

**SINGER**  
**246-3 AND 246-5**

# USE SINGER OILS and LUBRICANTS

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

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*The following is the correct lubricant for  
Machines of Class 246:*

**TYPE A**—MANUFACTURING MACHINE OIL, LIGHT GRADE

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## 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.

### **BALL BEARING LUBRICANT**

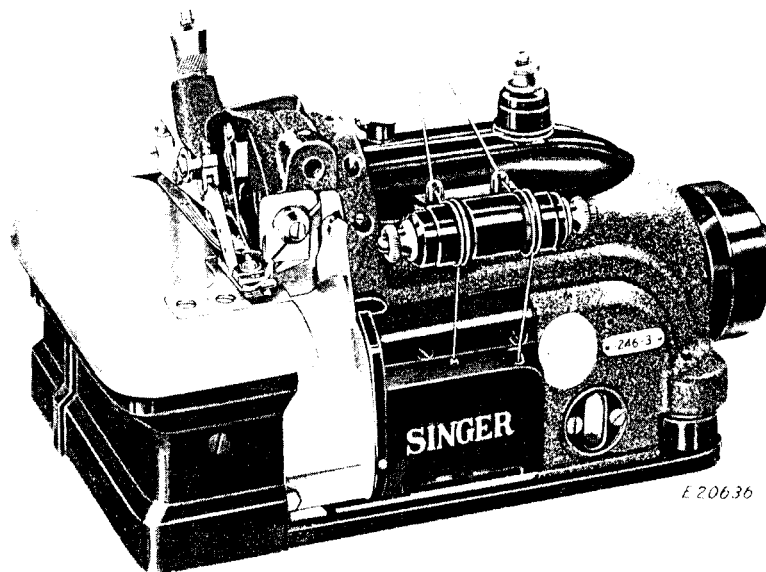
This pure grease is specially designed for the lubrication of ball bearings and ball thrust bearings of motors and electric transmitters, ball bearing hangers of power tables, etc. Furnished in 1 lb. and 4 lb. tins.

20159

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.

## ADJUSTERS MANUAL FOR **SINGER** SEWING MACHINES



## 246-3 and 246-5

FOR TRIMMING AND OVEREDGING IN ONE OPERATION  
AUTOMATIC OILING SYSTEM

Special attention is called to the lubricating instructions on page 3.

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2  
DESCRIPTION

**Machine 246-3** has a differential feed, trimmer, one needle and two loopers and makes the three-thread over-edge tight needle thread stitch (Federal Stitch Type # 504). It is designed for simultaneous trimming and stitching of muslin, rayon, tricot, silk, light denim, flannel, balbriggan, light and medium sweater materials and other fabrics up to  $3/16$  inch in thickness according to the material in use. The machine can be fitted to trim from  $1/16$  inch to  $1/4$  inch from the needle.

This machine may be refitted to make the two-thread over-edge stitch (Federal Stitch Type # 502), the two-thread serging stitch (Federal Stitch Type # 503) or the three-thread purl-on-the-edge stitch (Federal Stitch Type # 505).

With the differential feed, it is possible to either gather or stretch the material, or to feed the material evenly.

**Machine 246-5** is similar to **Machine 246-3**, except that it is designed for simultaneous trimming and stitching of fabrics up to  $1/4$  inch in thickness, according to the material in use, such as medium heavy and heavy knit goods, sport-jackets, fruit bags and laundry bags. The machine can be fitted to trim from  $1/8$  to  $9/32$  inch from the needle.

SPEED

The maximum speed recommended for **Machine 246-3** is 5500 stitches per minute. The machine should be run slower than the maximum speed until the parts which are in movable contact become glazed by their action upon each other. For long runs, a maximum speed of 5000 stitches per minute is recommended. Maximum speed recommended for **Machine 246-5** is 5000 (long runs, 4500) stitches per minute.

When the machine is in operation, the machine pulley should always turn over from the operator.

TO SET UP THE MACHINE

See Fig. 2

Place the machine with its base on the table so that the belt groove of the machine pulley is in line with the belt groove of the driving pulley and draw the outline of the base of the machine on the table. Also spot position of hole E directly below presser foot lever X, Fig. 8, Page 6.

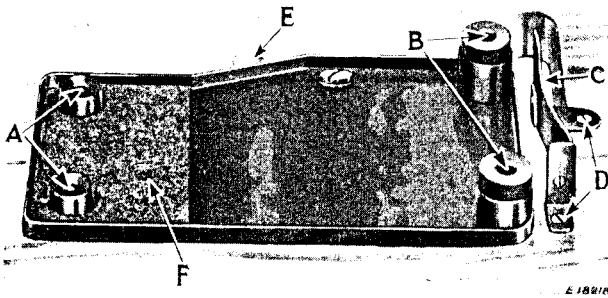


Fig. 2. Installation of Machine Base

Fasten the base to the table by means of two # 6 Flat Head 1 inch wood screws at A and two # 8 Round Head  $3/4$  inch wood screws at B.

Then fasten the belt guard C to the table with two # 7 Flat Head  $3/4$  inch wood screws at D.

After making sure that the felt cushion F is in place, set the machine on the rubber cushions at A and B on the base.

3  
TO OIL THE MACHINE

See Fig. 3

USE "TYPE A" OIL, sold by Singer Sewing Machine Company. For description of this oil, see inside of front cover.

After the machine is installed and before starting the machine, apply this oil to the oil filler cup G on top of the machine, filling the oil reservoir until the oil sight gauge H indicates that it is half full.

Thereafter, check the oil gauge H daily before starting the machine and maintain the oil level at the midpoint of the gauge. See X-Ray view of machine on page 23.

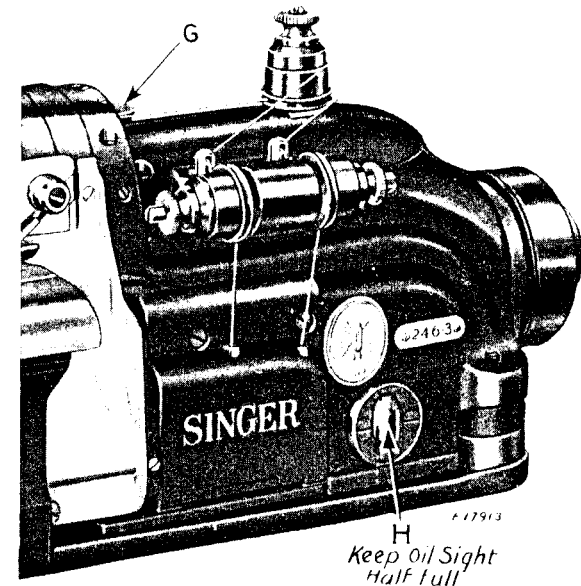


Fig. 3. Oiling

NEEDLES AND THREAD

Needles for these machine are of curved blade, Class and Variety 151x1, and are made in sizes 9, 11, 14 and 16. Special sizes or finishes, such as chrome-plated needles for nylon materials, will be made on request.

The size of the needle to be used should be 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 proper formation of the stitch.

Orders for needles must specify the quantity required, the size number, also the Class and Variety numbers, separated by an x.

The following is an example of an intelligible order:

"100 No. 9, 151x1 Needles."

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

## TO SET THE NEEDLE Using Socket Wrench # 164197

See Fig. 4

Turn the machine pulley over from the operator to move the needle carrier Z up to its highest position. Raise the presser bar lever J to disengage the presser bar K, and swing presser bar K out to the left. Loosen nut M with socket wrench #164197.

With tweezers, insert the needle through the needle carrier Z as far as it will go against the stop O, then securely tighten the nut M.

### TO PREPARE FOR THREADING

See Fig. 4

For convenience in threading, raise the presser bar lever J, and swing the presser bar K out to the left. Then swing the cloth plate out to the left and open the front cover plate P, Fig. 8.

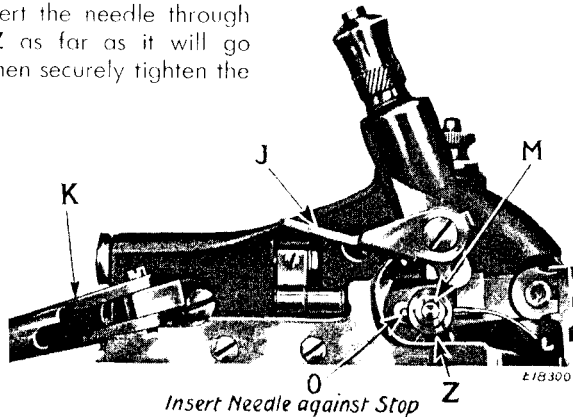


Fig. 4. Setting the Needle

### TO THREAD UNWINDER # 151031 For Three-Thread Stitch (Tight or Purl-on-the-Edge)

See Fig. 5

Pass the needle thread from the spool N, over from back to front through loop N1, down and from top to bottom through eyelet N2, and from top to bottom through eyelet N3.

Pass the right looper thread from the spool R, over from back to front through loop R1, down and from top to bottom through eyelet R2, and from top to bottom through eyelet R3.

Pass the left looper thread from the spool L, over from right to left through loop L1, down and from top to bottom through eyelet L2, and from top to bottom through eyelet L3.

