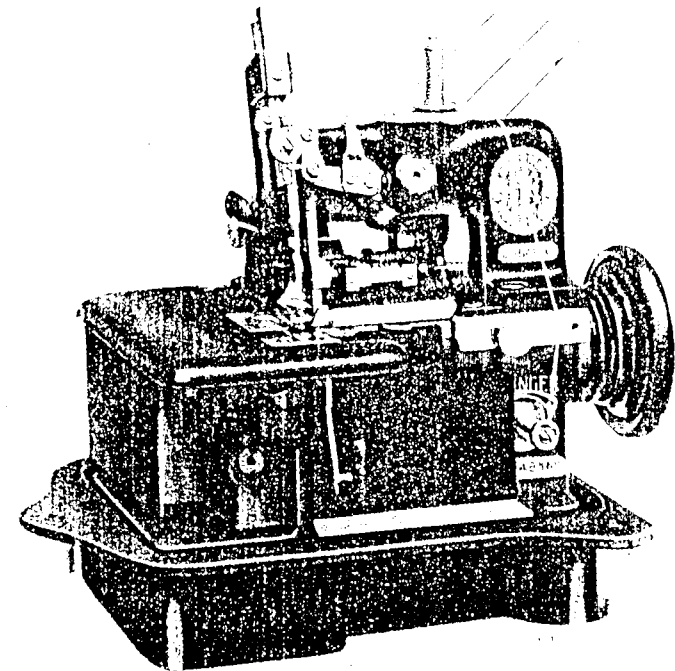


SINGER
81K70,K72,K73,K76

INSTRUCTIONS
FOR USING AND ADJUSTING
SINGER* SEWING MACHINES
81K70, 81K72, 81K73
AND 81K76
HIGH SPEED



* A Trade Mark of
THE SINGER MANUFACTURING CO.

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 authorised Singer agency is forbidden.

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

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

Genuine 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 <u>not</u> Singer made needles. 2
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DESCRIPTION

These machines make either the two or three thread overedge chain stitch and trim the edges of the goods in advance of the stitching so that the article can be shaped while it is being stitched.

They are automatically oiled by means of a series of wicks which convey the oil from the reservoirs to the principal bearings.

Machine 81K70 is fitted with a gathering feed and is used for trimming and closing seams in light and medium weight knit materials and rayon.

Machine 81K72 is used for trimming and overedging flannels, muslins, denim and other similar materials and also for rayon where a gathering feed is not required. It is used for inserting sleeves, seaming house dresses, etc., also for stitching pockets into trousers.

Machine 81K73 is used for trimming, overedging and closing seams in light and medium weight knit materials and rayon. It has a new gathering feed which can be quickly adjusted by hand to regulate the fullness of gathering on sweater material, or for rayon where gathering is not required. For loosely knitted sweaters, the knife can be adjusted to trim $\frac{5}{16}$ inch from the needle.

Machine 81K76 is used for trimming, overedging and blind-stitch hemming or welting in knit underwear. It is fitted with a gathering feed.

Note

Orders for the above machines should specify the class of work for which the machine is required, so as to insure fitting the machine with the parts suitable for the work.

Speed

Important: For the first week, run the machines up to 4000 revolutions per minute; the second week 4300; and the third week 4500. The speed of 4500 revolutions per minute can be maintained for long runs.

To Set Up the Machine

Line up the machine on the table so that the belt groove of the balance wheel is in line with the belt groove of the driving pulley.

To Install Base 132704: By means of a template or other method, spot and drill five holes in the table before the base is fastened to the table. The diameters of these holes are $\frac{3}{8}$ " for the three machine base bolts, $\frac{3}{4}$ " for the machine base thumb screw, and $1\frac{1}{4}$ " for the oil drain pipe.

Fasten the base to the table by means of the three bolts. Then screw the drain pipe, from the underside of the table, into the drain hole in the machine base.

