

SINGER
253-1 AND 253-2

USE ONLY **SINGER*** OILS and LUBRICANTS

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

*The following are the correct lubricants for the
241, 253, 400w and 410w Machines:*

TYPE A — MANUFACTURING MACHINE OIL, LIGHT
GRADE

When a stainless oil is desired, use:

TYPE C — MANUFACTURING MACHINE OIL, STAIN-
LESS, LIGHT GRADE

OTHER **SINGER** LUBRICANTS

TYPE E — STAINLESS THREAD LUBRICANT

For lubricating the needle thread of sewing machines for
stitching fabrics or leather where a stainless 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 or in 55 gallon drums.

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.

20454

ADJUSTERS MANUAL

FOR

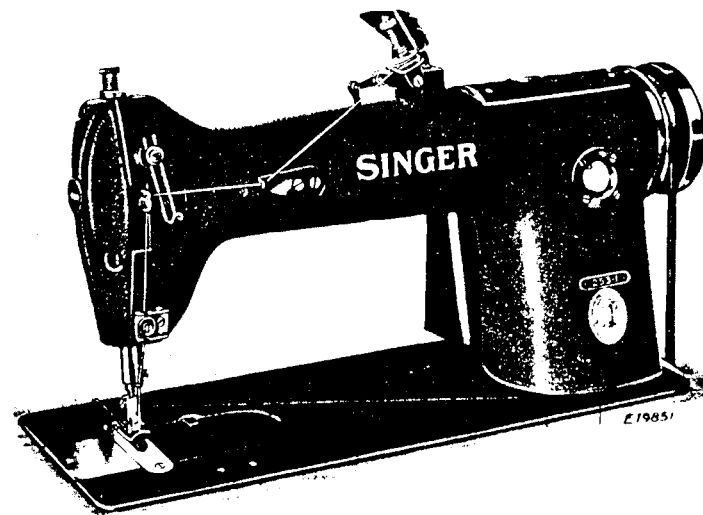
SINGER*

SEWING MACHINES

253-1 and 253-2

ONE NEEDLE AND ONE LOOPER
TWO-THREAD CHAIN STITCH

AUTOMATIC OILING SYSTEM



CAUTION: Special attention is called to the
lubricating instructions on pages 4 and 5

*A TRADE MARK OF

THE SINGER MANUFACTURING COMPANY

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.

THE IMPORTANCE OF USING **SINGER*** PARTS AND NEEDLES IN **SINGER** MACHINES

The successful operation of SINGER machines can only be assured if SINGER parts and needles are used. Supplies are available at all SINGER Shops for the Manufacturing Trade, and mail orders will receive prompt attention.

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

DESCRIPTION

Machine 253-1 is a high speed, one needle, single looper, two thread chain stitch, drop feed machine for sewing light weight fabrics.

It has an automatic oiling system with a centrifugal pump which delivers oil under pressure to all the principal bearings. Provision is also made to automatically lubricate all other bearings in the machine.

Machine pulley is made for $\frac{3}{8}$ inch V-belt. It can be used for $\frac{5}{16}$ inch round belt when desired.

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

Length of stitch is from 8 to 22 stitches to the inch.

Machine 253-2 is the same as Machine 253-1 except that it has a needle bar stroke of $1\frac{1}{4}$ inches and is intended for sewing medium weight fabrics. The length of stitch can be varied from 6 to 22 to the inch.

SPEED

Machine 253-1 can be driven up to a speed of 5500 stitches per minute, and Machine 253-2 up to 5200 stitches per minute, according to the material being sewn. It is advisable to operate the machines at moderate speeds for the first few days, after which they can be operated at maximum speed.

The machine pulley must always turn over toward the operator.

SETTING UP

The base fits into a standard table cutout and rests on the four corners **without bolting.**

Rasp the edges of the cutout, if necessary, as the base must slide in without driving and must be located so that the machine head does not touch the table when it is placed on the base.

Use shims on the corners, if necessary, to prevent the base from rocking. The base should also be level in both directions so that the oil level will be indicated accurately by the marks in the base.

The machine head rests on the felt gasket in the base and is not bolted down. The machine hinges must not support the head except when it is tilted back.

CAUTION: Before starting the machine, it must be thoroughly oiled as instructed on pages 4 and 5.

LUBRICATION

Machines of Class 253 have an automatic lubricating system in which oil is circulated from a reservoir in the base. See "X-ray" view on pages 12 and 13.

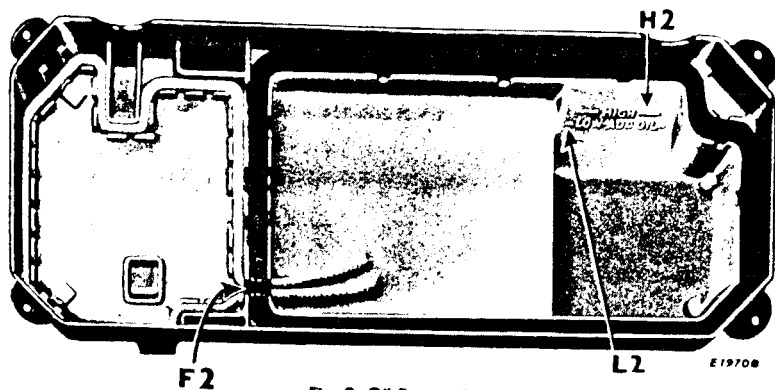


Fig. 2. Oil Reservoir

BEFORE STARTING THE MACHINE, this reservoir, which holds approximately 1½ pints, must be filled to the high mark H2, Fig. 2, with "TYPE A" or "TYPE C" OIL, sold only by Singer Sewing Machine Company. For description of these oils, see inside front cover.

See instructions, covering Oil Removing Wick Assembly, on pages 22 to 25.

CAUTION: Felt filler F2 should always be in place in its recess, between gasket and oil wick, as shown in Fig. 2.

When in operation, the oil level in the reservoir should be frequently inspected to keep it from going below the low mark L2, in the reservoir. Refill to high mark with "TYPE A" or "TYPE C" OIL.

The correct operation of the lubricating system is shown by a continuous stream of oil passing the window W in the arm while the machine is running. If this flow should stop, the machine should be immediately stopped and not run until the cause has been determined.

