

Apply oil to all oil holes in the cloth plate and machine arm at points indicated in Figs. 1 and 2 by unlettered arrows. Each of these places is marked by the word "oil." Thoroughly saturate the wicks at **A**, **B** and **C**, Fig. 2 and at **D**, Fig. 3. Attached to the underside of the cloth plate at **R**, Fig. 2 is a small reservoir which must be filled through the oil hole **R**.

**CAUTION:** When cleaning beneath the cloth plate, be sure to remove the filter guard **X**, Fig. 3 and carefully clean the filter **W**, Fig. 3. For this purpose use a brush to prevent damage to the filter.

Such oiling points, beneath the cloth plate, as are not reached through oil holes in the cloth plate, are accessible with the hinged portions **J** and **H**,

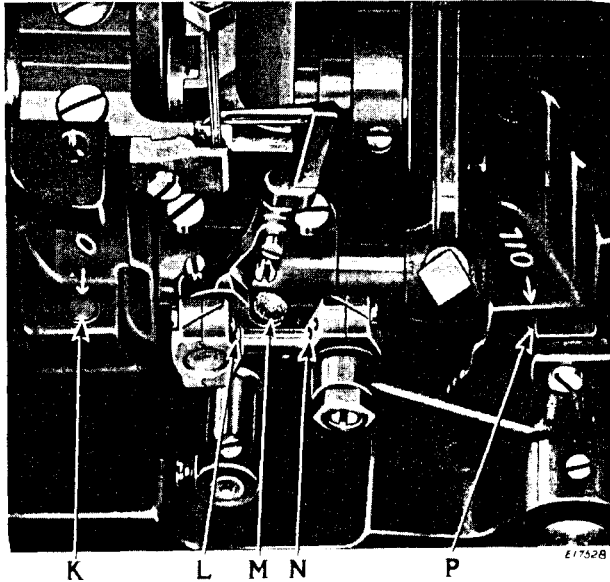


Fig. 4. Oiling Points Beneath the Cloth Plate

Fig. 2 of the cloth plate open. With these hinged portions open, apply oil to the oiling points shown in Fig. 4, as follows:

Thoroughly saturate the wick at **M**, Fig. 4 and apply oil at **K**, **L**, **N** and **P**, Fig. 4.

When the machine is in continuous use, OIL MUST BE APPLIED AT LEAST TWICE DAILY or as often as may be required.

When it is considered desirable to drain the oil from the oil reservoir in the machine base, remove the machine from the base and pour the oil from the reservoir.

**NOTE:** The three guards **E** shown in Figs. 2 and 3 in place in the machine base, are to prevent lint, dirt, etc., from falling into the machine base. When an accumulation of dirt in these guards indicates the necessity for cleaning, the guards are instantly removable for this purpose.

## NEEDLES

Needles for this machine are as follows:

**Class and Variety 124x3**, Cloth Point, Straight Blade, Double Groove, Special Clearance above eye and Short Eye, Round Shank, and are made in Sizes 26, 27, 28 and 29.

**Class and Variety 124x6**, Leather Stay Point, Straight Blade, Double Groove, Special Clearance above eye and Short Eye, Round Shank, and are made in Sizes 26, 27, 28 and 29.

The size of the needle to be used is determined by the size of the thread which must pass freely through the needle eye. The use of rough or uneven thread, or thread which passes with difficulty through the needle eye, will interfere with the successful use of the machine.

Orders for needles must specify the **Quantity** required, the **Size** number, also the **Class and Variety** numbers separated by the letter "X."

The following is an example of an intelligible order:

"100 No. 27, 124x3 Needles"

"100 No. 28, 124x6 Needles"

The best stitching results will be obtained with needles sold by Singer Sewing Machine Company.

## THREAD

As bags are made to cover such a wide range of requirements, the selection of thread of suitable size and texture is best left to the manufacturer.

Either right or left twist thread can be used in the needle and in the looper.

## TO SET THE NEEDLE

Loosen the clamping nut at the lower end of the needle bar and insert the needle up into the needle bar as far as it will go with the long groove of the needle toward the operator, then securely tighten the clamping nut.

