

SINGER
176-35

USE SINGER[®] OILS and LUBRICANTS

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

*The following is the correct lubricant
for the 134w, 152 and 231 Machines:*

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.

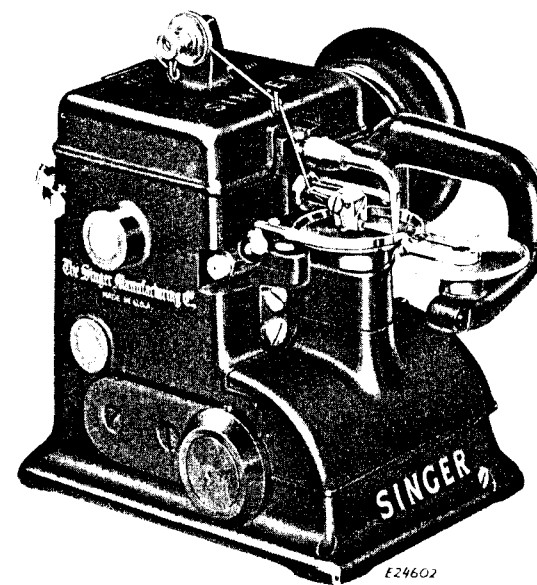
Form 20162
(Rev. 1154)



TO ALL WHOM IT MAY CONCERN:

The improper placing or renewal of the Trade Mark "SINGER" or any other of the Trade Marks of The Singer Manufacturing Company (all of which are duly Registered Trade Marks) on any machine that has been repaired, rebuilt, reconditioned, or altered in any way whatsoever outside a SINGER factory or an authorized SINGER agency is forbidden.

INSTRUCTIONS FOR USING AND ADJUSTING **SINGER[®]** SEWING MACHINE 176-35



DESCRIPTION

Machine 176-35 is a one-needle, one-looper, single-thread, over-seam stitch, disc-feed machine for closing and ornamenting cloth or leather gloves, or combination of cloth and leather gloves.

It is provided with knee control for spreading the discs to release the work.

Needle bar stroke is 1 $\frac{1}{8}$ inch.

Stitch length is adjustable to produce from 6 to 32 stitches to the inch.

THE SINGER MANUFACTURING COMPANY

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TO SET UP THE MACHINE (See Fig. 2)

Table 29738, shown in Fig. 2, has the necessary holes bored when shipped from the factory, viz.: Two holes for the machine driving belt, the hole for the feeding disc opening chain, and the hole for the drain plug in the machine base.

Set the machine base-plate on the table, with the large hole in base-plate to the right and so that the drain-hole plug and the hole in the base-plate (for the feeding disc opening chain) coincide exactly with the two holes provided for the purpose in the table; thus the two belt holes will be to the right of the base-plate. Fasten base-plate to the table with four wood screws.

Place the machine on the base-plate and tip the machine over to the right so that it rests upon the balance wheel, then, through the bottom of the machine, hook the feeding disc opening chain into the hole in the end of the pressure lever which is located inside the machine. Start the other end of the chain down through the chain hole in the base-plate and the table. Tip the machine back into operating position and fasten it to the base-plate with the four special screws furnished. Attach the machine-driving belt, which should center in the belt holes in the table.

Attach the idler pulley bracket **B** to the under side of the table, by means of the two wood screws provided for this purpose, with the idler pulley **B2** parallel with the front edge of the table and in such position that the chain **E**, hanging through the center of the hole in the table, will engage the groove of the idler pulley **B2**.

Next, using the three wood screws provided for this purpose, attach the knee lever rock shaft bracket **C** to the under side, and near the front edge, of the table at the point convenient for operation by the right knee of the operator. Generally, the bracket **C** is placed in a position which brings the rock shaft **D** about in line with the belt holes. Now lead the chain **E** to the right under the idler pulley **B2** and attach the end of the chain to the hook in the feed disc opening bracket **A**. The chain **E**, when connected, should parallel the front edge of the table. This can be accurately adjusted by setting the bracket **A** in the required position on the rock shaft **D**. The knee plate **G2** is adjustable for height to suit the operator. During operation the right foot of the operator rests upon the treadle **H2**.

Belt Hole Guard 152051, which accompanies the machine, prevents the work from coming in contact with the driving belt, and prevents dirt and other foreign matter from dropping down through the belt holes and fouling the driving equipment. It should be attached to the top surface of the table by means of the two wood screws furnished with the machine. The correct position of this belt guard, with relation to the driving belt, is shown in Fig. 1A. The guard should be set close to, but not in contact with, the driving belt.