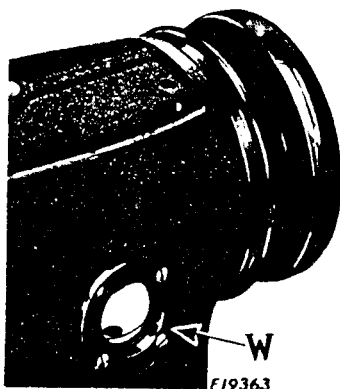


Fig. 3.
Oil Flow Window

NOTE: Before starting a machine which has been standing idle for several weeks, it is advisable to remove the face plate and oil the needle bar and take-up bearings. The automatic oiling system will lubricate these bearings after the first few minutes.

NEEDLES

Needles for Machines 253-1 and 253-2 are of Class and Variety 149x7 and are made in sizes 16, 17, 18, 19, 21 and 22.

The size of the needle to be used is determined by the size of the thread which must pass freely through the needle eye. Rough or uneven thread, or thread which passes with difficulty through the needle eye, will interfere with the proper operation 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 intelligible order:

"100 No. 17, 149 x 7 Needles"

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

TO SET THE NEEDLE

Insert the needle as far as it will go up into the needle clamp, with the single continuous groove of the needle toward the front, toward the operator, then securely tighten the needle set screw.

HINTS FOR PERFECT OPERATION

The machine pulley must always turn over toward the operator.

Do not run the machine with the presser foot resting on the feed without cloth under the presser foot.

Do not try to help the machine by pulling the fabric lest you bend the needle. The machine feeds the work without assistance.

The bed slide should be kept closed when the machine is in operation.

NEVER TOUCH THE STITCH REGULATOR PLUNGER WHEN THE MACHINE IS RUNNING.

TO THREAD THE NEEDLE

(See Figs. 4 and 4A)

Pass thread from thread unwinder through holes 1, 2 and 3 of the thread straightener, through the tension thread guide 4, around the right side of the tension stud and between the tension discs 5, through eyelet 6, down and

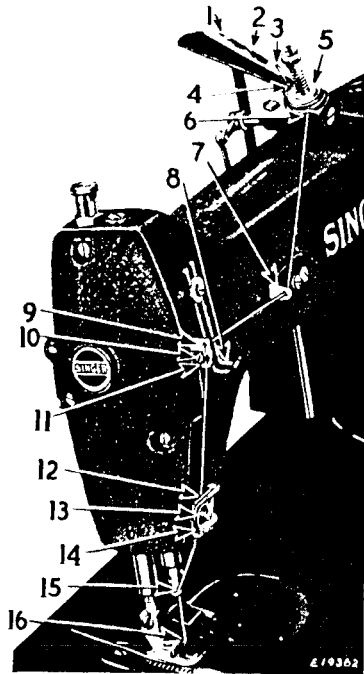


Fig. 4. Threading the Needle

from right to left through guide 7, to the left across the front of auxiliary take-up wire 8, through upper guide 9 on thread take-up (see Fig. 4A), behind flat spring 10 on thread take-up, through lower guide 11, into thread retainer guide 12, around the right side between the retainer discs 13, into thread guide 14, down through guide 15, and from front to back through the eye of the needle 16.

Draw about 2 inches of thread through needle eye with which to commence sewing.

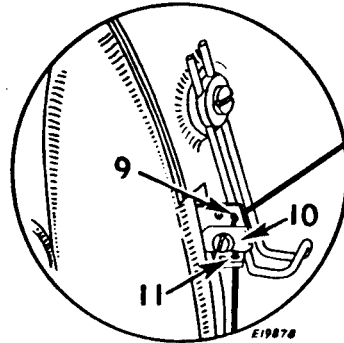


Fig. 4A. Threading Needle Thread Take-up

TO THREAD THE LOOPER

(See Figs. 5 and 6)

Pass thread from unwinder outward through hole 1, Fig. 5, in upright guide, then out through hole 2, down through tension thread guide 3, around the right side between the tension discs 4, through guide 5, down through

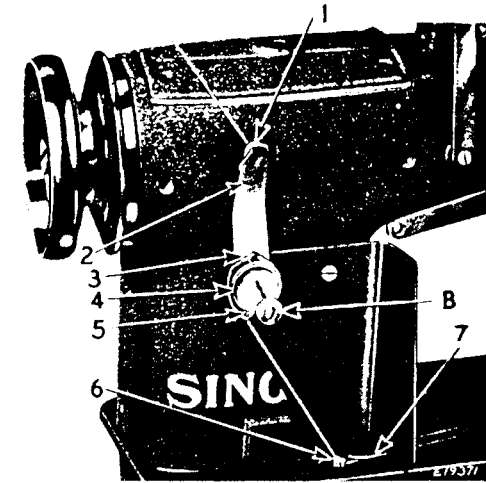


Fig. 5. Upper Threading of the Looper

one of the holes in guide 6 in the machine bed, then slip thread into slot 7, Figs. 5 and 6, in the bed, and pull thread through channel. Pass thread across the front of wire guide 8, Fig. 6, under guides 9 and 10, and through guide 11. Press looper throw-out release T2 toward you and slide looper to right. Then pass the thread through hole 12 in the heel of looper, then from front to back, away from operator, through the eye 13 of the looper.

Draw about 2 inches of thread through the looper eye with which to commence sewing. Slide looper to the left, into sewing position.

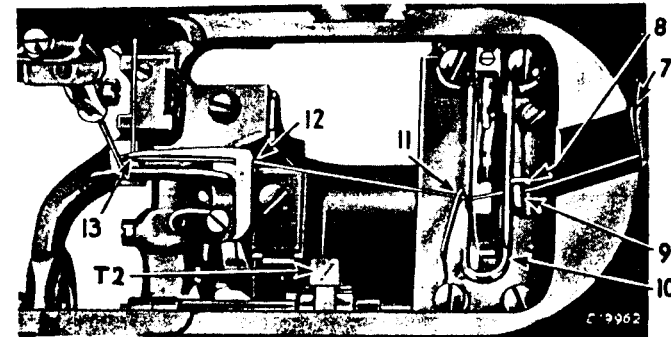


Fig. 6. Lower Threading of the Looper

TO REGULATE THE NEEDLE THREAD TENSION

(See Fig. 7)

Tension should be just enough to set stitch properly in goods. Turn the thumb nut **A** downward to increase the tension, or turn the thumb nut **A** upward to decrease the tension.