Be sure the felt cushions are in place, including the center cushion, then set the machine on the base. Place the spring and washer over the machine base thumb screw, put this screw through the center hole in the base from the underside of the table, and securely tighten the screw.

To Install Lowered Base 132705: For the cut-out in the table, lay the base right side up on the table and outline the base with pencil. Cut the hole $\frac{1}{8}$ " larger than the pencil outline so that the base will not touch the plank.

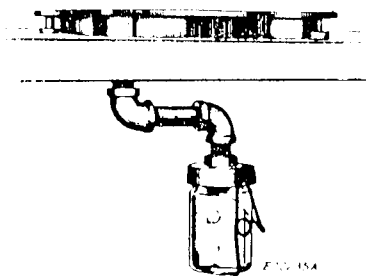


FIG. 3

Remove the three screw pins from the base and with a center punch, through the screw pin holes, make a spot mark for the center of the bit. A bit $\frac{5}{8}$ " diameter should be used and the three holes should be of such a depth that the three rubber cushions will extend $\frac{1}{8}$ " above the top of the table. Replace the screw pins, and when placing the base in position, have each pin enter the hole in the center of the rubber cushions as shown. Then press the base down until it rests on the cushions. The oil drain jar should be located out of the operator's way.

Fasten the machine to the base as instructed above.

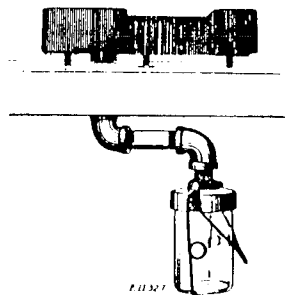


FIG. 2

Oiling

Before Starting the Machine: Apply Singer "OIL FOR HIGH SPEED SEWING MACHINES (Cloth and Leather)"

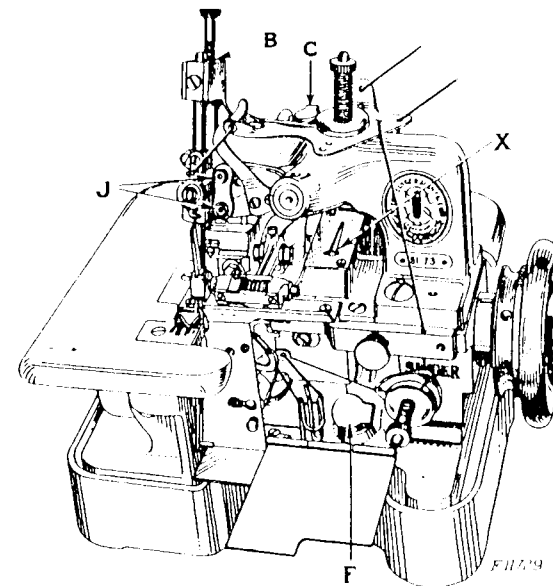


FIG. 4. FRONT VIEW, SHOWING OILING POINTS

for general use or "STAINLESS OIL FOR HIGH SPEED SEWING MACHINES" where a stainless oil is desired, to the oil hole (X, Fig. 4) and oil cup (F, Fig. 4) until the reservoirs are full. Fill the oil cup (C) at the top of the machine and thoroughly saturate the wick through the hole (B) in the casting near the top of the needle bar. Then oil the needle bar link connection (J) at the front of the machine. Also apply oil to the knife lever and presser lever bearings (M, Fig. 5) at the back of the machine.

Thereafter, replenish the oil supply in the reservoirs about once each day, or often enough to keep them filled. Twice a day apply oil to the remainder of the oiling points.

The surplus oil drips into the cast iron base and this oil should be occasionally drained by turning the tap which is provided in the base for this purpose.

Caution: A machine new from the factory, or one that has not been used for some time, should not be operated until about three hours after filling the reservoirs. Failure to heed this caution may result in serious damage to the mechanism of the machine.