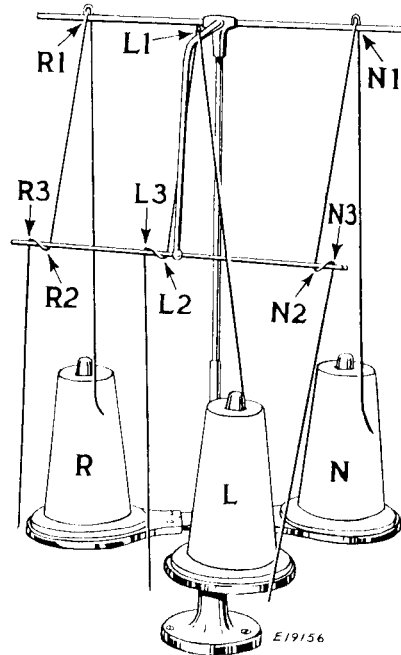


Fig. 5. Threading the Unwinder

**NOTE:** When sewing with nylon thread, thread unwinder # 228706, available upon order, may be used if desired.

## TO THREAD THE NEEDLE (For Three-Thread Tight Stitch)

See Fig. 6

After threading the unwinder, lead the thread from the eyelet N3, Fig. 5 on the unwinder, down, and from back to front through the eyelet N4, Fig. 6 behind the tension discs, then pass the thread clockwise between the tension discs N5.

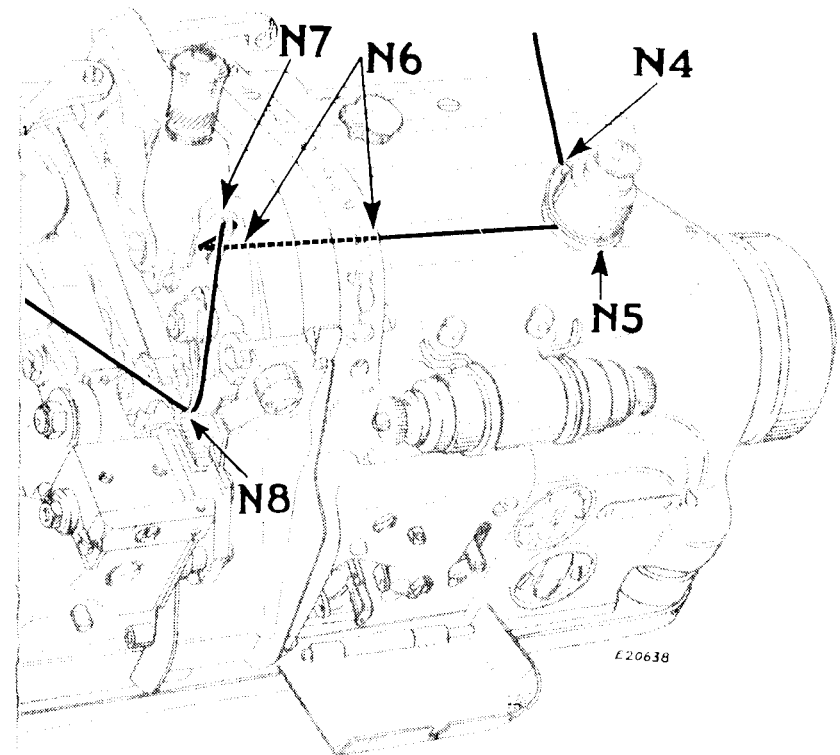


Fig. 6. Threading the Needle

Turn the machine pulley over from you until the needle reaches its highest position, then, using the threading wire, shown in Fig. 7, guide the thread from right to left through the tube N6. Remove the thread from the threading wire and pass it up and from right to left through the eyelet N7.

Pass the thread from eyelet N7, down, and from front to back through the needle eye N8.

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



Fig. 7. Threading Wire 164196

### TO THREAD THE RIGHT LOOPER (For Three-Thread Tight Stitch)

See Figs. 8, 9 and 10

**CAUTION:** When threading right looper, be sure that there is no loose loop of thread on this looper to cause thread breakage. (See Fig. 9).

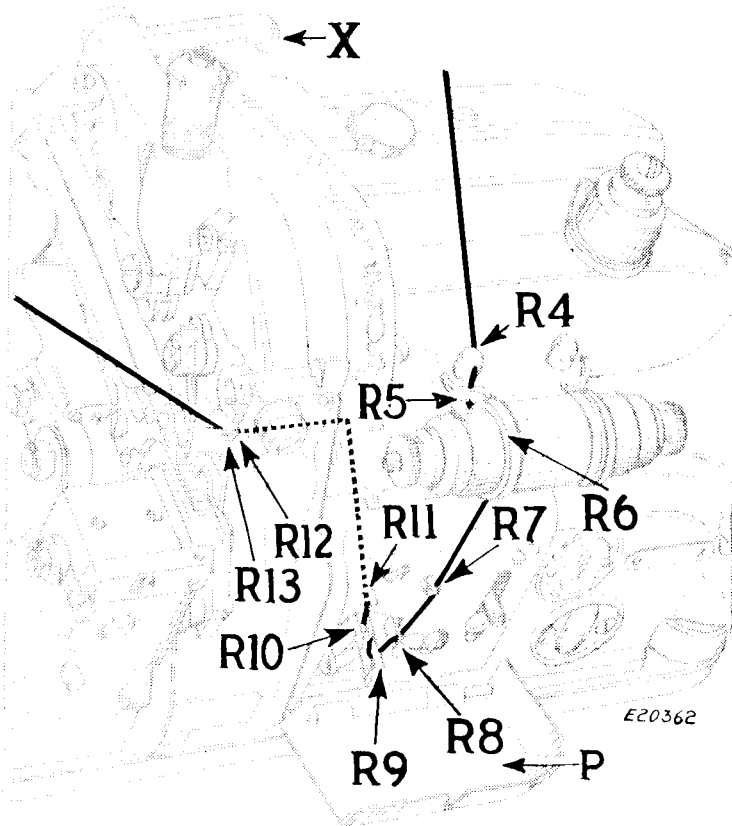


Fig. 8. Threading Right Looper

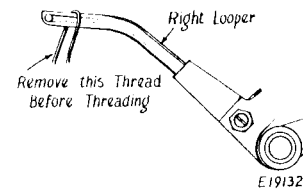


Fig. 9. Right Looper

Turn the machine pulley over from you until the needle is at its lowest position. Then lead the thread from eyelet R3, Fig. 5, page 4 on the unwinder and pass it from back to front through the thread guide R4, Fig. 8, down under the tension guide R5, then over and between the tension discs R6. Pull the front cover plate P forward, pass the thread down through the thread guide R7, Fig. 10, from right to left through the stripper eyelet R8, from right to left between the right take-up and its wire guard at R9, then from right to left through eye R10 in the left take-up.

Using the threading wire, shown in Fig. 7, page 6, guide the thread into the tube opening R11. Draw the threading wire out of the tube exit R12, Fig. 8. Then pass the thread from front to back through the eye R13 of the right looper. (See CAUTION on page 6 and in Fig. 9, above).

Draw about 2 inches of thread through the eye of the right looper, with which to commence sewing.

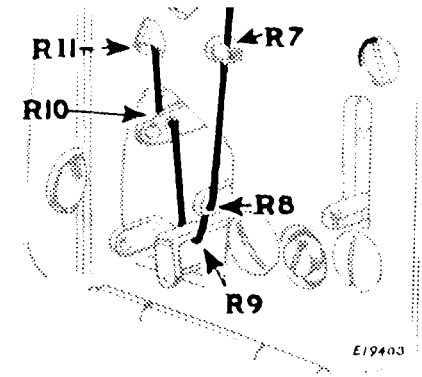


Fig. 10. Threading Right Looper Take-up

### TO THREAD THE LEFT LOOPER (For Three-Thread Tight Stitch)

See Figs. 11 and 11A

**NOTE:** For convenience, thread the right looper before threading the left looper.

Lead the thread from eyelet L3, Fig. 5, page 4 on the unwinder and pass it from back to front through the thread guide L4, Fig. 11, down under the tension guide L5, then over and between the tension discs L6. Pull the cover plate P forward, pass the thread down through the eyelet L7, Fig. 11A, from right to left between the right take-up and its wire guard at L8, from right to left through the eye L9 in the left take-up, then from right to left through the eye in the right take-up at L10.

Using the threading wire, shown in Fig. 7, page 6 guide the thread from right to left through the tube L11, then up the groove L12.

Turn the machine pulley over from you enough to place the eye L14 of the left looper directly in line with the tube L13.