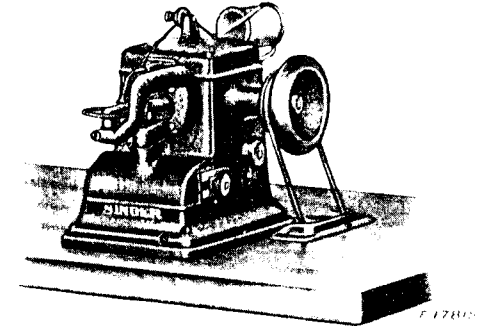


Fig. 1A
Belt Guard 152051
in Position

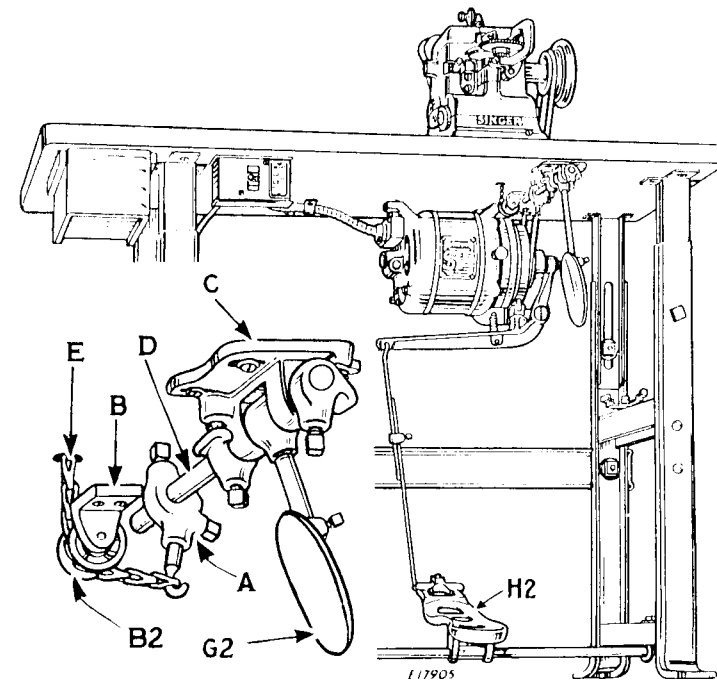


Fig. 2. Setting Up Machine 176-35
(Showing Table 29738 and Stand 46946)

SPEED

The maximum speed recommended is 1800 stitches per minute. The balance wheel should always turn over away from the operator.

TO OIL THE MACHINES

To insure easy running and prevent unnecessary wear of the parts which are in movable contact, the machine requires oiling every day.

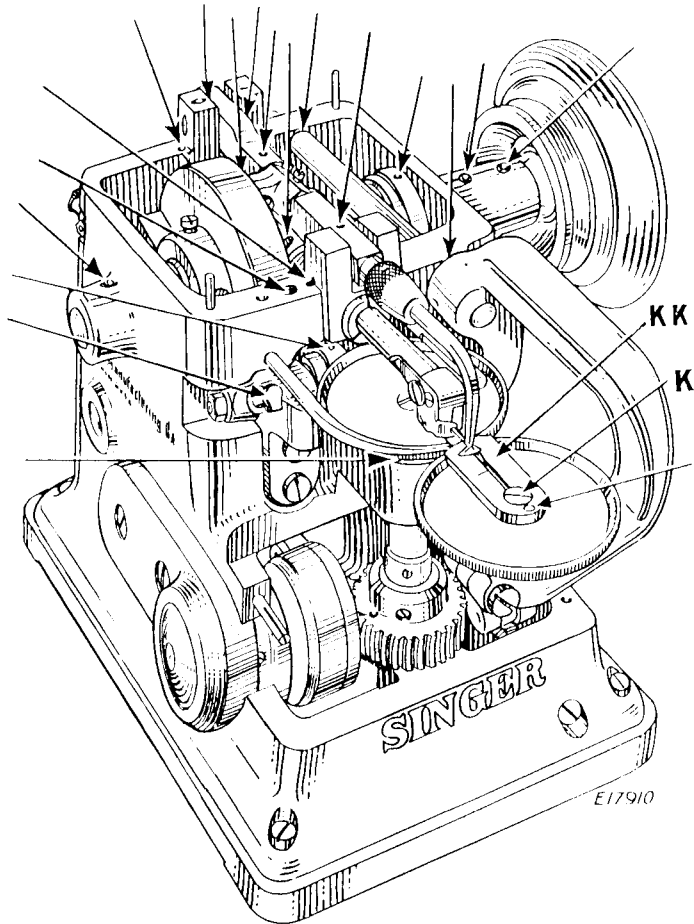


Fig. 3. Oiling Points at Front, Top and Left

To oil the machine, apply **MANUFACTURING SEWING MACHINE OIL—HEAVY GRADE—STAINLESS OIL** (sold only by Singer Sewing Machine Company) to all of the oiling points indicated in **Figs. 3, 4 and 5**, by unlettered arrows.