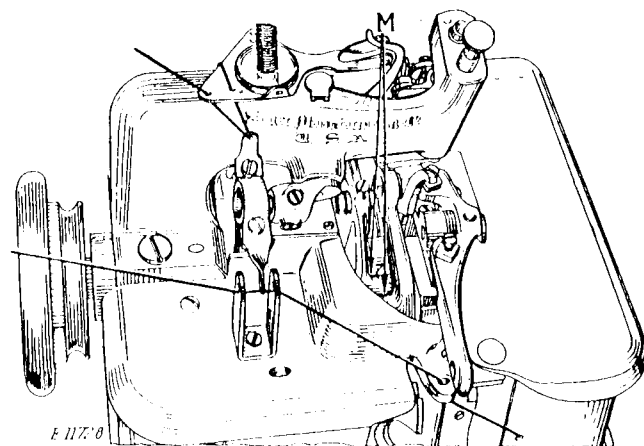


FIG. 5. REAR VIEW, SHOWING OILING POINTS

Needles and Thread

Needles for Machines 81K72 and 81K76 are of Class and Variety 81x1 and are made in sizes 8, 9, 11, 14, 16, 17, 18, 19 and 21.

Needles for Machines 81K70 and 81K73 are of Class and Variety 81x1 and 81x13. Needles 81x13 are used on rayon and are made in sizes 7, 9 and 11.

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 operation of the machine.

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. 16, 81x1 Needles."

The best results will be obtained in using the needles furnished by the Singer Sewing Machine Company.

To Set the Needle

Loosen the clamping nut (P, Fig. 7) at the lower end of the needle bar and put the needle up into the bar as far as it will go, with the clearance above the eye at the back, or farthest from you. Then tighten the clamping nut (P).

Needle Threading on Machines 81K70, 81K72 and 81K73 (For Three-Thread Stitch)

Pass the thread from the unwinder down through the hole (1) in the tension bracket, from back to front through the lower

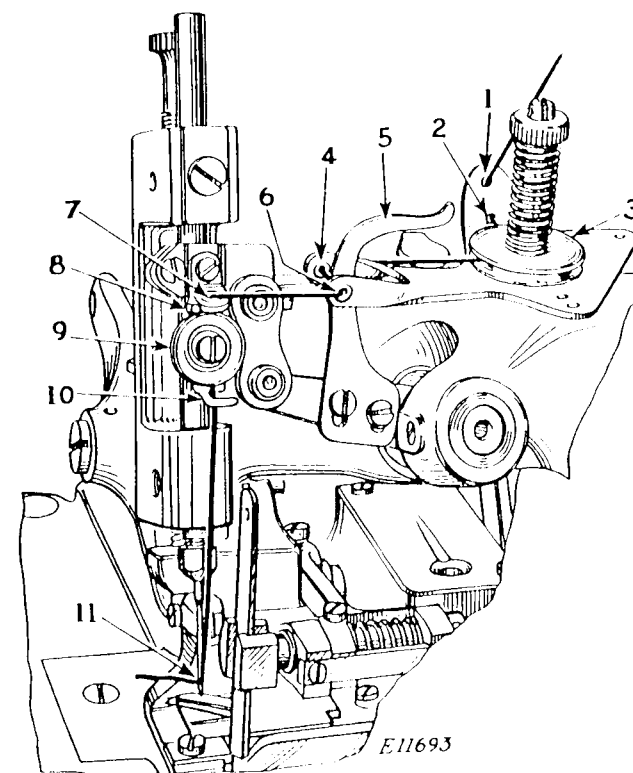


FIG. 6. THREADING THE NEEDLE

hole (2), around the front between the tension discs (3), from back to front through the eyelet (4), to the left of the take-up (5), through the eyelet (6), down through the hole (7) in the thread controller, to the right of the pin (8), to the left between the thread retainer discs (9), to the right of guide (10) and from front to back through the eye (11) of the needle.