### UPPER THREADING

Pass the thread from the unwinder from back to front through hole 1 at the top of the machine arm, then down through the hole 2 in the needle thread tension bracket, under and from left to right between the tension discs 3 and the thread nipper 4, up and to the left of wire guide 5, from

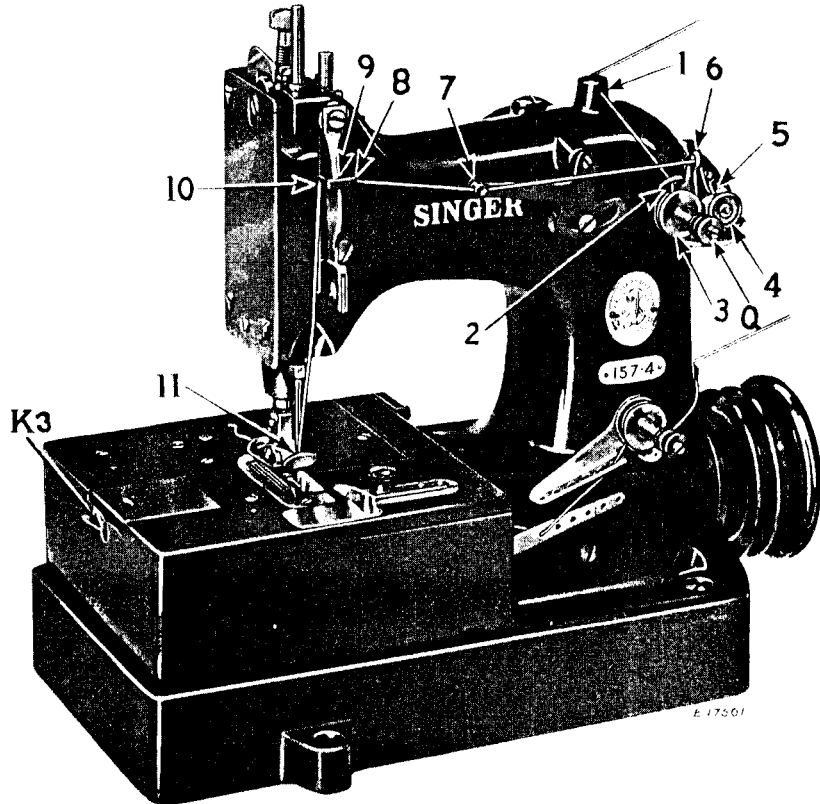


Fig. 5. Upper Threading

right to left through the guide 6, from right to left through the controller 7, to the left through thread take-up eyelet 8, to the left and in front of the thread stripper 9, to the left through the eyelet 10 in the thread take-up, then down and from front to back (away from the operator) through the eye 11 of the needle.

#### TO ADJUST TENSION ON NEEDLE THREAD

Increase needle thread tension by turning thumb nut Q, Fig. 5 over to the right, or lessen the tension by turning this thumb nut over to the left. The tension should be adjusted to control the needle thread for all lengths of stitches with as light a tension as possible on the thread.

### UNDER THREADING

Pass the thread from the unwinder from back to front through the hole A, Fig. 6, through the tension guide B, then over from right to left between tension discs C, down and from right to left through one of the

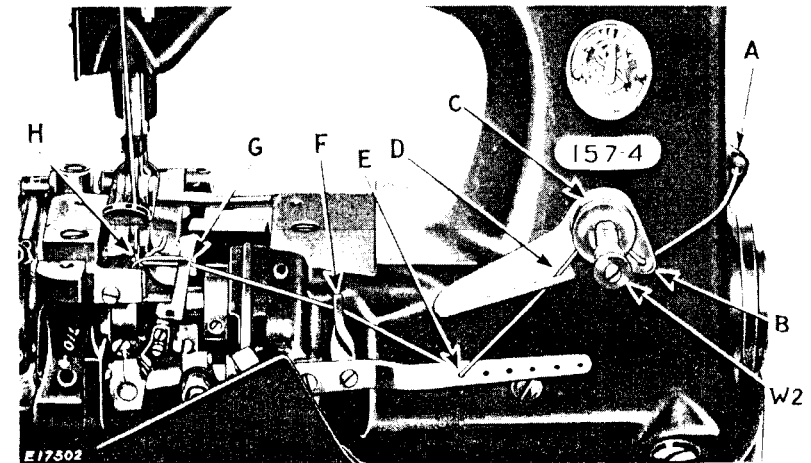


Fig. 6. Under Threading

holes of thread guide D, through the controller as indicated at E and F, then through the hole G in the heel of the looper, and from front to back (away from the operator) through the eye H near the point of the looper.