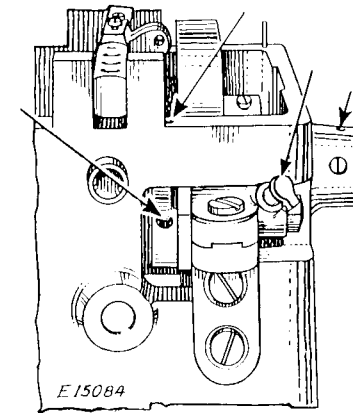


Fig. 4. Oiling Points in Rear of Machine

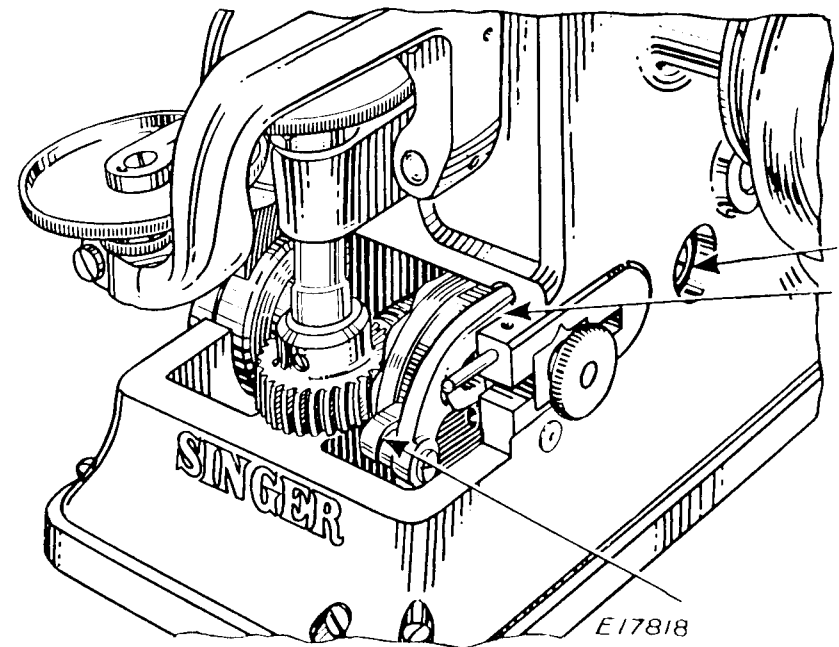


Fig. 5. Oiling Points on Right of Machine

KEEP MACHINE CLEAN (See Fig. 3)

To get the best results, every "SINGER" glove Sewing Machine should be cleaned every day while in active service. Allowing the machine to accumulate dust, dirt and other foreign matter will greatly impair its efficiency. If kept clean, the machine will not only do better work but will operate much longer and at less expense for repairs.

Take out the screw **K**; remove the needle guide **KK** and remove any foreign matter which may have accumulated beneath the needle guide. When replacing the guide **KK** make sure that the guide is set to insure that the needle centers in the needle groove in this guide, then firmly tighten screw **K**.

NEEDLES

Needles for this machine are of **Class** and **Variety** 176x3, and are made in sizes 6, 9, 11, 12, 14, 15, 16, 17, 18, 19 and 21.

The sizes most generally used are as follows:

Size 14 for Cloth Gloves

Size 18 for Leather Gloves

The size of the needle is determined by the size of the thread which must pass freely through the eye of the needle. 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:

"6 doz. No. 14, 176x3 Needles"

The best results will be obtained when using the needles sold by Singer Sewing Machine Company.

TO SET THE NEEDLE (See Fig. 6)

Turn the balance wheel until the looper swings out of the way as shown below, and open the feed discs.