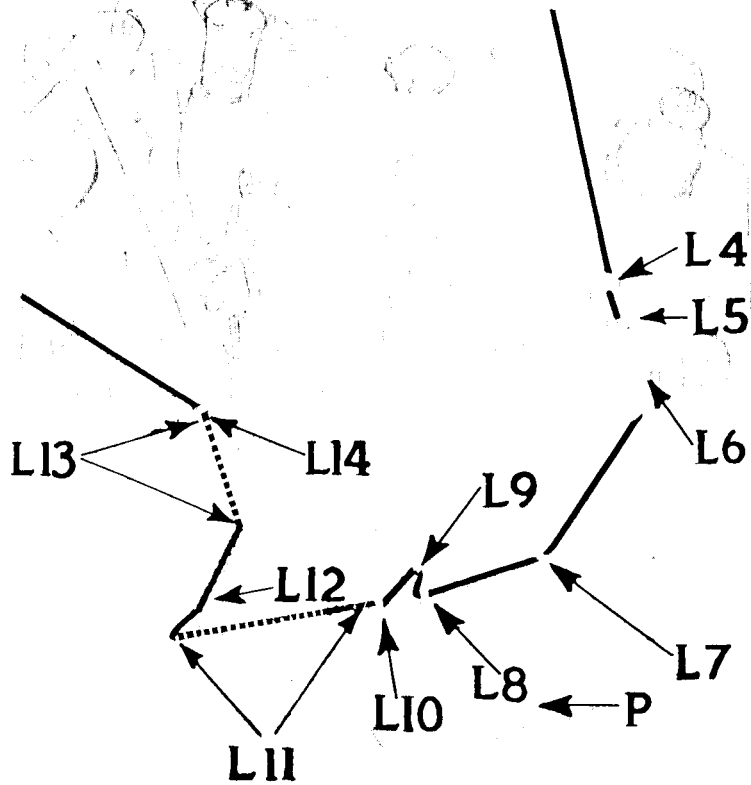


Fig. 11. Threading Left Looper

Then pass the thread from front to back through the tube L13 and then through the eye L14 of the left looper.

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

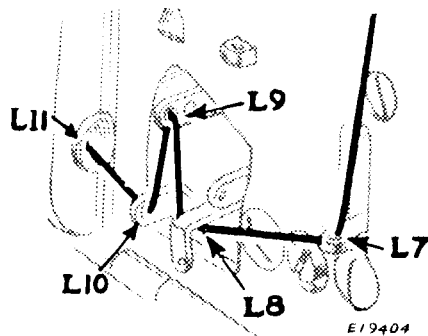


Fig. 11A. Threading the Left Looper Take-up

### TO THREAD THE MACHINE FOR THREE-THREAD PURL-ON-THE-EDGE STITCH

When the machine is properly refitted, thread the machine as shown in Figs. 12, 12A, and 12B, below. (See instructions on page 4 for threading the unwinder).

**CAUTION:** When threading the right looper, be sure that there is no loose loop of thread on this looper to cause thread breakage. (See Fig. 9, page 7).

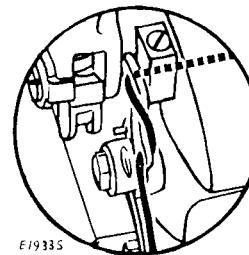


Fig. 12. Threading Needle-Thread Eyelet

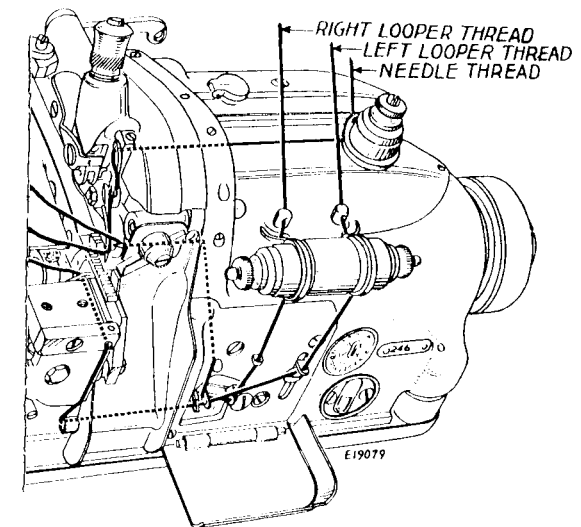


Fig. 12B  
Threading the Machine

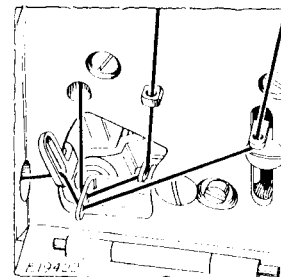


Fig. 12A  
Threading the Looper Take-up

**NOTE:** The needle-thread eyelet is threaded differently for purl-on-the-edge stitch, as shown in Fig. 12, than it is threaded for the tight stitch, as shown at N7, Fig. 6.

TO THREAD THE MACHINE  
FOR TWO-THREAD OVEREDGE STITCH

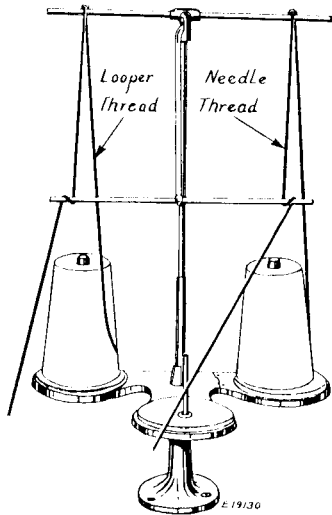


Fig. 13. Threading the Unwinder # 151031

When the machine is properly refitted, thread unwinder # 151031, as shown in Fig. 13, at the left, then thread the machine as shown in Figs. 13A, 13B and 13C, below.

NOTE: When sewing with nylon thread, thread unwinder # 228705, available upon order, may be used if desired.

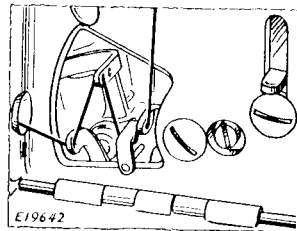


Fig. 13A. Threading the Looper Take-up

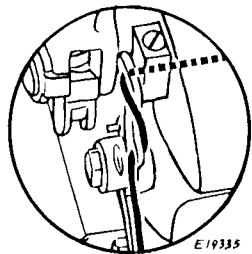


Fig. 13B. Threading Needle-Thread Eyelet

NOTE: Fig. 13B illustrates how the needle-thread eyelet should be threaded for the two-thread over-edge stitch.

For detailed description of threading the needle, see page 5.

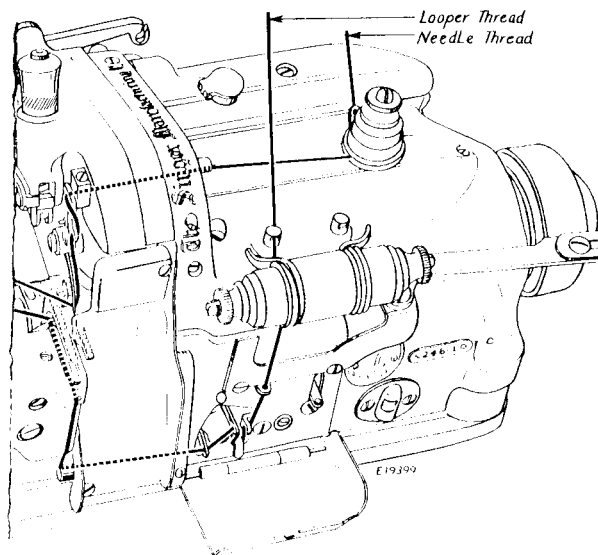


Fig. 13C. Threading the Machine

TO REGULATE THE TENSIONS

See Fig. 14

Tensions of the needle thread and the looper threads should be sufficient to ensure a tight stitch, while still light enough to permit the threads to be easily drawn without breaking.

The tension of the **needle thread** is regulated by the thumb nut **R**. The tension of the **left looper thread** is regulated by the thumb nut **S**. The tension of the **right looper thread** is regulated by the thumb nut **T**.

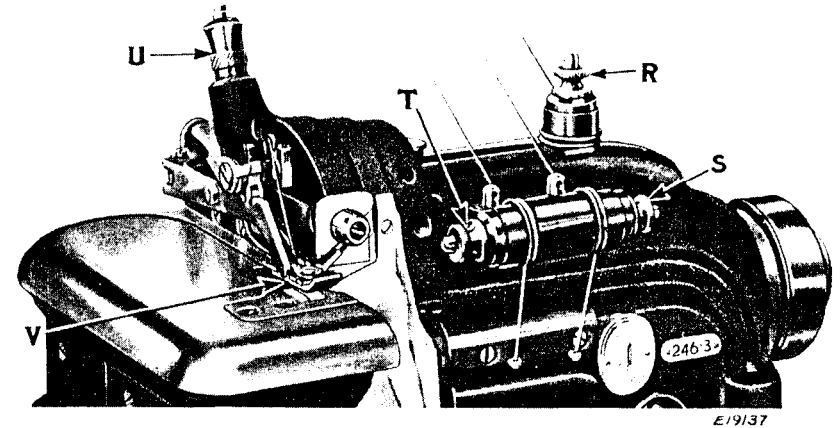


Fig. 14. Adjustments

TO REGULATE THE PRESSURE ON THE MATERIAL

See Fig. 14

The pressure of the presser foot **V** on the material, is regulated by the thumb screw **U** at the top of the machine. To increase the pressure, turn the thumb screw **U** downward. To decrease the pressure, turn the thumb screw **U** upward.

TO CHECK THE CURVATURE OF THE NEEDLE

See Fig. 15

The curvature of the needle blade should be checked with Gauge # 164336 before making any stitching adjustments. To check the needle curvature, place the needle in the gauge, so that its flat side lies along the bottom surface of the groove **A6**. Push the needle into the groove as far as it will go against the stop **B6**.

Turn the thumb nut **C6**, causing the tip of the radial gauge **D6** to follow the curve of the needle blade. The tip should just make contact at the eye, and should be .005 to .006 inch clear at the upper end of the curve.