Draw about two inches of thread through the eye of the looper with which to commence sewing.

**NOTE:** The thread may be passed through any combination of holes in the thread guide D and thread controller E to meet the requirements of the work being sewn.

#### TO ADJUST TENSION ON LOOPER THREAD

Increase looper thread tension by turning thumb nut W2, Fig. 6 over to the right, or lessen the tension by turning this thumb nut over to the left. The tension on the looper thread should be light but sufficient to control the thread.

### TO REGULATE STITCH LENGTH

Stitch length is regulated by means of the large screw Y2, Fig. 7 which projects beyond the body of the feed eccentric on the rotary shaft. Draw out the slide in the cloth plate and turn the balance wheel to bring the

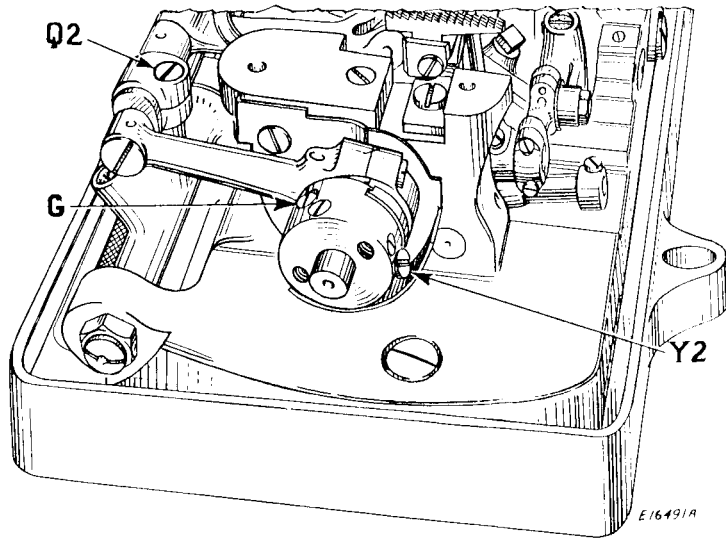


Fig. 7. Stitch Length Regulation

screw Y2 to a position where it is accessible through the slide plate opening. Loosen the lock screw G and turn the large screw Y2 to the left (outward) to lengthen the stitch. To shorten the stitch, turn the screw Y2 to the right (inward). When adjustment is completed, securely tighten lock screw G.

When making long stitches, if either end of the feed dog touches the throat plate, loosen screw Q2, Fig. 7, this screw being accessible through a hole in the top of the cloth plate, and, by means of the feed dog, push the feed bar in the required direction, then securely tighten the screw Q2.

When once correctly set, no further adjustment of the feed bar is necessary for either short or long stitches.



Fig. 7A

### TO REGULATE THE PRESSURE ON THE MATERIAL

To increase the pressure of the presser foot on the material, loosen lock nut H3, Fig. 7A and turn the thumb screw O2, Fig. 7A downward, or turn this thumb screw upward for less pressure, then securely tighten lock nut H3.

## INSTRUCTIONS

FOR

## ADJUSTERS and MECHANICS

### TO ADJUST THE NEEDLE THREAD NIPPER

Thread nipper 4, Fig. 8 assists the tension Q, Fig. 8 to hold the thread while the stitch is being set. The thread nipper is correctly adjusted when the machine leaves the factory, and no further adjustment should be neces-

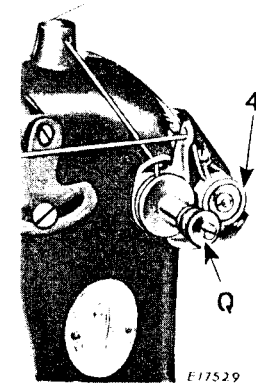


Fig. 8. Thread Nipper Adjustment

sary. However, if the nipper is subsequently removed from the machine, make sure, when replacing it, that the nipper cam D3, Fig. 9, on the end of the rock shaft, is set to insure that the nipper will close just before the

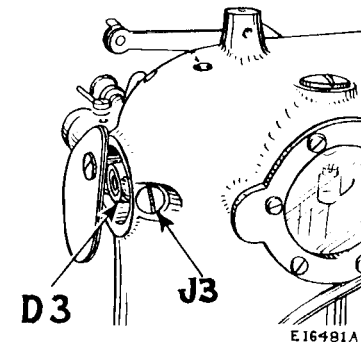


Fig. 9. Nipper Cam on End of Rock Shaft

eye of the needle reaches the goods in its descent. It should release the thread on the upstroke of the needle bar when the material, being fed forward, starts to draw the thread.