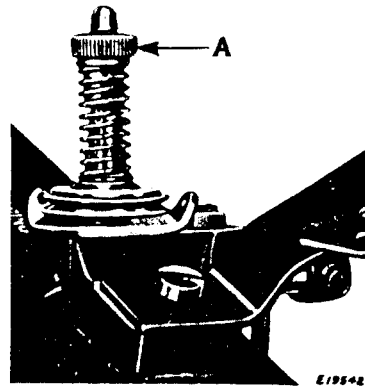
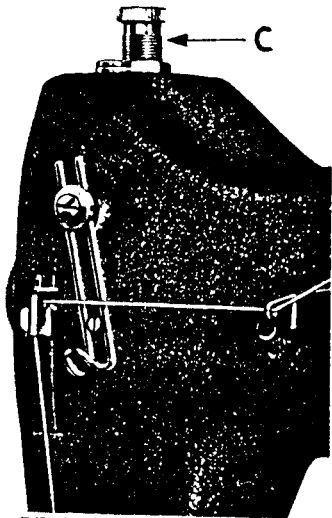


Fig. 7. Needle Thread Tension Regulator

TO REGULATE LOOPER THREAD TENSION

To increase tension on looper thread, turn thumb nut **B**, Fig. 5, at the rear side of machine inward, or turn this thumb nut outward for less tension. This tension should be very light.



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Fig. 8. Adjustments

TO REGULATE THE PRESSURE ON THE MATERIAL

(See Fig. 8)

The pressure on the material is regulated by the thumb screw **C**. To increase the pressure, turn this thumb screw over to the right. To decrease the pressure, turn this thumb screw over to the left.

TO REGULATE STITCH LENGTH

(See Fig. 9)

To change length of stitch, depress stitch length regulator plunger at **D**, using a narrow bladed screwdriver for this purpose, and at the same time turn the machine pulley slowly until the plunger drops into a notch in the feed eccentric. Then turn the wheel toward the operator for a longer stitch, or away from the operator for a shorter stitch.

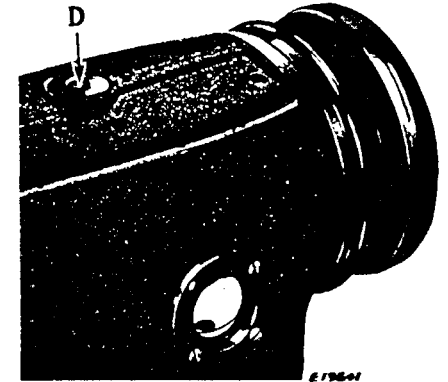


Fig. 9. Stitch Length Regulator

When the desired setting is obtained, release the plunger **D**. **Never press the plunger while the machine is running.**

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INSTRUCTIONS FOR ADJUSTERS AND MECHANICS

TO SET THE LOOPER WITH RELATION TO THE NEEDLE

(See Figs. 10 and 11)

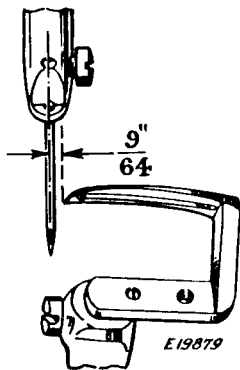


Fig. 10

The looper should be at the end of its backward stroke, with the point farthest from the needle, at the same time that the needle bar is at its lowest point. In this position, the point of the looper should be about $\frac{3}{64}$ inch from the center of the needle, as shown in Fig. 10.

To adjust, loosen end nut **L**, Fig. 11, on the pitman bar, then loosen nut **E2**, Fig. 13, on opposite end of bar, turn pitman bar left or right by means of nut **M** until correct distance from the center of the needle to the point of the looper is obtained. Securely tighten end nuts **L** and **E2**.

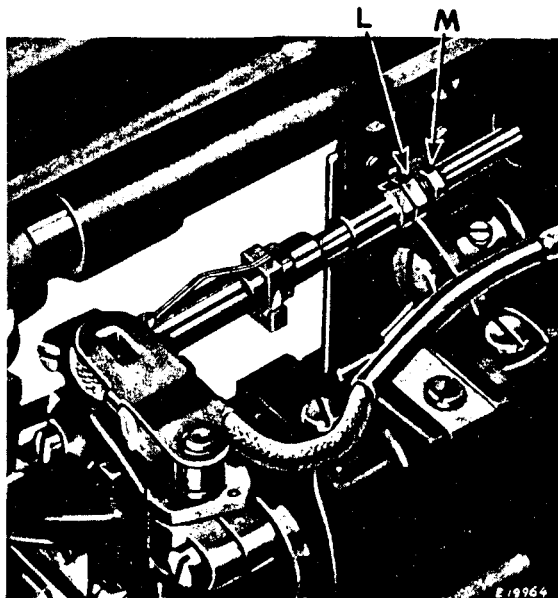


Fig. 11. Setting Looper in Relation to the Needle

TO SET THE NEEDLE BAR AT CORRECT HEIGHT

(See Fig. 12)

Turn machine pulley over toward you until the eye of the looper on its forward stroke reaches the center of the needle. As the eye of the looper reaches the center of the needle, the eye of the needle should be lined up with the looper eye. This will insure that the needle eye and looper eye will be in exact alignment when the looper passes the needle on the loop taking stroke.