When the needle does not pass this test, it should be replaced with one having the correct curvature.

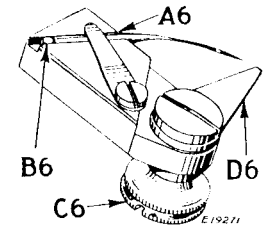


Fig. 15  
Needle Curvature Gauge No. 164336

## TO CHANGE THE LENGTH OF STITCH

Figs. 16 and 16A

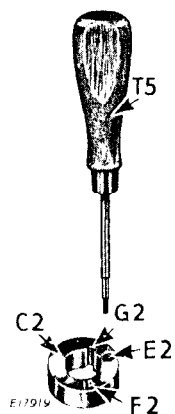


Fig. 16  
Feed Eccentric 164020 and  
Extractor 164203

The differential feed consists of two feed dogs A2 and B2 independently actuated by two feed eccentrics C2.

The length of stitch is determined by the feed eccentric in use. Each feed eccentric is marked with the number of stitches it makes, as shown at F2.

When both feed eccentrics are marked for the same stitch length, the two feed dogs act as one, feeding the material evenly.

Feed eccentric #164020 can be furnished to make 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 20, 22, 24, 28, 32 or 36 stitches per inch. Unless otherwise ordered, only two feed eccentrics making approximately 14 stitches per inch, are regularly supplied with the machine.

To remove the feed eccentrics, swing the cloth plate Q and the feed eccentric cover S5 out to the left, remove the hex nut from the shaft D2 and screw the feed eccentric extractor T5, supplied with the machine, into the threaded hole E2.

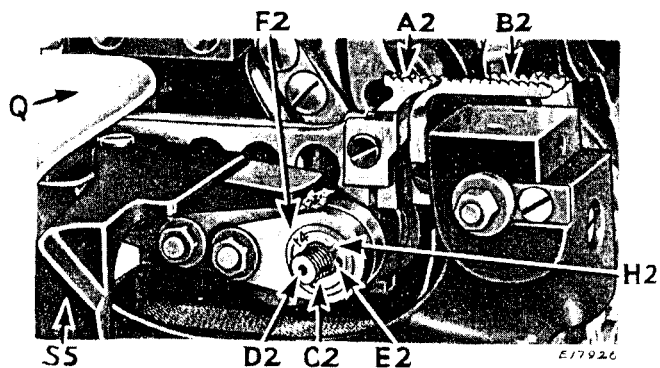


Fig. 16A. Adjustments of Differential Feed

By pulling gently with the extractor T5, the outer feed eccentric can be removed first, and then, in the same manner, the inner feed eccentric can also be removed.

When replacing the feed eccentrics, be sure that the stamped number is on the outside face F2 of each eccentric. The groove G2 should fit over the key H2 on the shaft D2. When both feed eccentrics are firmly in position, screw the hex nut securely on the shaft D2.

## TO GATHER THE MATERIAL

See Fig. 16A

To gather, the front feed dog B2, or the one nearer you, must be set to make a longer stitch than that for which the rear feed dog A2 is set.

The inner feed eccentric controls the front feed dog B2. The outer feed eccentric controls the rear feed dog A2.

When replacing the feed eccentrics for gathering, the eccentric designed for the longer stitch should be the inner feed eccentric, or the one put on the shaft D2 first.

## TO STRETCH THE MATERIAL

See Fig. 16A

To stretch the material, the rear feed dog A2, or the one farther from you, must be set to make a longer stitch than that for which the front feed dog B2 is set.

When replacing the feed eccentrics for stretching the material, the eccentric designed for the longer stitch should be the outer feed eccentric, or the one put on the shaft D2 last.

## TO SET THE FEED DOGS AT THEIR CORRECT HEIGHT

(Using Gauge # 164459 for Machine 246-3  
and Gauge # 164460 for Machine 246-5)

See Fig. 17

To check the height of the feed dogs, swing the presser foot K out to the left. Place the gauge J2 over the feed dogs and firmly resting upon the throat plate U2, as shown in Fig. 17. Turn the machine pulley over from you until the feed dogs are at their highest point, in which position the feed dogs should just touch the bottom face K2 of the gauge J2.

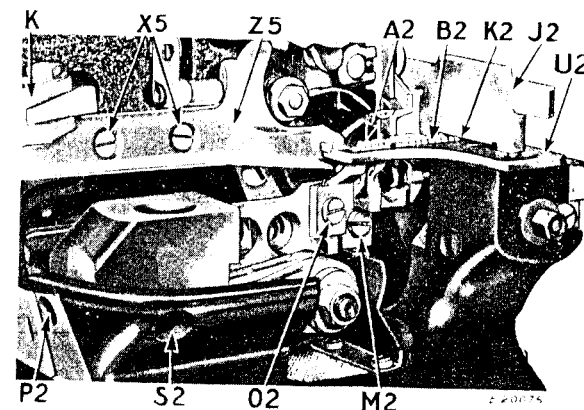


Fig. 17. Setting the Feed Dogs

To set the front feed dog B2, swing the cloth plate Q, Fig. 16A and the feed eccentric cover S5, Fig. 16A out to the left, then loosen the adjusting screw M2 and move the feed dog B2 up or down, as required. Then tighten the screw M2.

To set the rear feed dog A2, loosen the adjusting screw O2 and move the feed dog A2 up or down, as required. Then tighten the screw O2.



## TO TILT THE FEED DOGS

See Fig. 17

When it is desired to tilt the feed dogs, first set them at their correct height as described on page 13. Then loosen the hinge pin set screw P2 at the rear of the machine.

To tilt feed up in the rear and down in the front of the needle, slowly turn the hinge pin S2 over toward the rear of the machine, until the desired amount of tilt is obtained.

To tilt the feed down in the rear and up in the front of the needle, slowly turn the hinge pin over toward the front of the machine, until the desired amount of tilt is obtained. Then tighten the screw P2.

## TO SET THE NEEDLE CARRIER AT THE CORRECT HEIGHT

(Using Gauge # 164459 for Machine 246-3  
and Gauge # 164460 for Machine 246-5)

See Figs. 18 and 19

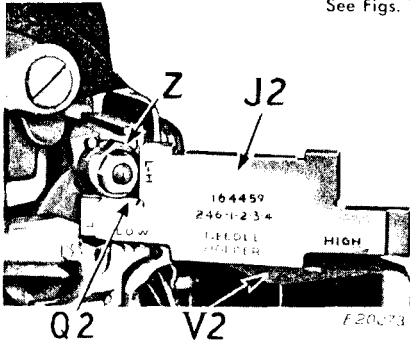


Fig. 18  
Checking the  
Needle Carrier Height

At this setting, the needle carrier Z should just touch the top surface Q2 on the "LOW" end of the gauge J2.

To check the height of the needle carrier, turn the machine pulley over from you until the needle carrier Z reaches its highest position. Remove the needle and the throat plate, swing the presser foot and cloth plate out to the left and turn the machine pulley over from you until the needle carrier Z reaches its lowest position. Slip the "LOW" end of the gauge J2 between the needle carrier and the throat plate seat, as shown in Fig. 18.

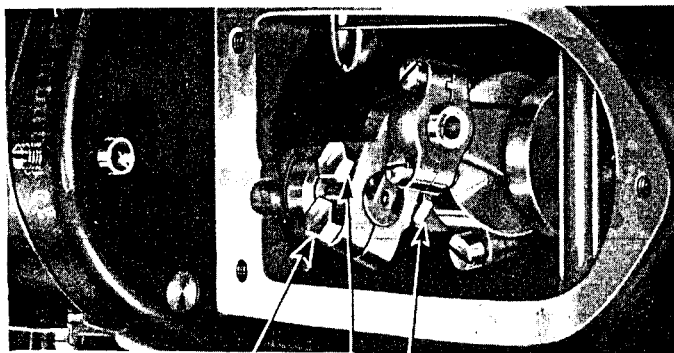


Fig. 19. Adjusting the Needle Carrier

To set the needle carrier at the correct height, remove the top frame cover and loosen the clamping screw T2 and the two adjusting screws D5 and Y. Move the needle carrier Z up or down, as required. Then first securely tighten the screw T2. Next tighten the two screws D5 and Y, and replace the top frame cover on the machine.

## TO SET THE LEFT LOOPER IN RELATION TO THE NEEDLE

(Using Gauge # 164459 for Machine 246-3  
and Gauge # 164460 for Machine 246-5)

See Figs. 20 and 21

To install the left looper, remove the throat plate U2, Fig. 17 and the chip guard W, Fig. 24, page 18. Loosen the set screw W2 in the left looper holder C3, and set the looper all the way down into its holder. Then securely tighten the set screw W2.

To set the left looper the correct distance to the left of the needle, turn the machine pulley over from you until the needle carrier Z, after reaching its lowest position, rises sufficiently to permit the "HIGH" end of the gauge J2 to pass between the needle carrier and the throat plate seat, as shown in Fig. 20. At this setting the needle carrier Z should just touch the top surface U4 on the "HIGH" end of the gauge and the tip of the left looper Z2 should just touch the left side of the needle. If the left looper does not reach the needle at this setting, loosen the right adjusting screw B3, and tighten the left adjusting screw A3, until the tip of the left looper meets the needle.