To make this adjustment, remove screw J3, Fig. 9 to gain access to the set screw in thread nipper cam D3. Turn balance wheel until nipper cam set screw can be reached with a screwdriver through the hole at J3. When adjustment is completed, securely tighten the nipper cam set screw and replace screw J3.



## TO TIME THE MACHINE

The needle and looper are driven by a crankshaft which is correctly timed at the factory and requires no adjustment.

However, the looper is adjustable to left or right in case such adjustment might later be considered necessary.

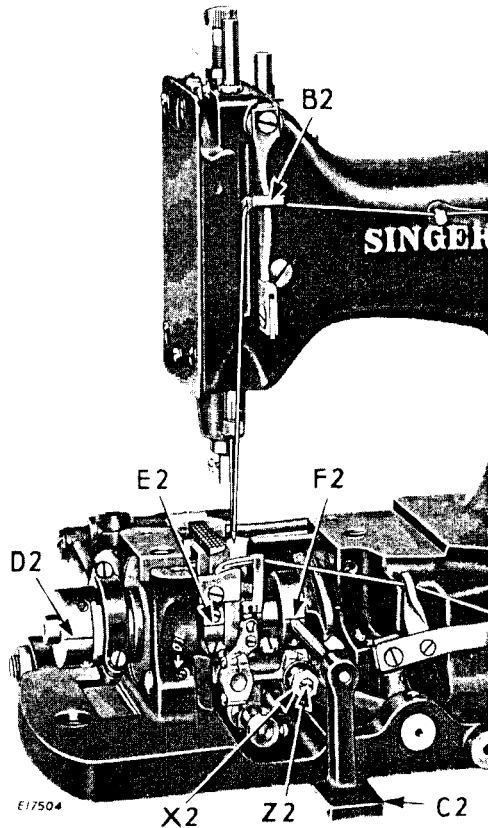


Fig. 10. Timing the Machine—(Using Gauge 130905)

The looper sidewise motion, the feed-lifting motion and the feed motion also are correctly timed at the factory. Should retiming later be considered necessary, proceed as follows:

Remove the presser foot and the cloth plate, then remove the machine from the iron base, and place the machine on the table or other smooth, level surface.

**CAUTION:** Before setting the machine on the table, remove the oil agitator which is attached to the lower end of the connecting rod. Other-

wise, rotating the balance wheel would cause the agitator to strike the table, with resulting damage to the machine. An alternative would be to provide a cut-out (for the agitator) in the table.

Turn the balance wheel over from you until the needle bar is at its highest position, at which time the top of the needle bar should be  $1\frac{31}{32}$  inch above the top of the needle bar bushing.

In case the needle bar bushing has been disturbed, it must be set with its top exactly  $\frac{1}{16}$  inch above the top of the arm casting.

To adjust, remove the face plate and face plate gasket, loosen the set screw which bears against the needle bar upper bushing, and move the bushing to correct position, viz: exactly  $\frac{1}{16}$  inch above the top of the arm casting, then securely tighten the needle bar upper bushing set screw. Replace the face plate gasket and face plate.

Should resetting of the needle bar be necessary, remove face plate and face plate gasket, and loosen the clamping screw in the needle bar connecting stud. The needle bar can then be set correctly, viz:  $1\frac{31}{32}$  inch above the top of the needle bar upper bushing, when needle bar is at the top of its stroke.

**CAUTION:** When retightening needle bar clamping screw, be sure that the thread take-up **B2**, Fig. 10 centers in its slot in the machine head and does not scrape against either side of this slot. Replace face plate gasket and face plate.

When needle bar is set at correct height, turn balance wheel over from you to bring needle bar down from its highest position to  $\frac{7}{8}$  inch above top of needle bar upper bushing. **These measurements are determined on the downward stroke of the needle bar.**

Next place gauge 130905 **C2**, Fig. 10, which is furnished for this purpose, on the table to locate the timing marks on the three eccentrics all in exact alignment with each other, as shown at **D2**, **E2** and **F2** in Fig. 10.

With the needle bar down to  $\frac{7}{8}$  inch above top of needle bar bushing, these three marks will be at center of the shaft, viz:  $2\frac{3}{16}$  inches from bottom of machine base. These eccentrics are provided with set screws for adjustment.