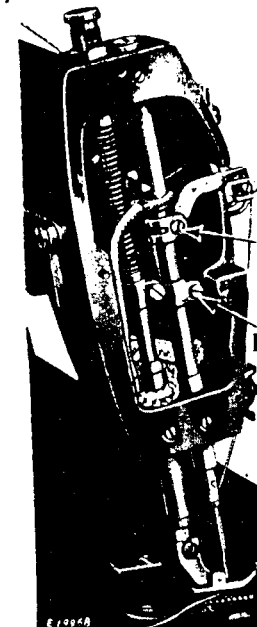
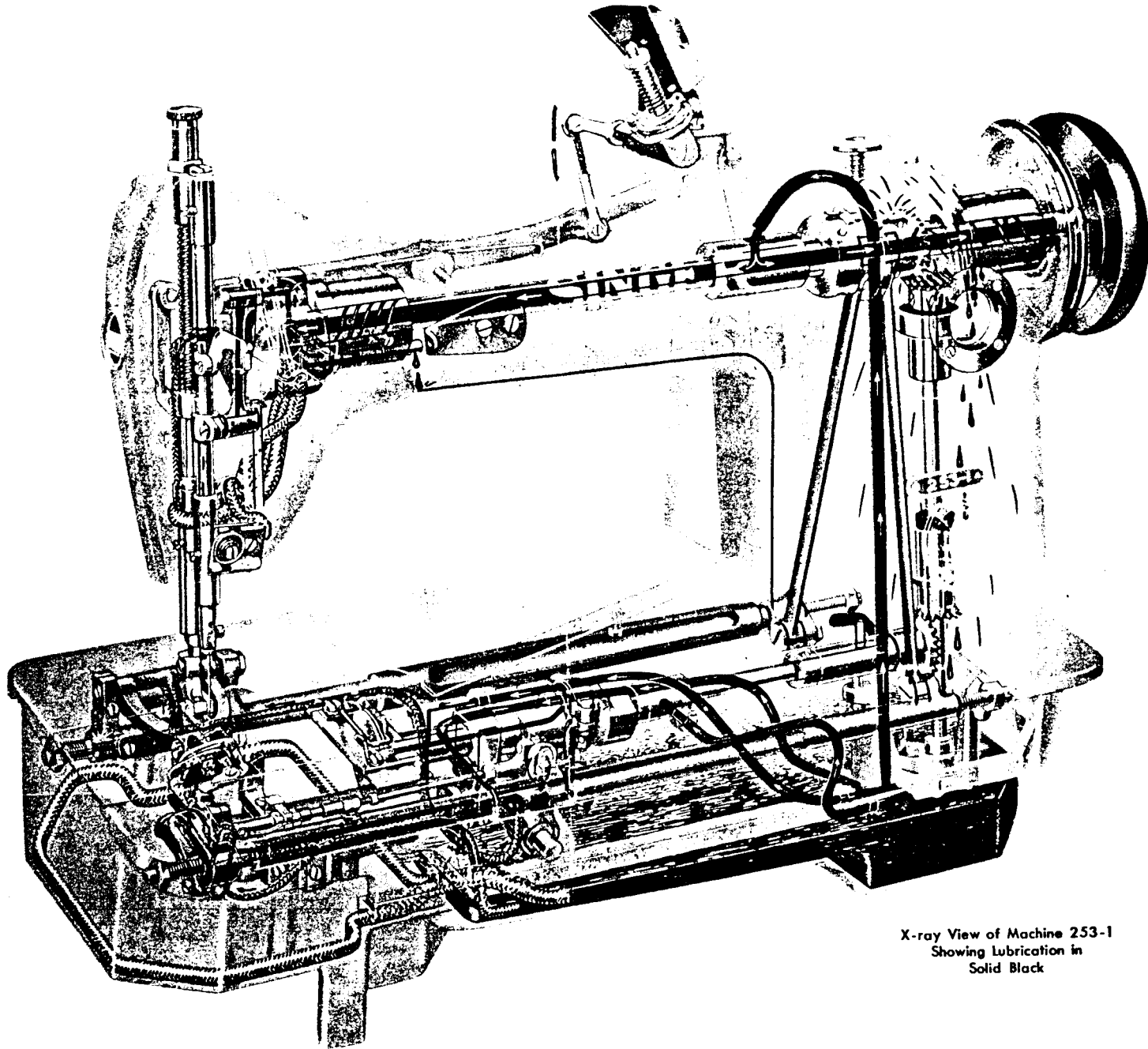


Fig. 12. Setting Needle Bar at Correct Height

To adjust, loosen screw **N**, in needle bar connecting stud and screw **F**, in needle thread take-up and move needle bar up or down to the required position, then securely tighten the screw **N**, and set needle thread take-up as described at bottom of page 15.

NOTE: It may be necessary to vary needle bar setting for different threads and materials.



X-ray View of Machine 253-1
Showing Lubrication in
Solid Black

TO TIME THE NEEDLE-AVOIDING MOTION OF THE LOOPER

(See Fig. 13)

When the looper commences its forward stroke, the needle bar begins to rise from its lowest position, (See "To Time the Looper in Relation to Needle Bar Stroke", page 15). As the looper eye reaches the center of the needle it should be in alignment with the needle eye (See "Correct Height of Needle Bar", page 11). During the forward stroke of the looper, the looper passes behind the needle **just clearing the back of the needle**.

When the needle bar reaches its highest position, the looper completes its forward stroke and moves from **rear to front**. As the needle bar descends, the looper on its backward stroke passes in front of the needle, **just clearing the front of the needle**. At the end of the downward stroke of the needle bar, the looper completing its backward stroke moves from **front to rear** and is ready to commence its forward stroke again.

These properly timed movements of the looper from front to rear and from rear to front are called the needle-avoiding motion of the looper.

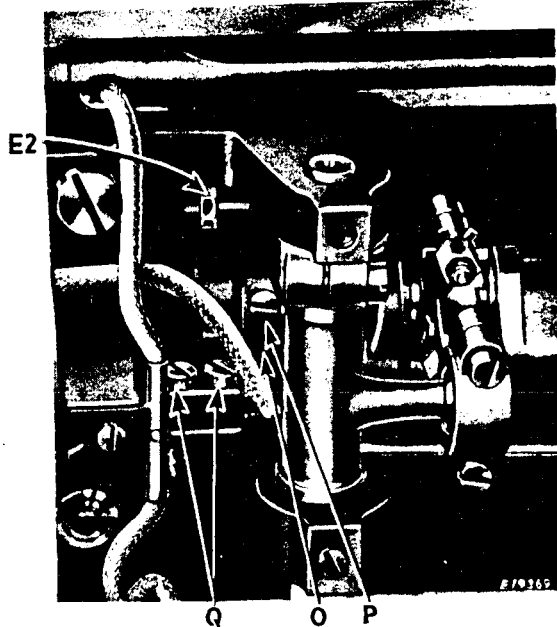


Fig. 13. Timing the Needle-Avoiding Motion of the Looper

To time the needle-avoiding motion of the looper, loosen the two set screws (one of which is shown at P) and turn the eccentric O until the looper just clears the back of the needle on the forward stroke of the looper and just clears the front of the needle on the backward stroke of the looper. Then securely tighten the two set screws P.