Needle Threading on Machines 81K70, 81K72, 81K73 and 81K76 (For Two-Thread Stitch)

A machine fitted for making the three-thread chain stitch can be changed to make the two-thread chain stitch by substituting spreader 132631 for the right hand looper and applying tension thread guide 42082, bracket screw 228J, take-up 132883 and needle thread eyelet 42096.

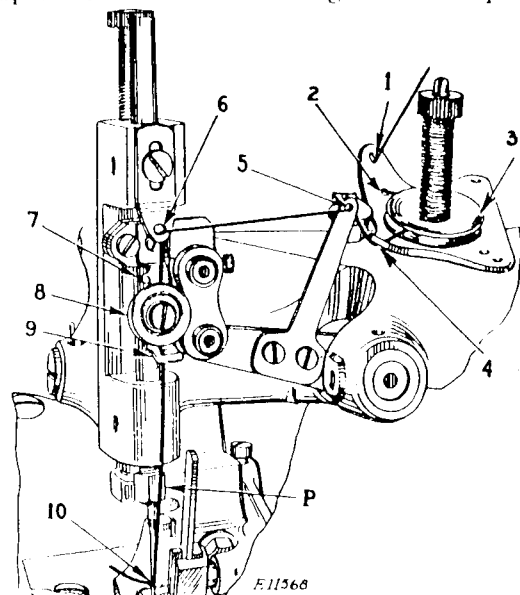


FIG. 7. THREADING THE NEEDLE

bracket, from back to front through the lower hole (2), around the front between the tension discs (3), through the hole (4), from back to front through the hole (5) in the take-up and from front to back through the hole (6) in the needle thread eyelet, down to the right of the pin (7), around the left side between the retainer discs (8), down into the guide (9), and from front to back through the eye of the needle (10).

To Thread the Left Hand Looper (SEE FIGS. 8, 9 AND 10)

Pass the thread from the unwinder down through the hole (1, Fig. 8) in the bracket at the rear of the machine, through the hole (2, Fig. 8) in the pull-off, through the hole (3, Fig. 8), down through the hole (4, Fig. 8) in the frame top cover, from back to front through the hole (5, Fig. 8) in the cloth plate extension. Swing cloth plate (N, Fig. 8) to the left. Then pass the thread up through the hole in the extension (6, Fig. 9), over between the tension discs (7, Fig. 9), from back to front under the nipper spring (8, Fig. 9) and through the tube (9, Fig. 9), down

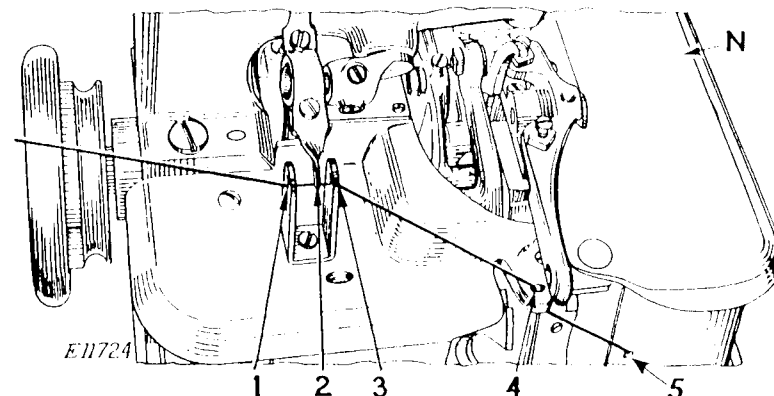


FIG. 8

and from back to front through the thread guide (10, Fig. 9), up and from back to front through the hole (11, Fig. 10) in the heel of the left hand looper, and from front to back through the eye (12, Fig. 10) of the left hand looper.