The foregoing timing is correct for most work done on this machine. However, the timing of any of these motions can be varied somewhat to meet special needs.

## TO SET THE LOOPER THE CORRECT DISTANCE FROM THE NEEDLE

When the needle bar is at the bottom of its stroke, point of looper should be approximately  $1\frac{1}{2}$  inch from center of needle. To adjust, loosen nut, **X2**, Fig. 10 and turn eccentric ball stud **Z2**, Fig. 10 to set the looper correctly with relation to the needle, then securely tighten nut **X2**.

**CAUTION:** The eccentric ball stud **Z2** must be set with its eccentric high throw in such position as to insure that, at the extreme left hand end of the looper stroke, no portion of the looper touches the needle guard.

## ADJUSTABLE GAUGE 138942

To facilitate various adjustments on Machines 157-3 and 157-4, Gauge 138942 can be furnished, on order, at extra charge.

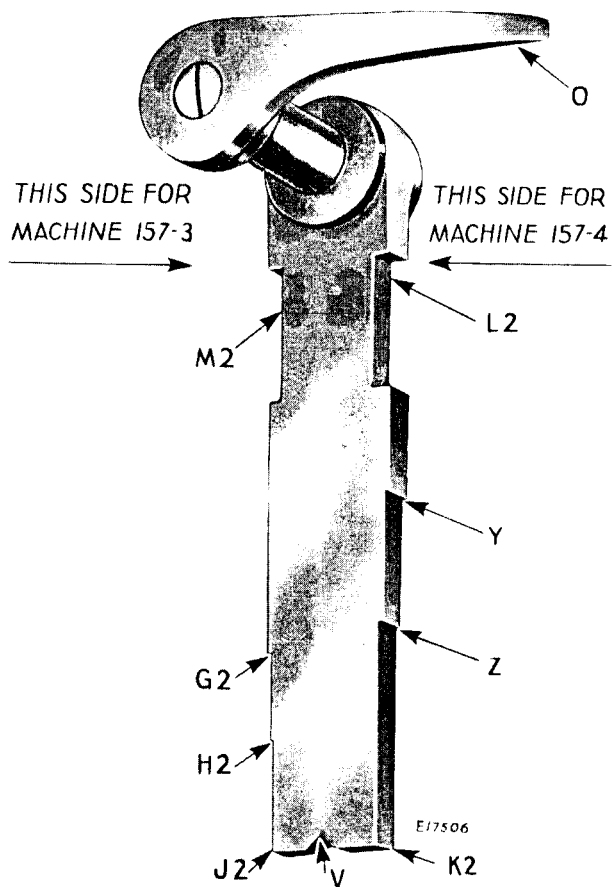


Fig. 11. Adjustable Gauge 138942

The timing of the machines, including the various operations described on pages 14 and 15, can be most conveniently and accurately accomplished by the use of this gauge which is especially recommended for installations involving several machines, as it is unnecessary, when using this gauge for timing, to remove the machine from the base or bench.

The clearances, indicated by the stops on the right hand side of the gauge, are for Machine 157-4, while those on the left hand side are for Machine 157-3. The movable indicating arm O is for both machines.

This gauge provides for the clearances mentioned on pages 14 and 15, and the adjustments, for which this gauge is designed, are as follows:

**Y or G2**—To set the needle bar correctly for its highest position, as illustrated in Fig. 12. Turn balance wheel over from you until the needle bar is at the top of its stroke, as instructed on page 15.