NOTE: To position the looper an equal distance in back and in front of the needle during the needle-avoiding motion of the looper, loosen the two set screws Q and move the looper holder fork as required. Then securely tighten the screws Q.

TO TIME THE LOOPER IN RELATION TO THE NEEDLE BAR STROKE

(See Fig. 14)

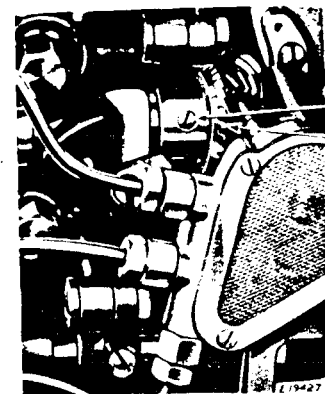


Fig. 14. Timing Looper in Relation to the Needle Bar Stroke

Turn machine pulley toward you. When the looper is at the end of its backward stroke, the needle bar should be at the lowest point of its stroke. As the looper starts forward, the needle bar must start to rise at the same time. To adjust, loosen two set screws J, (only one of which is shown in illustration), on bevel gear K, located at right end of lower rotary shaft, and turn gear to make necessary adjustment, then securely tighten set screws J.

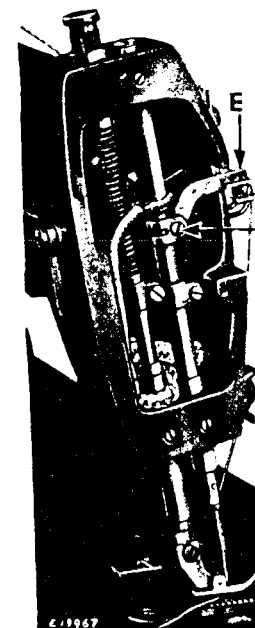


Fig. 15. Needle Thread Take-up

TO SET THE NEEDLE THREAD TAKE-UP

(See Fig. 15)

The needle thread take-up E should be centered to move freely up and down in its slot in the machine head without touching either end of the slot.

To adjust, loosen clamping screw F which holds take-up to the needle bar, and set the take-up as instructed above, having it parallel with the face plate of the machine and as close as possible to machine head casting without actually touching it.

TO ADJUST THE AUXILIARY THREAD TAKE-UP

(See Fig. 16)

The auxiliary thread take-up **G** should be set to take up the slack of the needle thread after the looper has shed the needle loop and as the needle bar finishes its downward stroke and the stitch is set.

To change the position of the auxiliary thread take-up, loosen the screw **H** and raise or lower the auxiliary thread take-up as required, then tighten screw **H**.

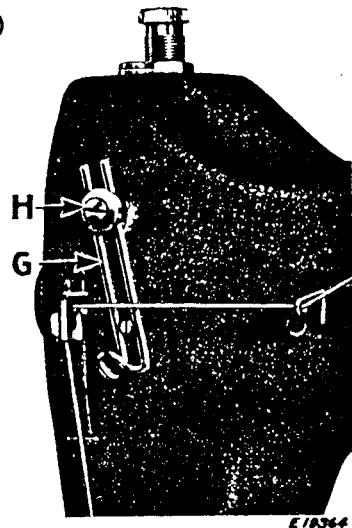


Fig. 16. Auxiliary Thread Take-up

TO ADJUST THREAD TENSION RELEASER

(See Fig. 17)

The tension releaser must release the tension on the needle thread when the presser foot is raised.

In case the tension releaser does not properly release the thread, loosen set screw **V** and turn shaft **W** over to the left until correct adjustment is obtained, then securely tighten the set screw **V**.

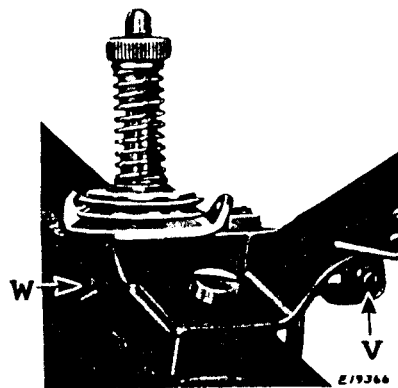


Fig. 17. Adjusting
Thread Tension Releaser

TO SET THE NEEDLE GUARD

(See Figs. 18 and 19)

The function of the needle guard **R**, Fig. 18, is to prevent the needle from being sprung into the path of the looper when the looper is on its forward stroke. The needle guard should be set as close as possible to the needle without actually touching it.

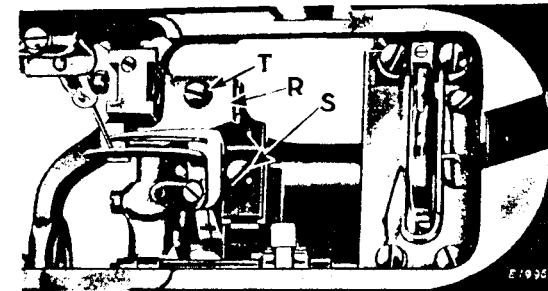


Fig. 18. Setting Needle Guard

To set the needle guard in correct position, loosen the screw **S**, Fig. 18, and move the guard to or from the needle as may be required, then securely tighten the screw **S**. The needle guard can also be adjusted to right or left to clear the feed dog, after loosening the screw **T**, Fig. 18.

Needle guard is at the correct height when the loop formed by the thread in the needle comes freely out of the needle without touching the guard.

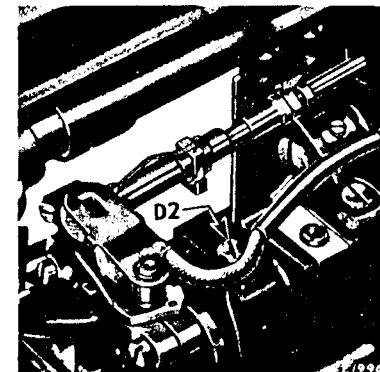


Fig. 19. Needle Guard Height Setting

To adjust the height of the needle guard, loosen screw **D2**, Fig. 19, raise or lower needle guard to the correct height, then securely tighten screw **D2**.