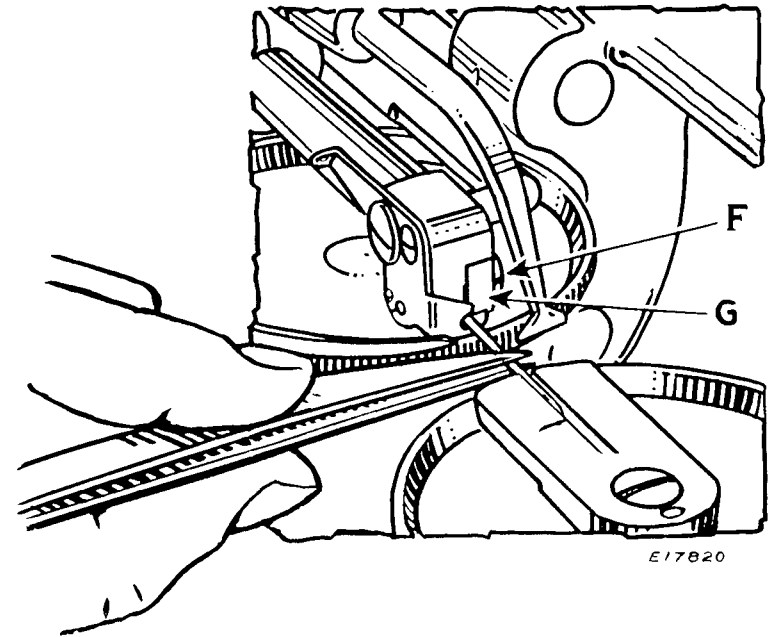


Fig. 6. Inserting the Needle

Holding the needle in tweezers with its short groove up, place it into the needle groove in the needle bar, under the clamp **G**, and push it back as far as it will go, then tighten the clamp screw **F**.

Never release the needle clamp more than is necessary to free the needle, and, before inserting a needle, make sure that a piece of broken needle is not left in the groove.

TO THREAD THE MACHINE

(See Fig. 7)

Pass the thread from the spool on the spool holder 1 at the rear of the machine, then through the thread guide 2, forward and over between

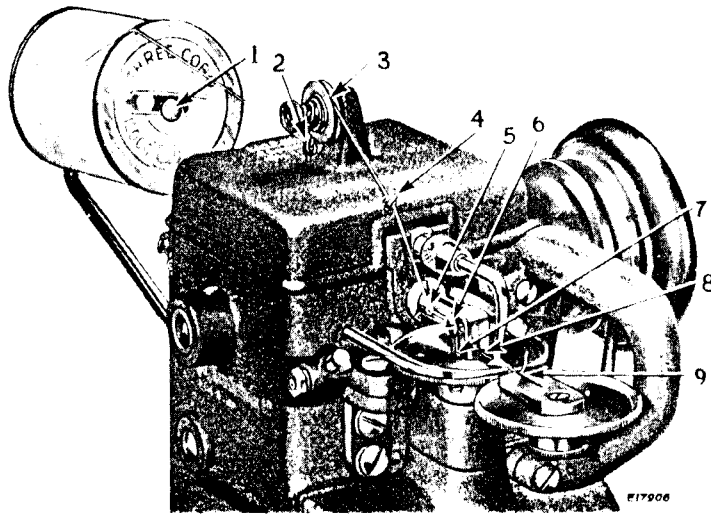


Fig. 7. Threading the Machine

the tension discs 3, forward through the thread guide 4, down and through the hole 5 in the needle bar tension plate. Now turn the balance wheel until the needle bar tension plunger 6 opens, and, holding the thread stretched tight in both hands, open the front disc and pass the thread under the needle and **back under the needle bar** into the thread slot 7. With the left hand, loop the thread over the tension plunger 6, then draw forward the end held in the right hand, close up under the needle bar and into the hole 8 in the tension plate through which the needle protrudes, then, from the underside, pass the thread up through the needle eye 9, leaving about two inches of thread with which to commence sewing.

TO CHANGE THE LENGTH OF STITCH

Loosen the round thumb nut H, Fig. 8, page 10 on the lower right hand side of the machine and move it toward you for a shorter stitch, or away from you for a longer stitch.

THREAD TENSION

The tension on the thread is regulated by turning the thumb nut at the left of the tension discs, on top of the machine.

TO REGULATE THE PRESSURE OF THE FEED DISCS

The pressure between the feed discs may be increased by turning the screw N, Fig. 8, page 10 to the right, or decreased by turning this screw to the left. Do not use a heavier pressure than is necessary for positive feeding of the work.

REGARDING ORDERS FOR THE MACHINE

When ordering "SINGER" glove sewing machines or when returning machines for adjustment or repairs, always include a few scrap pieces of material, showing the lightest as well as the heaviest material being used; also a spool of thread. The machine can then be adjusted at the factory to exactly meet the requirements. These adjustments should not be disturbed.