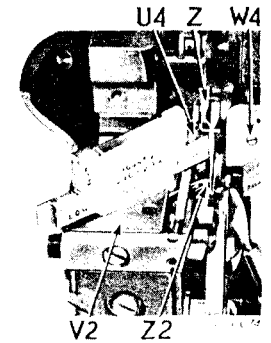


Fig. 20  
Setting the Left  
Looper

If the left looper passes the needle at the above setting, loosen the left adjusting screw A3 and tighten the right adjusting screw B3 until the tip of the left looper Z2 returns to the correct position. Then tighten the screw A3 and recheck the sidewise position of the left looper in relation to the needle, as described above.

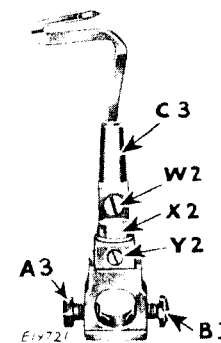


Fig. 21  
Left Looper

The left looper must rub lightly on the needle as it passes behind the needle in its movement toward the right. To set the left looper correctly behind the needle, remove the throat plate U2, Fig. 17 and the chip guard W, Fig. 24 and turn the machine pulley over from you until the point of the left looper just passes the needle. Loosen the adjusting screw Y2 and the set screw X2 and move the looper holder C3 until the left looper Z2 almost touches the needle from the rear. Tighten the set screw X2 and then slowly tighten the adjusting screw Y2 until the left looper Z2 actually rubs on the needle. Then replace the throat plate U2, Fig. 17, and the chip guard W, Fig. 24.

TO SET THE RIGHT LOOPER IN RELATION TO THE NEEDLE  
(Using Gauge # 164459 for Machine 246-3  
and Gauge # 164460 for Machine 246-5)

See Figs. 22 and 23

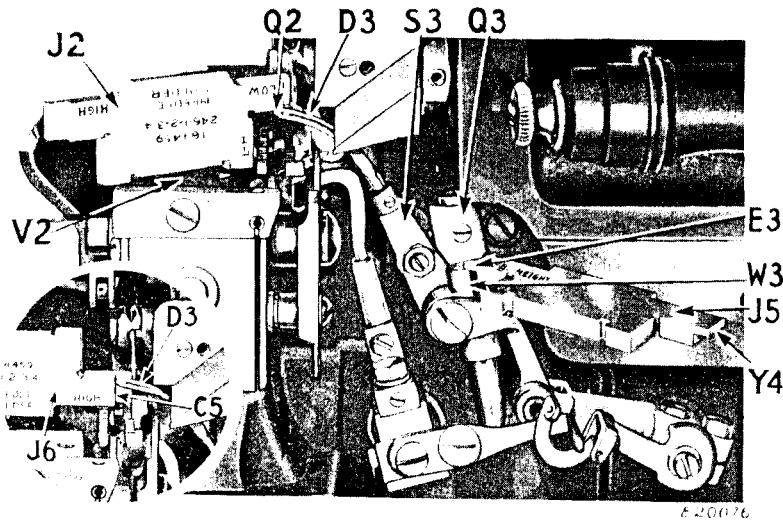


Fig. 22. Setting the Right Looper

To properly adjust the right looper setting, swing the presser foot out to the left, remove the chip guard W, Fig. 24, page 18, open the front cover plate P, Fig. 25, page 19, and remove the looper thread plate O3, Fig. 25 and the throat plate.

Adjust the right looper in the same order given in the following instructions.

1. When the right looper carrier is at its extreme left position, the distance between the bracket Q3 and the guide bar W3 must not be greater than the thickness E3 on the end of the gauge, J5, Fig. 22, marked "LOW." However, this clearance must be at least equal to the thickness Y4 on the end of the gauge marked "HIGH."

To adjust the distance between the bracket and guide bar, loosen the clamping screw M3 and the adjusting screws N3 and P3. To **increase** this distance, tighten the lower adjusting screw P3 until the proper distance is obtained. To **decrease** this distance, tighten the upper adjusting screw N3. When the correct setting is obtained, securely tighten the clamping screw M3.

2. Loosen the two set screws G3 and move the bracket Q3 right and left to determine its extreme right and left positions on the casting. Locate the bracket Q3 at the midpoint of the two extremes and tighten the two set screws G3.

3. Insert the looper D3 in the looper carrier S3 and place the gauge on the throat plate seat, as shown at J2, Fig. 22. When the right looper D3 is at its extreme left position, it should just touch the undersurface Q2 on the "LOW" end of the gauge.

To set the right looper at the correct height, loosen the set screw F3 on the looper collar K3 and loosen the nut on the locking screw stud H3 on the looper carrier S3, making sure that the slot in the locking screw stud H3 is in line with the looper carrier, set the right looper D3 up or down in looper carrier, as required, and tighten the nut on the stud H3 in looper carrier. Then press looper collar K3 firmly down against the looper carrier and securely tighten the set screw F3.

4. When the right looper passes the left looper, it should pass behind the left looper head and in front of the needle. Place the "HIGH" end of the gauge, shown at J6 in the insert in Fig. 22, against the left side of the needle. Turn the machine pulley until the right looper D3 is at its extreme left position. At this point, the tip of the right looper D3 should just touch the surface C5 of the gauge.

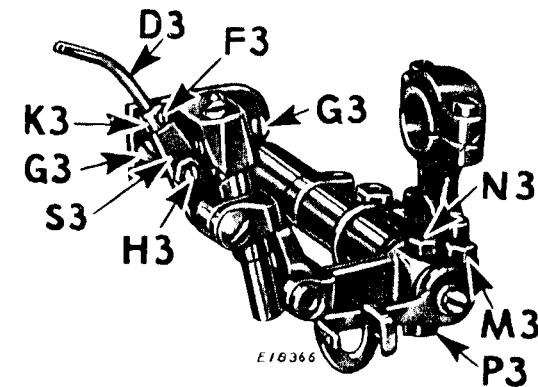


Fig. 23. Adjustments of the Right Looper

5. The right looper, when passing behind the left looper, should brush lightly on the front of the needle. To adjust this position of the right looper D3, loosen the nut on the stud H3 and move the right looper D3 in the right looper carrier S3, as required, then securely tighten the nut on the stud H3. Recheck and adjust the height and the right and left position of the right looper, as described above.

When all the settings of the right looper have been properly adjusted, check each setting again and make sure all set screws and nuts are securely tightened. Then replace looper thread plate O3, Fig. 25, and chip guard W.

### TO ADJUST THE NEEDLE THREAD CONTROLLER

See Fig. 24

When the needle is at its highest position, the needle thread should run under the clearance U3 of the needle thread controller J3.

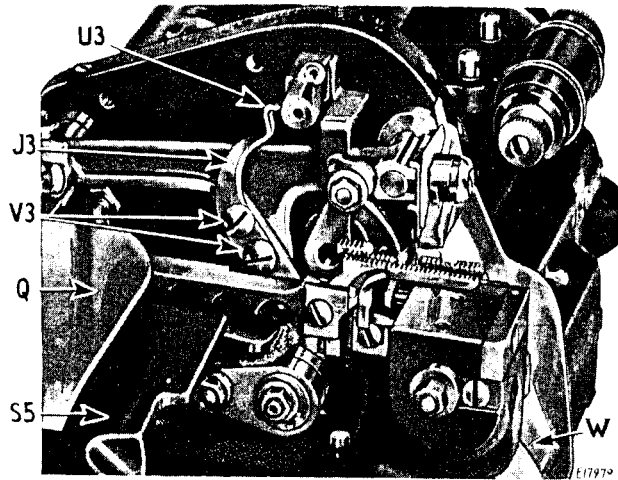


Fig. 24. Adjustments of the Needle Thread Controller

To adjust the needle thread controller, remove the screws X5, Fig. 17, and the oil splash guard Z5, Fig. 17. Remove the top cover G4, Fig. 25 and swing the cloth plate Q out to the left. Loosen the two set screws V3 and move the needle thread controller J3 toward the front or back, as required. Then securely tighten the two screws V3 and replace the splash guard Z5 and the top cover G4.

### TO SET THE LOOPER TAKE-UP—(LEFT)

See Fig. 25

When left looper Z2 is moved to its extreme right position, the eye of the left take-up X3 should be in line with the center of the left looper thread bushing Y3, as shown in Fig. 25.

To set the left take-up X3, remove the chip guard W, Fig. 24, and open the front cover plate P. Loosen the two set screws T3 and raise or lower the right end of the left take-up X3, as required. Then securely tighten the set screws T3 and replace the chip guard W.

### TO SET THE LOOPER TAKE-UP—(RIGHT)

See Fig. 25

When left looper Z2 is moved to its extreme right position, the eye on the right take-up A4 should be in line with the left looper thread bushing Y3 and the eye of the left take-up X3, as shown in Fig. 25.

To set the right take-up A4, open the front cover plate P and loosen the set screw C4. Raise or lower the right take-up A4, as required. Then securely tighten the set screw C4 and close the cover plate P.

### TO SET THE RIGHT LOOPER THREAD STRIPPER

See Fig. 25

The right looper thread stripper B4 should be normally at the midpoint of the top and bottom extremes of its adjustment, as shown in Fig. 25.