TO TIME THE LOOPER THREAD TAKE-UP

(See Figs. 20 and 21)

The looper thread take-up, A2, must contact the thread just as the looper is commencing its backward stroke or loop shedding motion, as shown in Fig. 20, and keep the thread taut until the point of the needle, on its downward stroke, has entered the triangle formed by the looper blade, the looper thread and the needle loop.

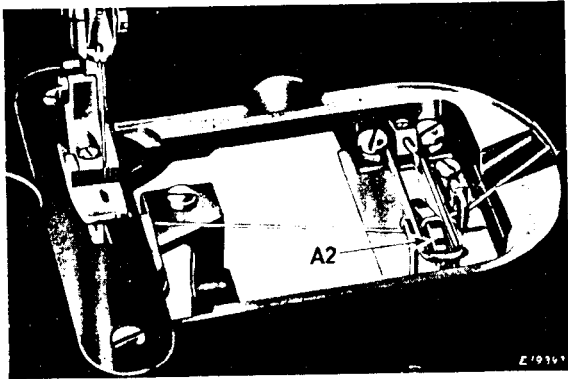


Fig. 20. Looper Thread Take-up Contacting Thread

To adjust, loosen screw B2, Fig. 21, then loosen set screw C2 in the hub of the looper thread take-up and set the take-up in the desired position on the rotary shaft, then slightly tighten set screw C2, then securely tighten thrust screw B2, and securely tighten set screw C2.

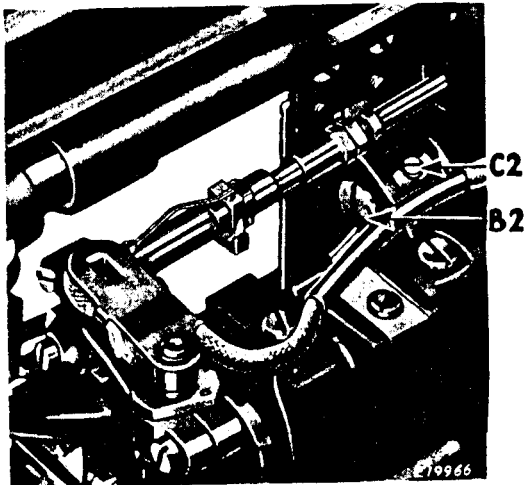


Fig. 21. Adjustment of Looper Thread Take-up

TO SET THE FEED DOG AT CORRECT HEIGHT

(See Fig. 22)

When the feed dog is at its highest position, practically the full depth of the feed dog teeth should project through the slots in the throat plate.

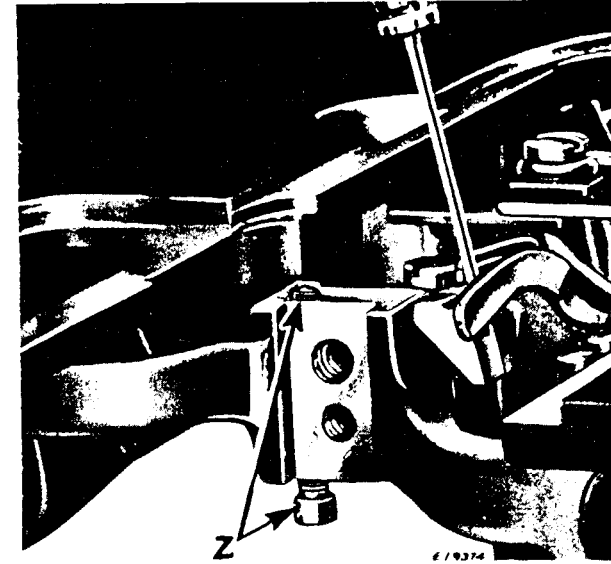


Fig. 22. Adjustment of Feed Dog Height

The height of the feed dog is determined by the stop screw Z which may be turned up or down as required.

TO ADJUST THE HEIGHT OF THE PRESSER BAR

(See Fig. 23)

The presser bar should be set as high as possible, while still preventing the needle bar at its lowest position from striking the top surface of the presser foot, when the presser bar is fully raised.

To adjust the height of the presser bar loosen screw **J3** on the stop **K3** and move the stop **K3** up or down, as required. Then securely tighten screw **J3**.

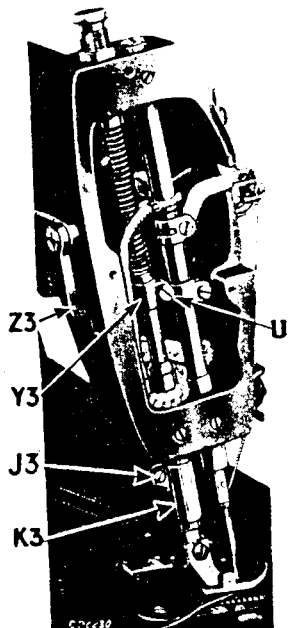


Fig. 23. Adjusting Height of Presser Bar

While sewing, the presser foot should always rest firmly upon the throat plate, when the feed dog is below the throat plate.

To adjust, loosen the guide bracket clamping screw **U**, and move the guide bracket up or down enough to provide a slight amount of play between the guide bracket **Y3** and the lifting bracket **Z3**, when the presser foot is resting on the throat plate. Then securely tighten the screw **U**.

TO TIME THE FEED

(See Fig. 24)

When the machine leaves the factory, the feed eccentric **G2** and the gear and feed lifting eccentric **H2** are correctly set. The feed eccentric **G2** is normally set so that when the machine pulley is turned over toward the operator, the centerline of the feed eccentric stop screw **X** is slightly ahead of the centerline of the feed lifting eccentric tapered pilot screw **K2**, as shown in Fig. 24.

The gear and feed lifting eccentric assembly **H2** is set at the factory for average sewing conditions so that the tapered pilot screw **K2** enters its groove on the arm shaft. The pilot screw **K2** and the two set screws (one of which is shown at **J2**) are then securely tightened on the arm shaft.

To change the feeding path to suit different sewing conditions, remove the tapered pilot screw **K2**, loosen the two set screws **J2** and retard or advance the feed lifting eccentric **H2**. Then securely tighten the set screws **J2**. Do NOT replace the pilot screw **K2**.

Whenever the feeding path has been altered, the looper must be re-timed in relation to the needle bar stroke, as described at the top of page 15.