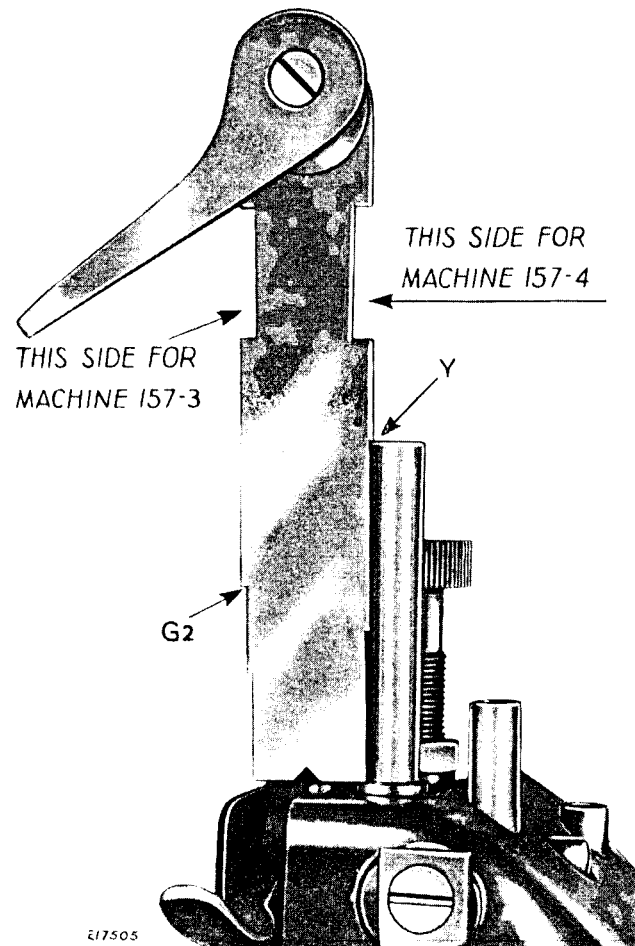


Fig. 12. Setting Needle Bar for Highest Position

**Z or H2**—To determine the correct height of the needle bar on its downward stroke. Turn the balance wheel over from you until the needle bar descends to the stop Z or H2. With the needle bar in such position, the three timing marks D2, E2 and F2, Fig. 13, page 18 should all be in exact alignment with each other.

Should adjustment be required, proceed as instructed in paragraph O, page 18.

○—To align the three timing marks D2, E2 and F2, Fig. 13, remove the presser foot and the cloth plate. Place the flat portion N2, Fig. 13 of the gauge on the machine casting at R2, Fig. 13 and turn the indicat-

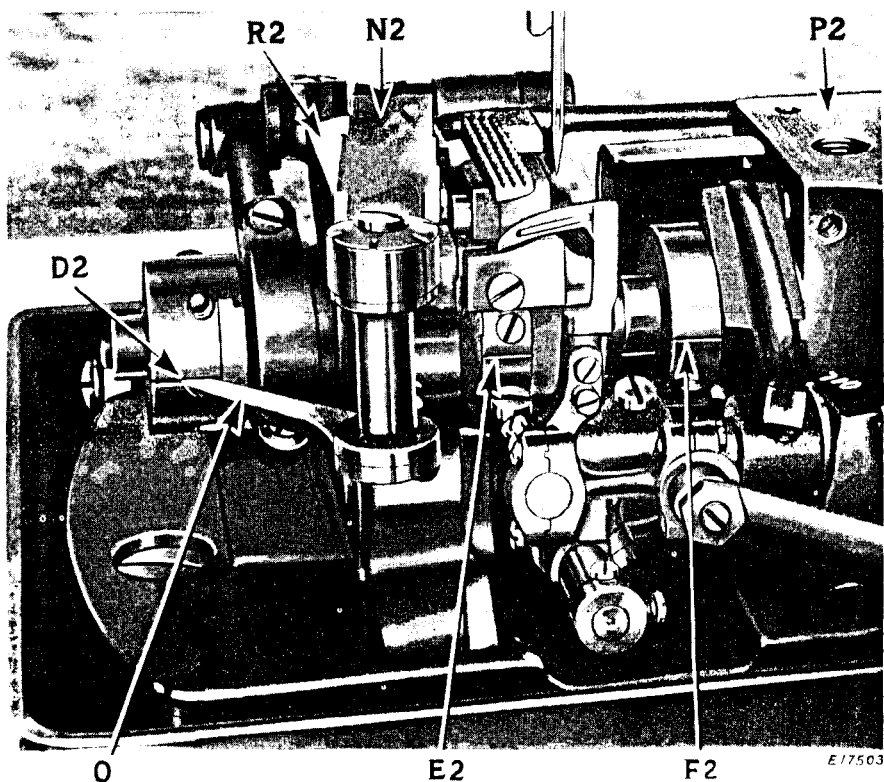


Fig. 13. Timing the Machine

ing arm of the gauge so that its tip can enter the mark on the eccentric D2 as shown. Then turn the indicating arm ○ so that its tip can enter the mark on eccentric E2. Next place the flat portion N2 of the gauge on the casting at P2 to contact the mark on the eccentric F2. These eccentrics are provided with set screws for adjustment.