To set the right looper thread stripper, open the front cover plate P and loosen the set screw H4. Raise or lower the eyelet B4, as required. Then securely tighten the set screw H4 and close the cover plate P.

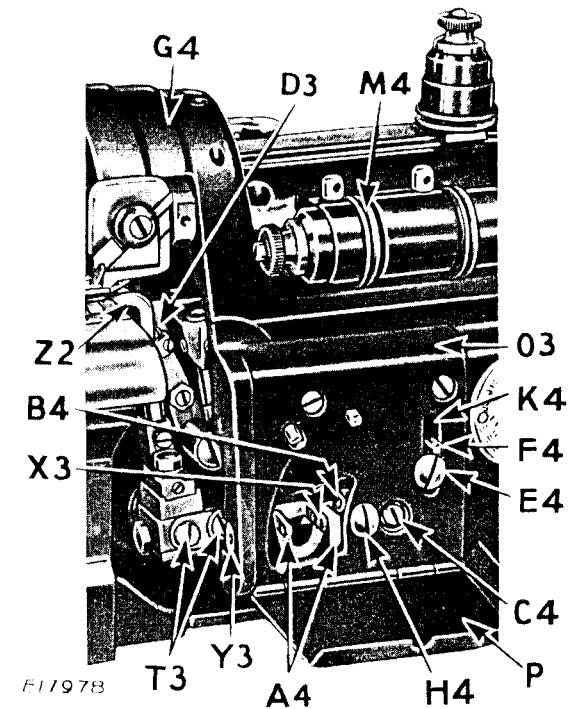


Fig. 25. Adjustments of the Looper Thread Take-up

### TO SET THE LEFT LOOPER THREAD EYELET

See Fig. 25

The left looper thread eyelet F4 should be normally at the midpoint of the slot K4, as shown in Fig. 25.

To adjust the left looper thread eyelet, loosen the set screw E4 and raise or lower the eyelet F4 to the proper location. Then securely tighten the set screw E4.

### TO ADJUST THE TAKE-UP FOR BOTH LOOPER THREADS

See Fig. 25

To get **more thread** through both loopers, lower the right take-up A4, or raise the left take-up X3.

To get **less thread** through both loopers, raise the right take-up A4, or lower the left take-up X3.

### TO ADJUST THE SLACK ON THE RIGHT LOOPER THREAD

See Fig. 25

When the right looper D3 is moved to its extreme left position, the right looper thread between the eyelet B4 and the tension discs M4 should have a slight slack. To decrease the slack on right looper thread, lower eyelet B4. To increase the slack on right looper thread, raise eyelet B4.

### TO ADJUST THE STATIONARY KNIFE FOR WIDTH OF BIGHT

See Fig. 26

The relation of the stationary knife J4 to the needle determines the width of bight. To adjust, loosen the set screw T4 and move the stationary knife holder S4 to the left or right, as required. Securely tighten the set screw T4. Then adjust the movable knife in relation to the stationary knife, as described below. For some types of work, the width of bight must conform to the width of the chaining-off finger.

### TO ADJUST THE MOVABLE KNIFE IN RELATION TO THE STATIONARY KNIFE

See Fig. 26

To adjust the movable knife D4, in relation to the stationary knife J4, remove the clamp screw Q4, the knife clamp Z3, and the chip ejector O4. Loosen the set screw W4, Fig. 20, page 15, and move the knife holder P4 to the right or left, until the cutting edge of the movable knife D4, at its lowest position, is **slightly** below the cutting edge of the stationary knife J4. Securely tighten the set screw W4, Fig. 20. Then replace the chip ejector O4, the knife clamp Z3 and the clamp screw Q4. While lightly pressing the movable knife D4 downward against the stationary knife J4, tighten the screw Q4.

### TO REMOVE THE STATIONARY KNIFE

See Fig. 26

To remove the stationary knife J4, loosen the nut V4, and draw the knife J4 upward and out.

### TO REPLACE THE STATIONARY KNIFE

See Fig. 26

To replace the stationary knife J4, push the knife downward in the knife holder S4, until the cutting edge of the knife is flush with the throat plate U2. Then securely tighten the nut V4.

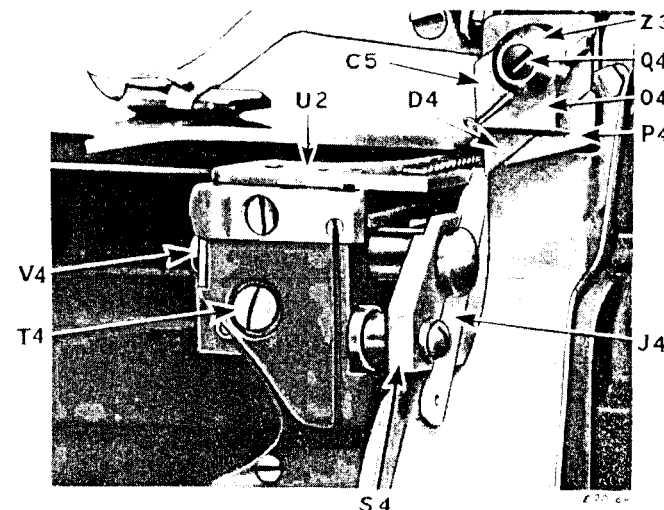


Fig. 26. Adjusting the Trimmer

### TO REMOVE THE MOVABLE KNIFE

See Fig. 26

To remove the movable knife D4, remove the clamp screw Q4, the knife clamp Z3, the knife guard C5, and the chip ejector O4. Then lift the knife D4 from the knife holder P4.

### TO REPLACE THE MOVABLE KNIFE

See Figs. 26 and 27

To replace the movable knife D4, slip the knife in knife holder P4, replace the chip ejector O4, the knife clamp Z3, the knife guard C5, and the clamp screw Q4. Press the movable knife D4 downward against the stationary knife J4 and securely tighten the clamp screw Q4.

Then turn the machine pulley over from you, until the lowest point X4, of the cutting edge of the movable knife D4, just reaches the cutting edge of the stationary knife J4, as shown in Fig. 27. Loosen the set screw T4 sufficiently to release the spring behind the stationary knife J4, permitting the stationary knife to make a tight spring contact with the movable knife D4. Then securely tighten the set screw T4.

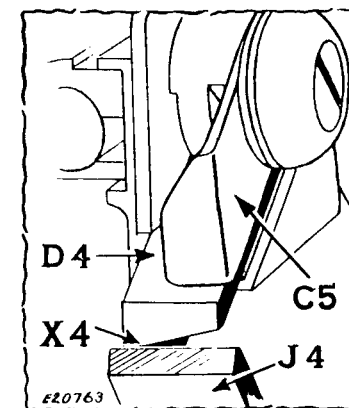


Fig. 27

Contact Point of Knives

## TO SHARPEN THE TRIMMER KNIVES

See Figs. 28 and 29

Either **SINGER**\* Knife Grinding Machine 701-7 (motor driven), illustrated here, or **SINGER** Knife Grinding Machine 701-9 (belt driven), are necessary for sharpening the knives used on Machines of Class 246. The use of these grinders insures the correct bevel of the cutting edge of each knife. Do not attempt to sharpen these knives by hand.

When ordering Knife Grinder 701-7, the desired voltage range should always be stated. Knife Grinder 701-7 should always be operated within the voltage range stamped on the motor name plate. The motor switch is shown at H5.

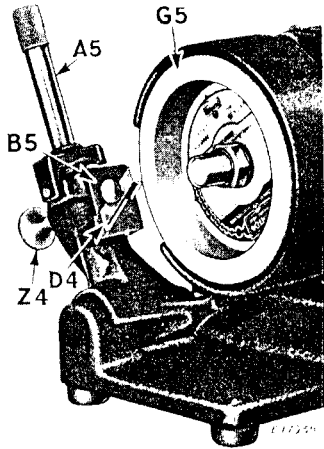


Fig. 28. Sharpening the Movable Knife

To sharpen movable knife D4, insert it in the knife holder B5, on the front of the lever arm A5, then tighten the thumb screw Z4.

Turn the thumb nut E5 over from you until the knife D4 clears the grinding face G5. While moving the lever arm A5 alternately back and forth, turn the thumb nut E5 as required, to bring the cutting edge of the knife lightly against the grinding face of the wheel.

Continue the back and forth motion of the lever arm, grinding off only enough to sharpen the cutting edge.

The movable knife is thus ground to a shearing edge, requiring no special setting in the machine to shear.

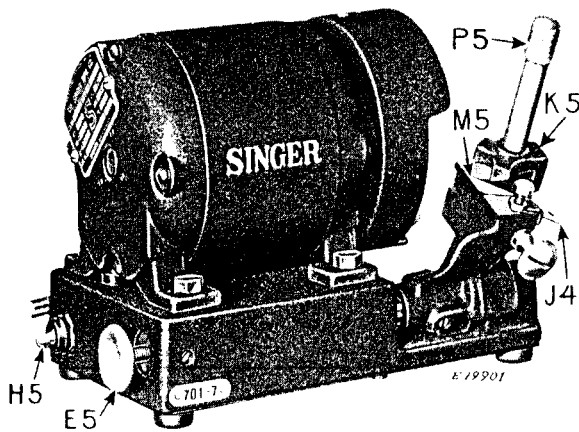


Fig. 29. Sharpening the Stationary Knife

To sharpen the stationary knife J4, insert it in the knife holder K5, on the rear of the lever arm, so that its bevel M5 is parallel with the grinding face G5 of the grinding wheel, then by turning the knurled end P5, of the lever arm, screw the lever arm into the knife holder K5, securing the knife. Sharpen the knife as described above.