**SINGER Needles should be used
in SINGER Machines
These Needles and their Containers
are marked with the
Company's Trade Mark "SIMANCO.*" 1**

**Needles in Containers marked
"FOR SINGER MACHINES"
are NOT SINGER made needles. 2**

INSTRUCTIONS for ADJUSTERS and MECHANICS

TO ADJUST THE FEED DISCS IN RELATION TO THE NEEDLE

(See Fig. 8)

Both discs on these machines should be set to a height where the needle, at or just forward of its eye, barely clears the rim of the disc. Both discs should be adjusted to the needle and should be held apart while adjustment is being made.

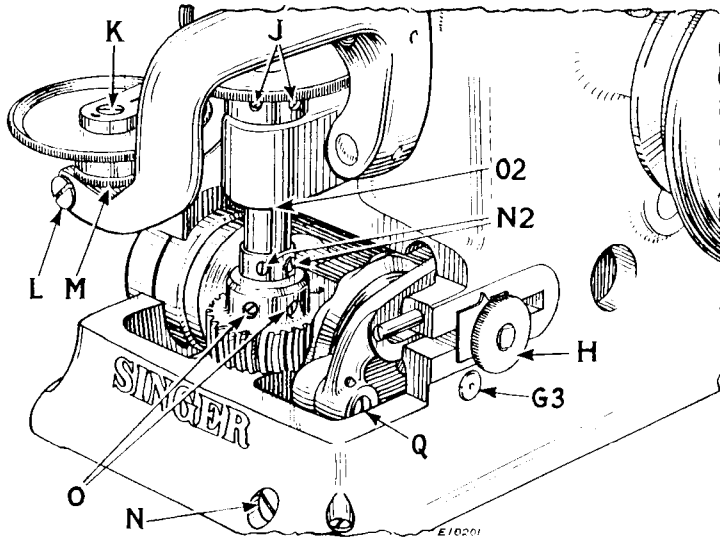


Fig. 8. Adjusting the Feed Discs

To Adjust the Rear Disc, loosen the two set screws N2 in the back feeding disc shaft reinforcing sleeve; also loosen the two set screws O in the hub of the back feeding disc worm gear; then, by means of the treadle, hold the front disc disengaged from the back disc and set the back disc up or down as required. With the worm gear down against its seat tighten the two screws O, then tighten the two screws N2 in the reinforcing sleeve, making sure that the upper end of the sleeve is against the machine casting at O2.

To Adjust the Front or Idler Disc, loosen screw L and adjust the disc to the needle by turning the knurled flange of disc stud M to the left to lower the disc, or turn the knurled flange to the right to raise the disc. Should the needle guide be in the way of the needle while making this adjustment, loosen screw K and turn the guide aside, then retighten screw K slightly. When the disc is set at correct height, loosen screw K, move needle guide back into position so that the needle will be located centrally in the needle groove of the guide, and securely tighten screw K.

TO REMOVE THE FEED DISCS

(See Fig. 8)

To Remove the Idler Disc, remove screw K and lift off the idler disc, being careful not to lose the bearing rollers for this disc.

To Remove the Idler Disc Complete (including the bearings Housing and the bearings), loosen clamping screw L and unscrew complete idler disc assembly from feeding disc arm.

CAUTION. When replacing the idler disc assembly, operate the knee control to move the feeding disc arm forward (as when spreading the discs) while screwing the idler disc assembly into the feeding disc arm, otherwise the teeth on the two discs may be damaged.

To Remove the Feeding Disc, loosen the two set screws O in hub of back feeding-disc worm gear; also loosen the two screws N2, and the two screws J, then drop feeding disc shaft down until feeding disc can be removed.

TO SET THE NEEDLE BAR

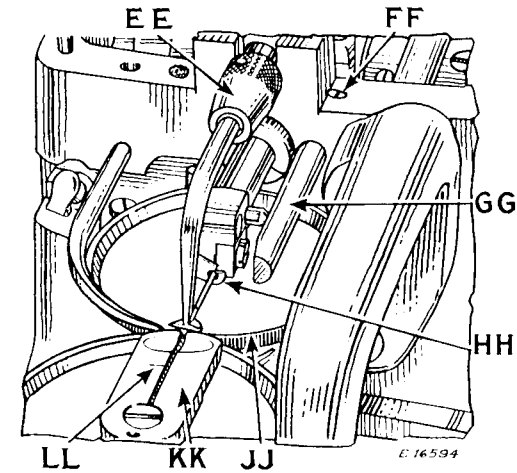


Fig. 9. Setting the Needle Bar

Loosen the two clamping screws DD, Fig. 10, page 12 and then set needle bar to bring center of needle eye opposite mark LL, Fig. 9, on needle guide KK, Fig. 9, when needle bar is all the way forward and when the feed discs are together.