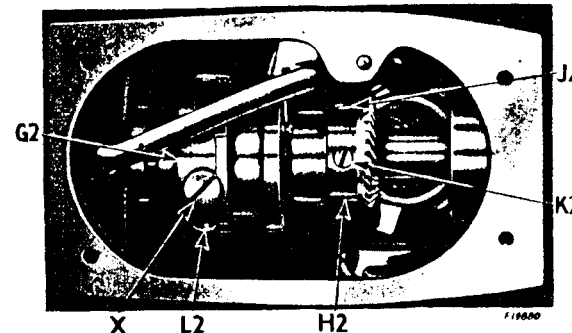


Fig. 24. Feed Eccentric Adjustments

To alter the timing of the feed eccentric **G2**, loosen the three set screws (one of which is shown at **L2**) and while holding the eccentric, turn the machine pulley over toward the operator, to time the feed later or away from the operator to time the feed earlier. Then securely tighten the set screws **L2**.

FEED ECCENTRIC STOP SCREWS

(See Fig. 24)

The machine is prevented from making longer stitches than a predetermined maximum by the stop screw **X** in the feed eccentric.

Feed eccentric stop screw **140568**, furnished with Machine **253-1**, permits a maximum length of 8 stitches per inch. Stop screw **140258**, for 14 stitches per inch or shorter, can also be used. Machine **253-2** is regularly fitted with stop screw **140566** permitting a maximum length of 6 stitches per inch, but either **140256** (maximum 7 stitches per inch) or **140258** (maximum 14 stitches per inch) can be used.

TO PREVENT OPERATORS FROM CHANGING STITCH LENGTH

The stitch regulator plunger **D**, Fig. 9, page 9, can be removed to prevent unauthorized persons from changing the stitch length. After the stitch length has been set, take off the small retaining ring near the tip of the plunger and push out the plunger cap and the plunger. The hole in the top cover should then be filled by inserting a screw **140317X** (not regular equipment).

OIL-REMOVING WICK ASSEMBLY (HEAD END) COMPLETE #146747

The function of the oil-removing wick assembly, Complete #146747, furnished with the machine, is to remove excess oil from the head end of the machine arm. This assembly is shown in Fig. 28. Additional sets of the oil-removing wick, oil-removing wick holder body and spring, Complete #146746, shown at **W2**, Fig. 28, will be furnished on order.

CAUTION: If inferior oil is used, absorption of the excess oil by this wick may be reduced considerably. The consequent leakage of accumulated oil will then cause serious damage to materials being sewn.

Use "TYPE A" or "TYPE C" OIL, sold only by Singer Sewing Machine Company. For further instructions on oiling, see page 4 and inside front cover.

To remove oil-removing wick and holder body assembly **W2**, Fig. 28, first loosen the four screws **M2**, Fig. 25, and remove the face plate **N2**, Fig. 25. Loosen foot lifting lever hinge screw **P2**, and remove the head end of foot lifting lever **O2** and spring **S2**, Fig. 25, from the machine.

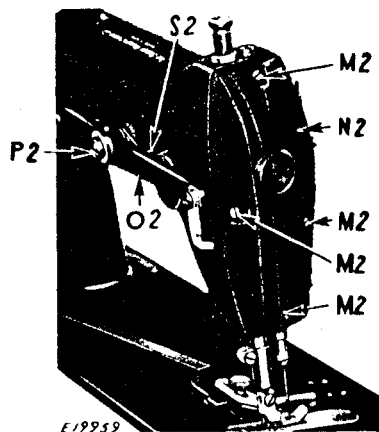


Fig. 25. Releasing the Foot Lifting Lever

Remove presser foot and presser foot screw. Remove presser bar thumb screw **E3**, Fig. 26, loosen presser bar clamping screws **U** and **J3**, and remove presser foot stop **K3** and upper and lower sections of the presser bar **Q2**, Fig. 26, and presser bar spring **F3**. Loosen three screws **X2**, Fig. 26, in the oil-removing hinge plate and cover **R2**, Figs. 26 and 27.

Turn machine pulley so that needle bar crank **H3** is in the position shown in Figs. 27 and 29. Slip wick retainer **Y2**, Figs. 26 and 27, up and off presser bar bushing **G3**, Fig. 29, and remove end **D3**

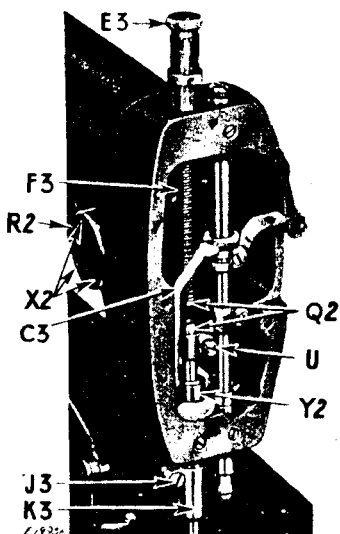


Fig. 26. Removing Presser Bar

of oil removing wick from retainer **Y2**. Remove hinge plate and cover **R2**, with oil-removing wick and holder body from the machine by simultaneously pushing upward against wick and holder with index finger, as shown in Fig. 27, and pulling outward on cover **R2**.

Release end of spring **Z2**, Fig. 28, from the spring-catch **A3** on the holder body **V2**, Fig. 28. Remove hinge screw **U2**. Remove oil-removing wick and holder **L3**, Fig. 28, from the hinge plate and cover **R2**.

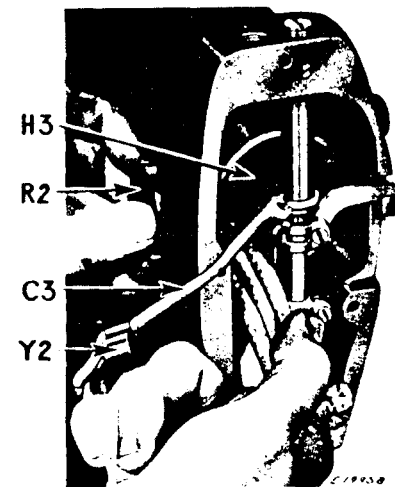


Fig. 27. Removing and Replacing Oil-Removing Wick

TO REPLACE OIL-REMOVING WICK

Place gasket **B3**, Fig. 28, on hinge plate and cover **R2**. After aligning the three holes in the gasket with the three holes in the cover **R2**, insert three screws **X2** through the cover **R2** and the gasket **B3**, to hold the gasket in place. Insert open end of holder body **V2**, Fig. 28, into hinge plate and cover **R2**. Replace and securely tighten screw **U2**. Slip end of spring **Z2**, Fig. 28, into spring-catch **A3** on the holder **V2**, as shown in Fig. 29.