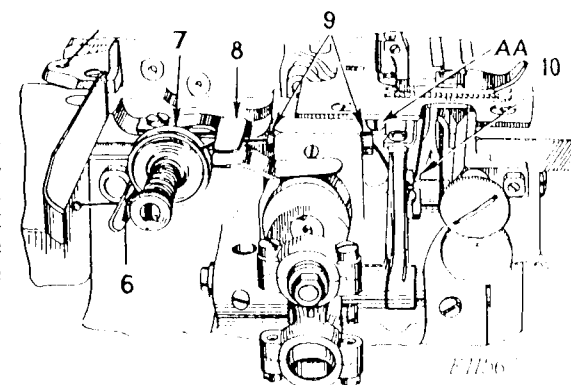


FIG. 9

Note: The pull-off and bracket (1, 2 and 3, Fig. 8) and the nipper (8, Fig. 9) are **only threaded when making the three-thread tight stitch.**

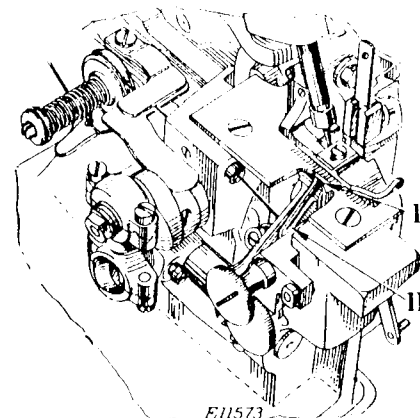


FIG. 10

To Thread the Right Hand Looper

Pass the thread from the unwinder, down through the hole (A, Fig. 11) in the tension bracket, from back to front through the

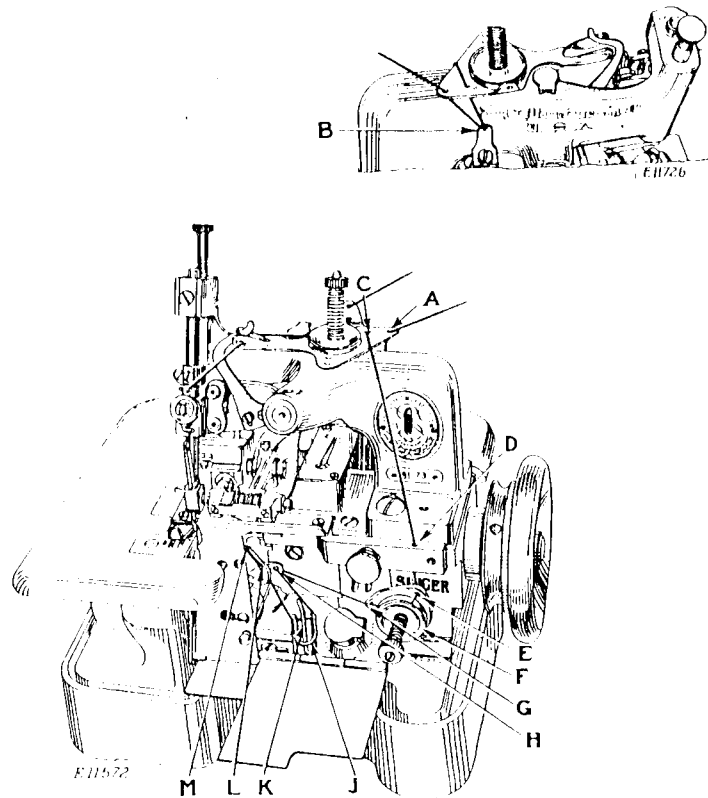


FIG. 11. THREADING THE RIGHT HAND LOOPER

pull-off (B, Fig. 11) at the back of the machine, up through the hole (C, Fig. 11), down through the hole (D), through the hole (E), under between the tension discs (F), through the hole (G), from back to front through the take-up (H), down under the loop (J) of the staple then, with the forefinger, slide the thread up and over the prong (K), so that the thread rests in back of the prong, up and from back to front through the hole (L) in the heel of the right hand looper, and from front to back through the eye (M) of the right hand looper.