TO SET THE NEEDLE BAR TENSION RELEASE

(See Fig. 9)

The tension plunger on the needle bar should release the thread about the time the looper has taken up the slack in the thread after it has entered the loop. This adjustment usually is varied somewhat for different materials and for different threads.

The post GG should be moved inward (toward the machine) for a later release, or outward (away from the machine) for an earlier release of the thread, after loosening the small set screw FF. Always tighten screw FF after adjusting tension release.

ADJUSTMENT FOR WEAR IN THE NEEDLE BAR

(See Fig. 10)

The needle bar bushing **Y** is split and may be drawn in, to take up any play which develops, by turning the threaded collar **Z** in the direction indicated by the arrow stamped upon it. This collar is provided with holes and may be tapped around the needle bar with a small punch.

See that the needle bar is turned so that the side of the tension plate **HH**, Fig. 9 is about square with the surface of the disc. Align the groove

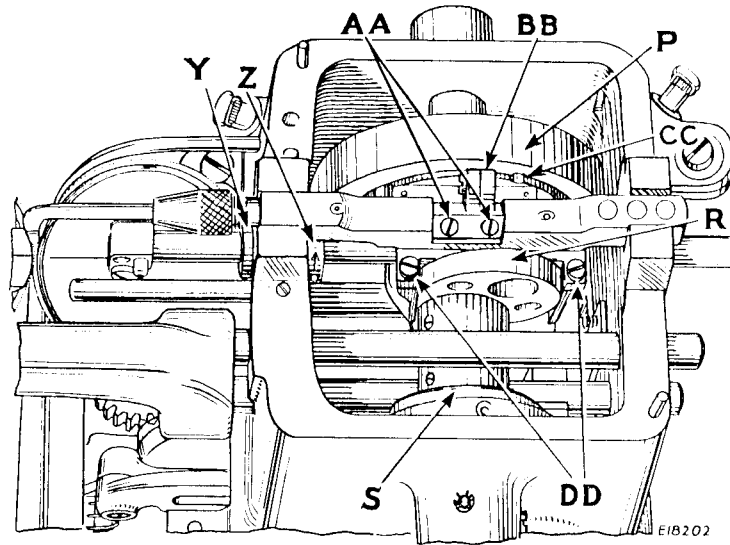


Fig. 10. Needle Bar Adjustments

in the needle guide **KK**, Fig. 9, with the needle, and see that the needle centers in the groove of guide **KK**. Tighten the clamping screws **DD**, but make sure that the clamping screws are not too tight.

TO REMOVE THE LOOPER CAM ROLLER

(See Fig. 10)

To remove the looper cam roller, without disturbing the cam, loosen the two set screws **AA**, draw out the looper shaft and remove roller arm **BB** with the roller. The roller can be removed or replaced in the cam raceway only through the cut at **CC**. When replacing the looper shaft, make sure that the flat on the shaft is engaged by the two screws **AA**.

TO ADJUST THE LOOPER

(See Fig. 11)

With the needle bar and feed discs properly adjusted, insert the shank of the looper in the holder and tighten the clamping nut **EE**, Fig. 9 sufficiently to insure that the looper will remain in position while making adjustments. Turn the balance wheel until looper is at extreme front end of its