L2 or M2—This step is to determine the correct height of the feed dog when at its highest position.

With the cloth plate in place on the machine, but with the presser foot removed, lay the gauge on its edge across the throat plate. Turn the balance wheel over from you until the feed dog reaches its highest position. The feed dog should then touch the cut at L2 or M2.

Should adjustment be necessary, loosen the feed dog screw and set the feed dog at correct height, viz: so that, at its highest position, it just touches the cut L2 or M2 of the gauge, then securely tighten the feed dog screw.

NOTE: The use of this gauge, in setting feed dog at correct height, requires that the cloth plate be in place on the machine. The feed dog screw can be reached with a screwdriver through the screwdriver clearance hole at the left hand end of the cloth plate. This hole is shown at K3 in Fig. 5, page 8.

K2 or J2—Is for determining the correct distance from the center of the needle to the point of the looper.

To adjust, remove the cloth plate and feed dog and turn the balance wheel over from you to bring the needle down to its lowest position, at which time the looper should be at the extreme end of its backward move-

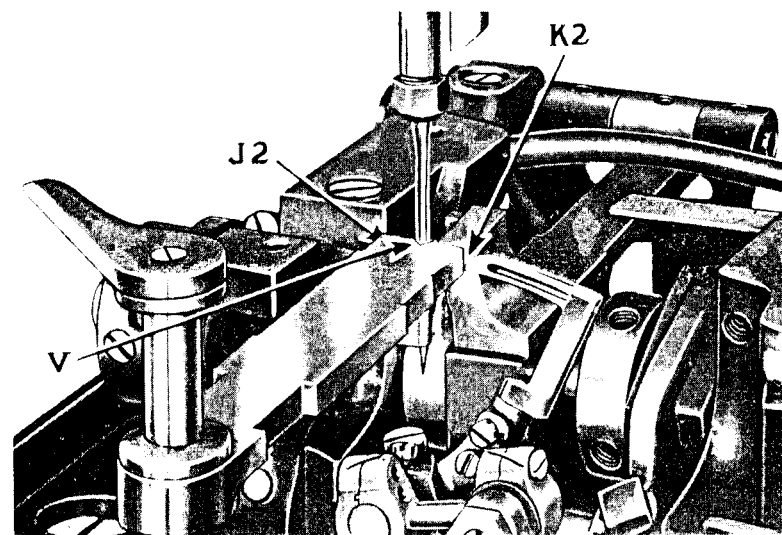


Fig. 14. Setting Looper with Relation to Needle

ment. Hold the gauge as shown in Fig. 14, having the needle in the notch V as shown above. The point of the looper should then be at the edge K2 or J2 of the gauge, as indicated in Fig. 14.

If adjustment is necessary, proceed as instructed on page 15 under the heading "To Set the Looper the Correct Distance from the Needle."

### TO CHANGE THE SIDWISE POSITION OF THE LOOPER WITH RELATION TO THE NEEDLE

The looper is made with a flat to insure the correct angle of the looper with relation to the needle when the looper is attached to the looper carrier by the two set screws.

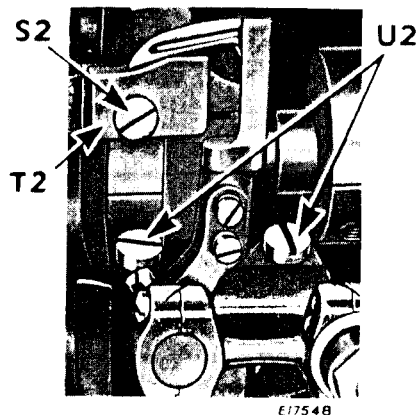


Fig. 15. Looper and Needle Guard Adjustment

Should the looper pass too close to, or too far away from, either the front or the rear side of the needle, loosen the two clamping screws **U2**, Fig. 15 in the looper carrier holder, and set the looper to provide the required clearance at both the front and rear sides of the needle, then tighten the two screws **U2**.

### TO ADJUST THE NEEDLE GUARD

The needle guard **T2**, Fig. 15 is capable of slight adjustment to accommodate the diameter of the needle being used. To adjust, loosen screw **S2**, Fig. 15 and set the guard as required, then securely tighten the screw **S2**.

The detachable portion **T2** of the needle guard, is furnished in various sizes to accommodate needles of corresponding sizes. Regularly furnished with each machine are needles Sizes 26 and 27 and needle guards Sizes 26 and 27. Sizes 28 and 29 needles cannot be used with the smaller sizes of needle guards. Needle guards Sizes 28 and 29 must be ordered for needles of these sizes.