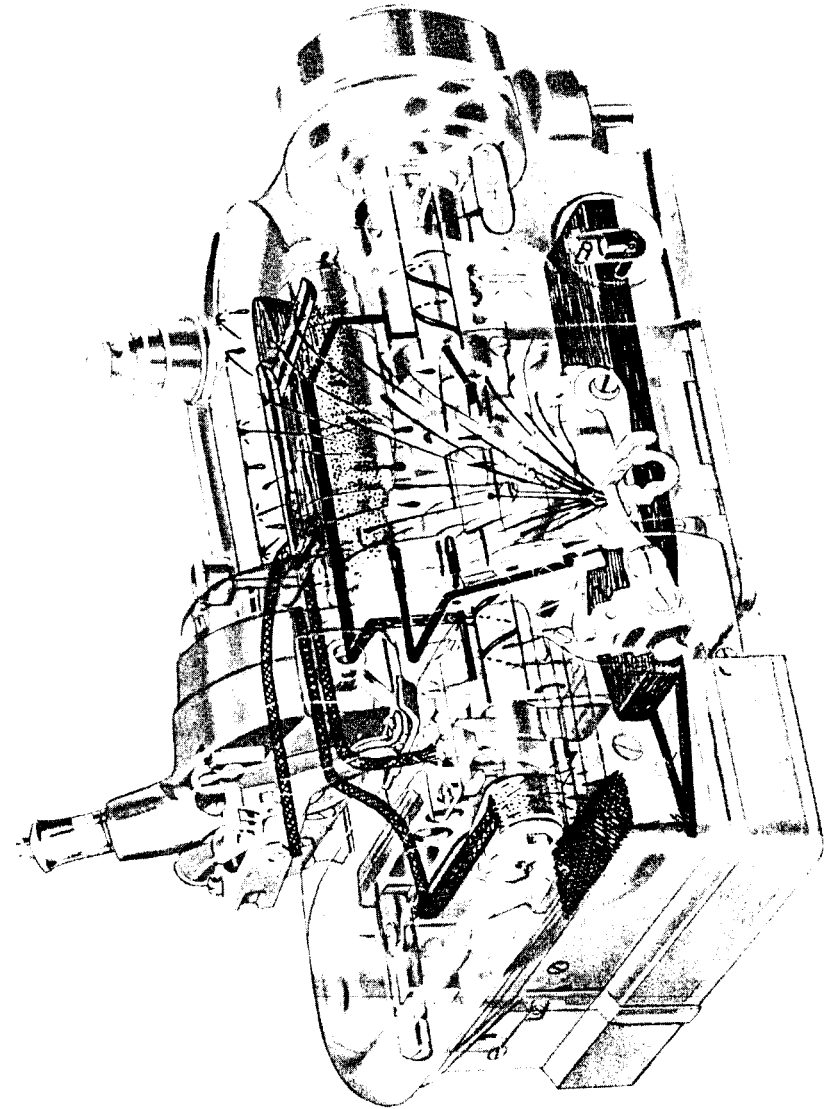


FIG. 30. SHOWING COMPLETE AUTOMATIC LUBRICATION SYSTEM OF MACHINES OF CLASS 246

LUBRICATION SHOWN IN SOLID BLACK.

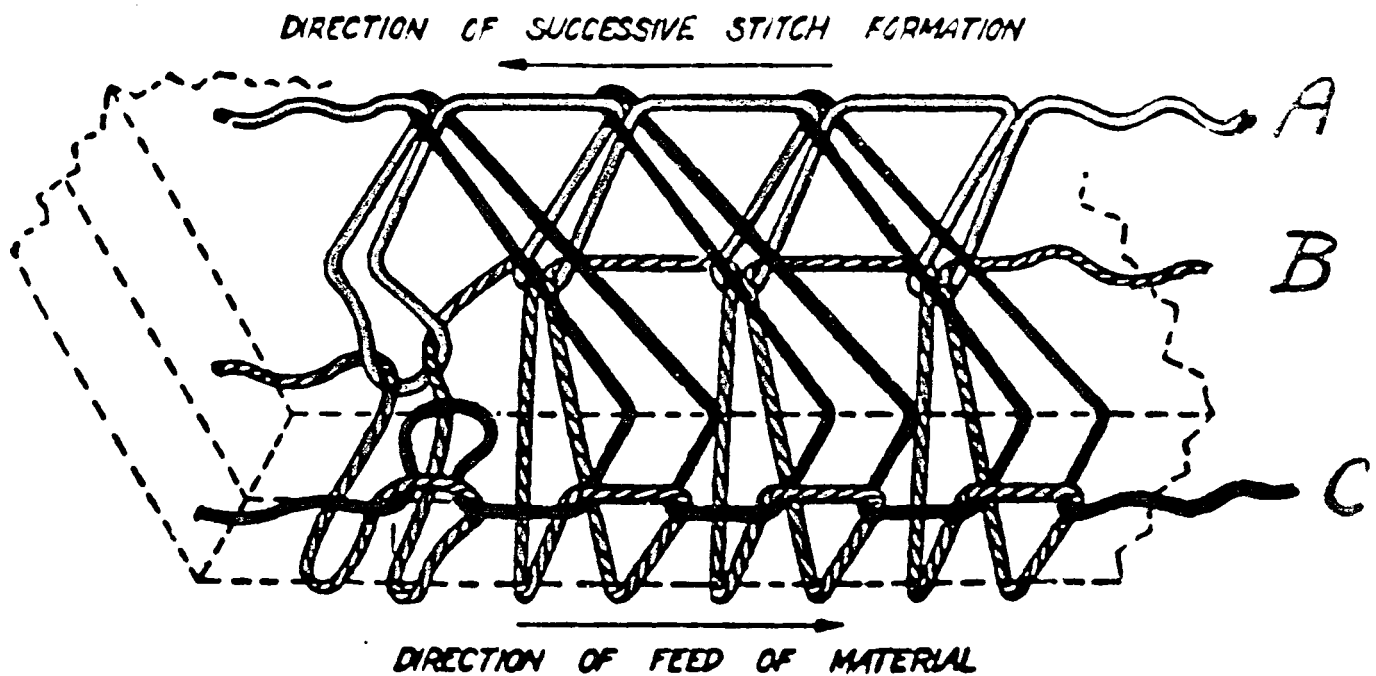
# SINGER SEWING MACHINE

246-3

## STITCH FORMATION

THREE THREAD TIGHT STITCH

(FEDERAL STITCH TYPE \* 504)



This type of stitch shall be formed of three threads. A loop of one thread (designated A in the sketch) shall be passed through the material, where it shall be entered by a loop of a second thread (designated B). This loop of the B thread shall then be extended to the edge of the material, where it shall be entered by a loop of a third thread (designated C). This loop of the C thread shall then be carried forward over the surface of the material, originally entered by the loop of the A thread, to a point where it will be entered by the next succeeding loop of the A thread before that loop is passed through the material.

The above operations are repeated to form a sequence of stitches.

This stitch can also be made on SINGER Sewing Machine 246-2

THE SINGER MANUFACTURING COMPANY

## TO SET THE FEED DOGS AT THEIR CORRECT HEIGHT

(See Fig. 1)

To check the height of the feed dogs, swing the presser foot **K** out to the left. Place the gauge **J2** over the feed dogs and firmly resting upon the throat plate **U2**, as shown in Fig. 1. Turn the machine pulley over from you until the feed dogs are at their highest point, in which position the feed dogs should just touch the bottom face **K2** of the gauge **J2**.

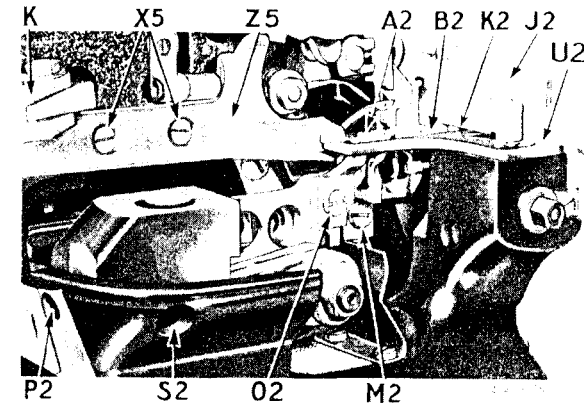


Fig. 1. Setting the Feed Dogs

To set the feed dog **B2**, swing the cloth plate and the feed eccentric cover out to the left, then loosen the adjusting screw **M2** and move the feed dog **B2** up or down, as required. Then tighten the screw **M2**.

To set the rear feed dog **A2**, loosen the adjusting screw **O2** and move the feed dog **A2** up or down, as required. Then tighten the screw **O2**.