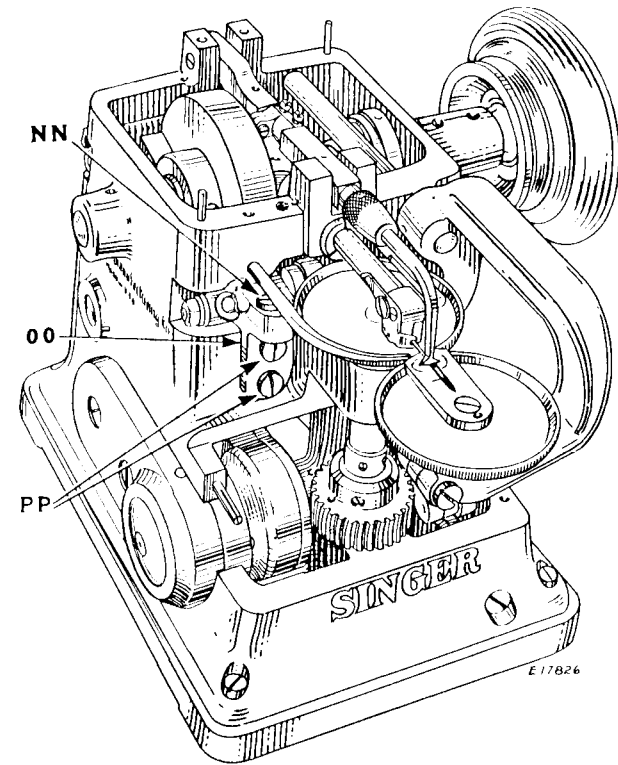


Fig. 11. Adjustments on the Looper

stroke, when it should stand about centrally over the groove in the needle guide; also adjust it in or out so that it covers about half of the needle eye and leaves half of the needle eye visible when looking straight down the front of the looper as shown in Fig. 11.

Adjust the looper for height by loosening the screws **PP** and moving the bracket **OO** up or down until the looper clears the bottom of the looper clearance cut in the needle guide by a scant $\frac{1}{16}$ inch, then tighten the screws **PP**. When adjustment of looper shaft rear adjusting bracket **X2**, Fig. 12 is disturbed, it must be adjusted in conjunction with front bracket **OO** to properly set the looper. The rear bracket **X2** is adjusted the same as front bracket **OO**.

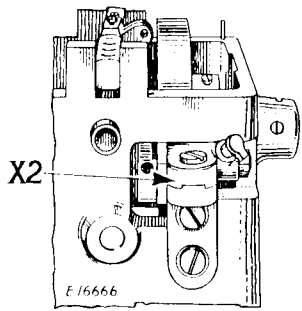


Fig. 12

Now turn the balance wheel until the looper has moved to the extreme end of its backward stroke, then continue turning the balance wheel slightly until the looper reaches a point nearest to the left side of the needle. With the looper in this position, adjust it sidewise until it barely touches, but does not deflect, the needle. If the needle does not clear the sloping top surface of the looper heel, loosen screw **NN** and move the top portion of looper bracket **OO** forward, or outward, thus lowering the looper on its extreme back stroke until the needle just clears, but does not touch, the sloping top surface of the looper heel, as shown in Fig. 9, page 11. If the needle comes too far above the heel

of the looper, first make certain that the looper is set at correct height above the bottom of the clearance cut in the needle guide, then loosen screw **NN** and move the top portion of bracket **OO** backward, or inward. When correct adjustment is made, firmly tighten screw **NN**.

After clamping nut **EE**, Fig. 9, page 11 is finally tightened, turn the machine over rapidly a few times by hand to determine that the looper does not strike anywhere. Finally a test should be made with the machine running at full speed to make sure that the looper does not strike the needle, needle guide or rear disc.

TO TIME THE LOOPER (See Fig. 10, page 12)

When the machine leaves the factory, the looper is timed for normal conditions, so that the timing marks "T" on the looper cam **P**, the needle bar eccentric **R** and the feed eccentric **S**, are in line with each other. To time the looper, loosen the two set screws in the looper cam **P**. Move the cam over away from you to time the looper earlier, or over toward you to time the looper later. Then securely tighten the two set screws in the looper cam **P**.

TO REMOVE THE FEED CLUTCH (See Fig. 13)

To remove the feed clutch, first remove the machine from the base plate, setting it on end, as shown in Fig. 13. Then remove the screw **A3** and the screw **Q** at opposite ends of the lever **B3**. Loosen the two set screws **C3** in the worm wheel **E3** and the three set screws in the clutch **F3**. Tap the shaft **G3**, Fig. 8, moving it from right to left. Worm wheel **E3** and lever **B3** will then fall out.

Complete removal of shaft **G3**, Fig. 8 will reveal three screws behind hub **H3** of shaft, that hold clutch to the casting. Remove these screws and clutch will fall out.

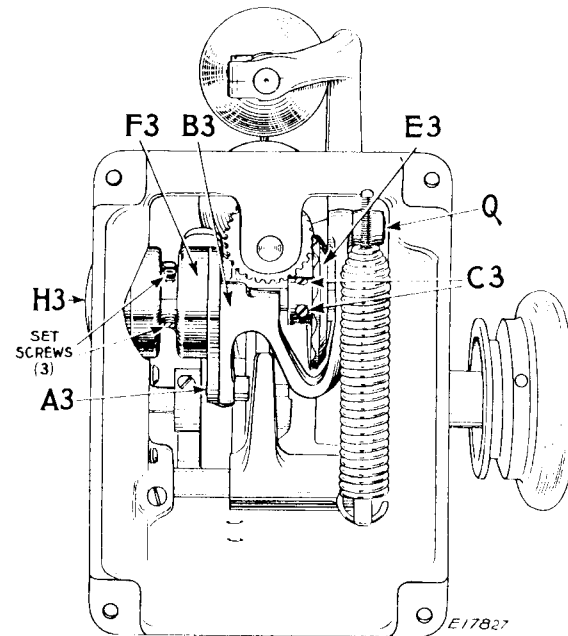


Fig. 13. Removing and Replacing Feed Clutch

ADJUSTMENT FOR WEAR IN THE FEED CLUTCH (See Fig. 14)