### TO SET THE FEED DOG

For medium weight bags of burlap and similar softer materials, the feed dog should lift the presser foot from .095 to .110 inch above the top surface of the throat plate.

**NOTE:** This adjustment may be varied slightly according to the material being stitched.

The feed dog is adjustable for height by means of the screw which fastens it to the feed bar. This screw is accessible through the screwdriver clearance hole at the left hand end of the cloth plate. This hole is shown at **K3** in Fig. 5, page 8.

### TO ALIGN THE FEED DOG IN THE THROAT PLATE SLOT

The feed dog should be equi-distant from both sides of the throat plate slot.

Loosen the two nuts **O2**, Fig. 16 and, to move the feed dog away from the balance wheel end of the machine, by means of a screwdriver turn the hinge pin **A3** outward, and turn the hinge pin screw bushing **B3** inward; or turn the screw bushing **B3** outward and turn the hinge pin **A3** inward to move the feed dog toward the balance wheel end of the machine.

**NOTE:** The hinge pin screw bushing **B3** is accessible with a regular screwdriver after removal of the machine base oil strainer cover **S3**, but an offset screwdriver is required for the hinge pin **A3**. If such a screwdriver is not available, the machine should be removed from the base in order to make this adjustment.

If the feed rocking frame **C3** is moved sidwise in either direction to an extent which exhausts the sidwise play of the feed connecting rod **P3**, loosen the clamping screw **R3** to provide some slight sidwise play for the feed connecting rod **P3**.

When the feed dog has been properly set with relation to the sides of the throat plate slot, securely tighten screw **R3** and, while holding the hinge pin **A3** and the hinge pin screw bushing **B3** with a screwdriver, securely tighten the nuts **O2**.

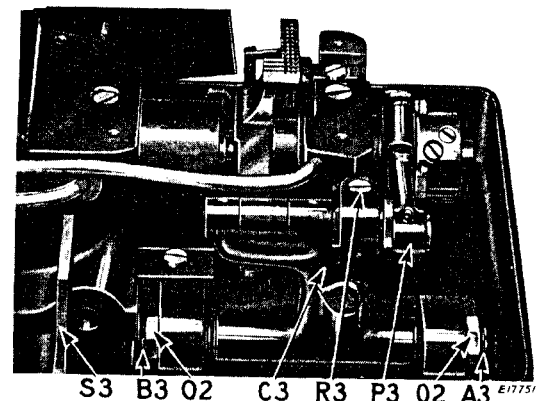


Fig. 16. Alignment of Feed Dog in Throat Plate Slot

### PRESSER FOOT LIFT

The presser foot should be set to lift  $\frac{7}{16}$  inch above the top surface of the throat plate.

### TO REMOVE ARM ROTARY SHAFT FLANGED BUSHING

To remove the arm rotary shaft from the machine, the flanged bushing **B4**, Fig. 17 should first be removed as follows:

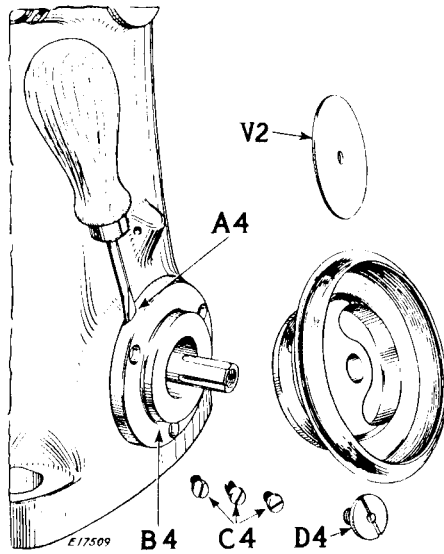


Fig. 17. Removing Arm Rotary Shaft Flanged Bushing

Remove the large screw **D4** and loosen the two set screws in the belt groove of the balance wheel, then remove the balance wheel together with the finger guard **V2** from the arm shaft.

Remove the three screws **C4** which fasten the bushing **B4** in position. Then insert a screwdriver in the notch in the edge of the bushing, as shown at **A4** in Fig. 17, and pry off the bushing.

When replacing the balance wheel on the arm rotary shaft, be sure the two set screws enter the groove in the shaft.