## TO SET THE NEEDLE CARRIER AT THE CORRECT HEIGHT

(See Figs. 2 and 3)

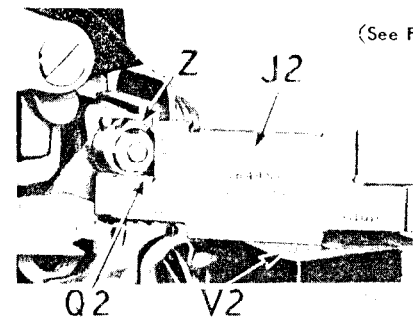


Fig. 2

Checking the Needle Carrier Height

To check the height of the needle carrier, turn the machine pulley over from you until the needle carrier **Z** reaches its highest position. Remove the needle and the throat plate, swing the presser foot and cloth plate out to the left and turn the machine pulley over from you until the needle carrier **Z** reaches its lowest position. Slip the "LOW" end of the gauge **J2** between the needle carrier and the throat plate seat, as shown in Fig. 2.

At this setting, the needle carrier Z should just touch the top surface Q2 on the "LOW" end of the gauge J2.

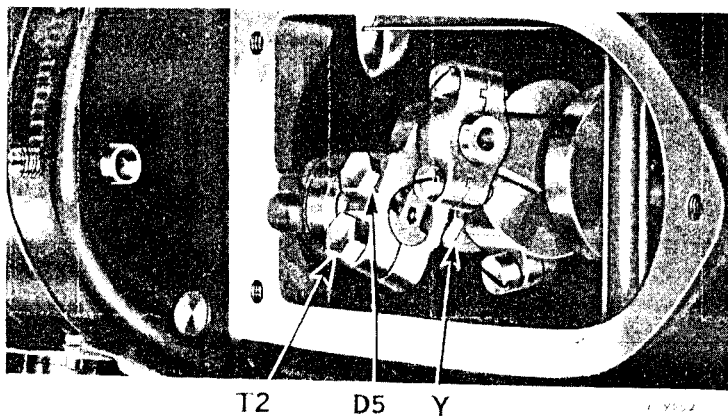


Fig. 3. Adjusting the Needle Carrier

To set the needle carrier at the correct height, remove the top frame cover and loosen the clamping screw T2 and the two adjusting screws X and Y. Move the needle carrier Z up or down, as required. Then first securely tighten the screw T2. Next tighten the two screws X and Y, and replace the top frame cover on the machine.

#### TO SET THE LEFT LOOPER IN RELATION TO THE NEEDLE

(See Figs. 4 and 5)

To install the left looper, remove the throat plate U2, Fig. 2 and the chip guard. Loosen the set screw W2 in the left looper holder C3, and set the looper all the way down into its holder. Then securely tighten the set screw W2.

To set the left looper the correct distance to the left of the needle, turn the machine pulley over from you until the needle carrier Z, after reaching its lowest position, rises sufficiently to permit the "HIGH" end of the gauge J2 to pass between the needle carrier and the throat plate seat, as shown in Fig. 4. At this setting the needle carrier Z should just touch the top surface U4 on the "HIGH" end of the gauge and the tip of the left looper Z2 should just touch the left side of the needle. If the left looper does not reach the needle at this setting, loosen the right adjusting screw B3, and tighten the left adjusting screw A3, until the tip of the left looper meets the needle.

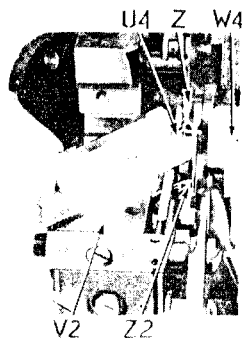


Fig. 4  
Setting the Left Looper

If the left looper passes the needle at the above setting, loosen the left adjusting screw A3 and tighten the right adjusting screw B3 until the tip of the left looper Z2 returns to the correct position. Then tighten the screw A3 and recheck the sidewise position of the left looper in relation to the needle, as described above.

The left looper must rub lightly on the needle, as it passes behind the needle in its movement toward the right. To set the left looper correctly behind the needle, remove the throat plate U2, Fig. 2 and the chip guard and turn the machine pulley over from you until the point of the left looper just passes the needle. Loosen the adjusting screw Y2 and the set screw X2 and move the looper holder C3 until the left looper Z2 almost touches the needle from the rear. Tighten the set screw X2 and then slowly tighten the adjusting screw Y2 until the left looper Z2 actually rubs on the needle. Then replace the throat plate U2, Fig. 2, and chip guard.

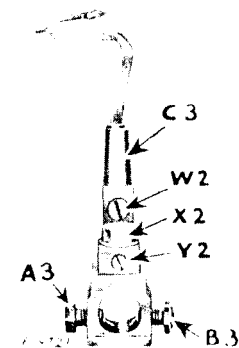


Fig. 5. Left Looper

#### TO SET THE RIGHT LOOPER IN RELATION TO THE NEEDLE

(See Figs. 6 and 7)

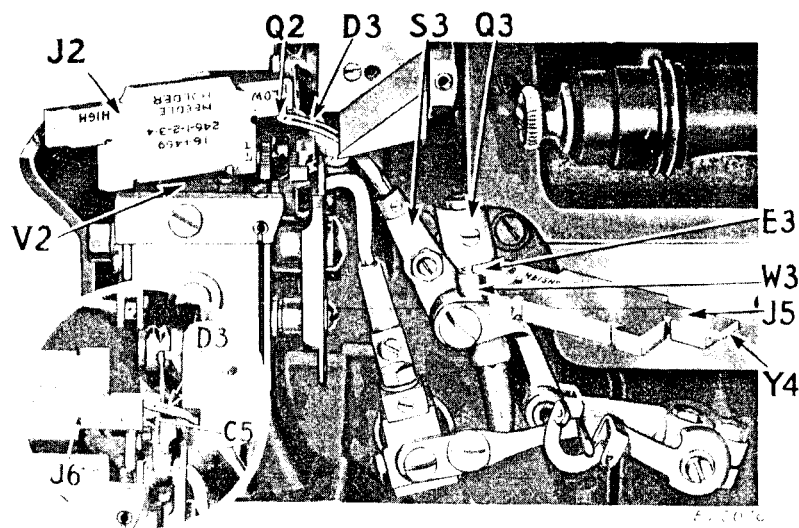


Fig. 6. Setting the Right Looper



To properly adjust the right looper setting, swing the presser foot out to the left, remove the chip guard, open the front cover plate, and remove the looper thread plate and the throat plate.

Adjust the right looper in the same order given in the following instructions.

1. When the right looper carrier is at its extreme left position, the distance between the bracket **Q3** and the guide bar **W3** should be at least equal to the thickness **E3** on the "LOW" side of the gauge shown at **J5**, **Fig. 6**. However, this clearance must be not greater than the thickness **Y4** on the "HIGH" end of the gauge.

To adjust the distance between the bracket and guide bar, loosen the clamping screw **M3** and the adjusting screws **N3** and **P3**. To increase this distance, tighten the lower adjusting screw **P3** until the proper distance is obtained. To decrease this distance, tighten the upper adjusting screw **N3**. When the correct setting is obtained, securely tighten the clamping screw **M3**.

2. Loosen the two set screws **G3** and move the bracket **Q3** right and left to determine its extreme right and left positions on the casting. Locate the bracket **Q3** at the midpoint of the two extremes and tighten the two set screws **G3**.

3. Insert the looper **D3** in the looper carrier **S3** and place the gauge on the throat plate seat, as shown at **J2**, **Fig. 6**. When the right looper **D3** is at its extreme left position, it should just touch the undersurface **Q2** on the "LOW" end of the gauge.

To set the right looper at the correct height, loosen the set screw **F3** on the looper collar **K3** and loosen the nut on the locking screw stud **H3** on the looper carrier **S3**. Making sure that the slot in the locking screw stud **H3** is in line with the looper carrier, set the right looper **D3** up or down in looper carrier, as required, and tighten the nut on the stud **H3** in looper carrier. Then press looper carrier **K3** firmly down against the looper carrier and securely tighten the set screw **F3**.

4. When the right looper passes the left looper, it should pass behind the left looper head and in front of the needle. Place the "HIGH" end of the gauge, as shown at **J6**, in the insert in **Fig. 6**, against the left side of the needle. Turn the machine pulley until the right looper **D3** is at its extreme left position. At this point, the tip of the right looper **D3** should just touch the surface **C5** of the gauge.

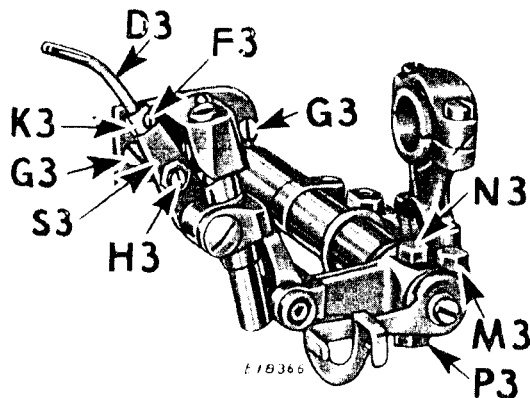


Fig. 7. Adjustments of the Right Looper

5. The right looper, when passing behind the left looper, should brush lightly on the front of the needle. To adjust this position of the right looper **D3**, loosen the nut on the stud **H3** and move the right looper **D3** in the right looper carrier **S3**, as required, then securely tighten the nut on the stud **H3**. Recheck and adjust the height and the right and left position of the right looper, as described above.

When all the settings of the right looper have been properly adjusted, check each setting again and make sure all set screws and nuts are securely tightened. Then replace looper thread plate and chip guard.