The feed clutch consists of two units, each having three rollers, bearing against removable hardened steel wearing plates **J3**. After considerable use, the rollers may wear shallow grooves in the steel plates, which will result in an uneven stitch.

By simply turning the plates **J3**, six new wearing surfaces can be used before replacing the new wearing plates.

To remove and replace the wearing plates **J3**, insert the three screws in the holes **K3** in the open end of the clutch. By pulling firmly on these screws, the driver **L3** can be removed from the clutch housing, freeing the rollers **M3** and the springs **N3**.

The wearing plates **J3** may then be easily slipped out of place and turned as desired.

When the wearing plates have been slipped into position, replace the driver **L3** halfway into the open end of clutch housing, making sure that the driver is in the correct rotary position, as shown in Fig. 14. Then insert the springs **N3**. Insert the rollers **M3** against the springs, one at a time. Then press entire assembly firmly into the housing.

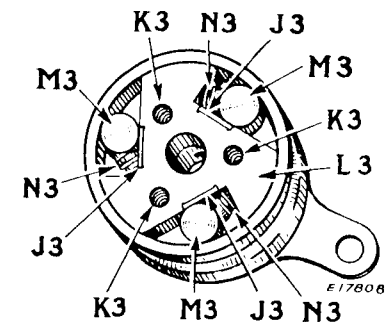


Fig. 14. Correct Position of Driver in Open End of the Feed Clutch

To remove and replace wearing plates at the other end of the clutch, put driving arm **O3**, Fig. 15 into the jaws of a vise and gently pull clutch housing free of driving arm. The rollers and the springs will fall out at the same time.

Then remove the three screws **P3**, Fig. 15 and change the wearing plates, where necessary.

When wearing plates are in place, put the driver **Q3**, Fig. 15 halfway into clutch housing, making sure that the driver is in the correct rotary position, as shown in Fig. 15.

Then insert rollers against the springs, one at a time. Press entire assembly into clutch housing. Place driving arm **O3** over proper end of clutch and replace screws **P3**.

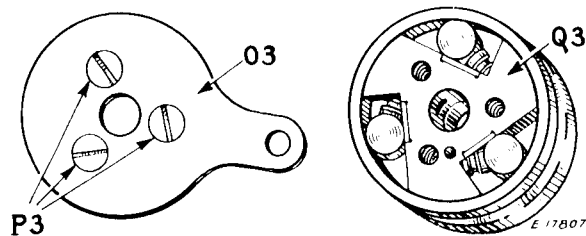


Fig. 15. Showing Driving Arm and Correct Position of Driver in the Driving End of the Feed Clutch

TO REPLACE THE FEED CLUTCH

Before replacing the clutch in the machine the entire clutch assembly must be aligned, by inserting the shaft in one end of the clutch, and slowly rotating the clutch housing backward and forward, with one hand, while pressing firmly on the hub of the shaft with the other hand, until the shaft slips through the clutch housing. Hammering or otherwise forcing this alignment will be of no avail and may injure the moving parts.

When the clutch assembly is aligned, **carefully** remove the shaft and place open end of clutch against clutch seat in the head of the machine. Insert shaft, temporarily, from **right to left** through casting and clutch. Press clutch assembly together with your fingers and fasten it to clutch seat with 3 screws. Securely tighten the 3 screws, **carefully** remove the shaft from the machine and **immediately** replace the shaft from **left to right** through the casting and clutch assembly. Then slip shaft through lever **B3** and gear **E3**, as shown in Fig. 13.

Replace screw **Q**, Fig. 13 and screw **A3**, Fig. 13 in lever and connecting arms. Then while firmly pressing hub **H3** against casting, tighten the three set screws in the clutch, making sure that the first set screw tightened is on the "flat" of the shaft. When gear **E3** is properly engaged, tighten the two set screws **C3**, making sure that the first set screw tightened is on the "flat" of the shaft.

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