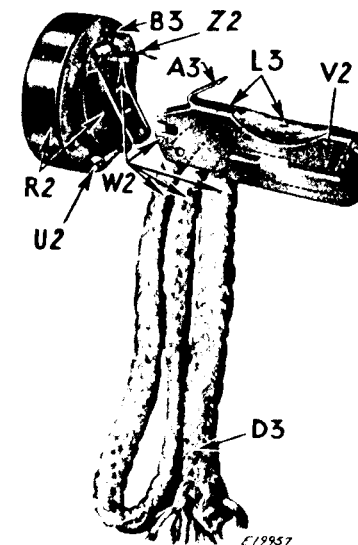


Fig. 28. Oil-Removing Wick Assembly, Complete #146747. (Oil-Removing Wick, Holder and Spring, Complete #146746, is shown at **W2**, above)

Turn machine pulley so that needle bar crank H3 is in the position shown in Fig. 29. Fold oil-removing wick over the holder body, as shown in Fig. 29, and insert the oil-removing wick, holder and hinge plate into the head of the machine. Place the index finger under the wick and holder L3, Fig. 29, and simultaneously pull the oil-removing wick taut and slide the hinge plate R2 fully into its recess in the head of the machine, as shown in Fig. 27.

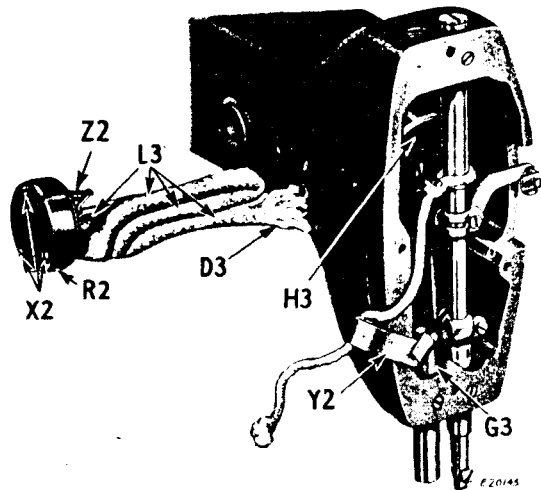


Fig. 29. Replacing Wick and Holder in Head of Machine Arm

Securely tighten the three screws X2, Fig. 29, in the hinge plate and cover R2. Test the wick holder body assembly V2, by depressing the right-hand end of the holder with a screwdriver, to make certain that it hinges freely, under the needle bar crank H3. Replace end D3 of the oil-removing wick on the presser bar bushing G3, then replace loop of retainer Y2 on bushing G3, above wick loop, as shown in Fig. 30.

NOTE: Wick retainer Y2 is made of soft metal, permitting its loop to be pinched tighter when necessary to hold firmly over bushing G3.

Pass end D3 of oil-removing wick over wick loop behind presser bar bushing G3 and into oil pool behind needle bar bushing, as shown in Fig. 30. Pass end of smaller wick C3, Fig. 30, straight back behind retainer Y2.

Replace presser bar spring F3, Fig. 26, and upper and lower sections of presser bar Q2, being careful to place wick C3, in front of presser bar, as shown in Fig. 26. Replace presser foot stop K3, Fig. 26, and tighten clamp screw J3. Replace presser foot and presser foot screw. Replace presser bar thumb screw E3, Fig. 26. Align presser foot with feed dog and tighten presser bar clamp screw U, Fig. 26.

Replace foot lifting lever O2 and spring S2, Fig. 25, on hinge screw P2 and replace foot lifting lever O2, spring S2, and hinge screw P2, on machine arm, as shown in Fig. 25. Securely tighten hinge screw P2.

Replace face plate N2, and face plate gasket on head of machine and replace and securely tighten four face plate screws M2, Fig. 25.

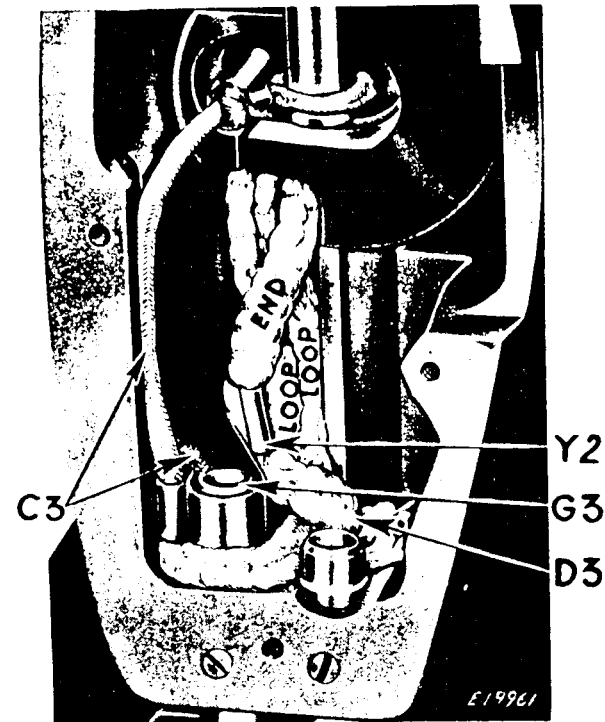


Fig. 30. Location of Wicks in Head of Machine (Needle bar removed for purposes of clearer illustration, only)

OIL PUMP

If it should ever be necessary to remove the oil pump, note that the impeller is held to the shaft by a left-hand thread, and must be turned off to the right after removing the locking screw at the center of the shaft. Be careful not to damage the impeller.

When replacing the impeller, it is important to lock it in a position where it will clear both top and bottom of the case.

CAUTION TO MECHANICS

The Class 253 Machine is made with extreme precision in machining and assembly, and the "Superfinish" process provides microscopically smooth bearing surfaces. Therefore special care should be taken not to permit any misalignment or cause any scratches or nicks on the bearing surfaces by careless assembly or handling of parts. Any such damage might render the machine incapable of the long trouble-free service for which it was designed.