Note: The pull-off (B, Fig. 11) is only threaded when making the three-thread tight stitch.

To Adjust the Gathering Feed on Machine 81K73

The amount of movement of the rear feed dog is determined by the position of the lever (A) at the back of the machine.

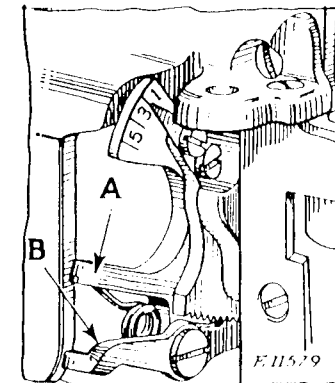


FIG. 12. ADJUSTING THE GATHERING FEED

For more gathering motion, press the latch (B) against the lever (A) and move the lever upward. For less gathering motion, move the lever downward.

The markings on the indicator plate aid in duplicating any particular setting.

To Adjust the Gathering Feed on Machines 81K70 and 81K76

When very elastic materials are to be sewn, the back feed dog should remain in its raised position only long enough to permit the work to come out flat.

To adjust the gathering feed, loosen the smaller screw above the regulating thumb screw at the back of the machine and turn the thumb screw outward for more gather and inward for less gather.

To Regulate the Pressure on the Material

The pressure on the material is regulated by means of the thumb screw (A, Fig. 13). To increase the pressure, turn this thumb screw downwardly. To decrease the pressure, turn the thumb screw upwardly.

To Regulate the Length of Stitch

The length of stitch is regulated by means of the adjusting screw (H, Fig. 13) in the feed eccentric. **This screw faces directly outward.**

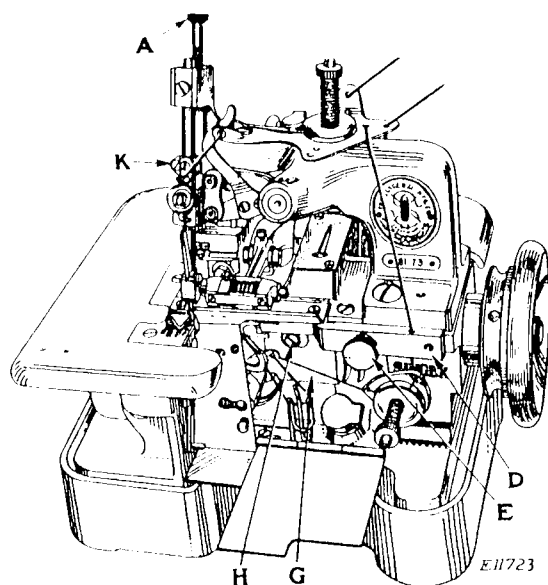


FIG. 13. ADJUSTMENTS ON THE MACHINE

To change the length of stitch, turn the balance wheel until the lock screw in the feed eccentric appears in the hole of the cover (G, Fig. 13). **This screw faces slightly downward.** Loosen the lock screw. Then turn the balance wheel until the adjusting screw (H) is visible through the hole in the cover (G). Turn the adjusting screw (H) over to the right for a long stitch. Turn this screw over to the left for a short stitch. Then turn the balance wheel over until the lock screw appears and securely tighten this screw.

INSTRUCTIONS FOR ADJUSTERS AND MACHINISTS

To Set the Needle Bar at the Correct Height

Remove the throat plate in order to obtain a clear view of the needle and looper.

Now turn the balance wheel over from you until the needle bar has risen $\frac{3}{32}$ inch from its lowest position. The point of the left hand looper, on its loop taking stroke, should then be at the center of the needle, and the eye of the needle should be about $\frac{1}{16}$ inch below the looper point. If the needle bar is not at the correct height, loosen the pinch screw (K, Fig. 13) and move the needle bar upward or downward as required, then securely tighten the pinch screw (K).

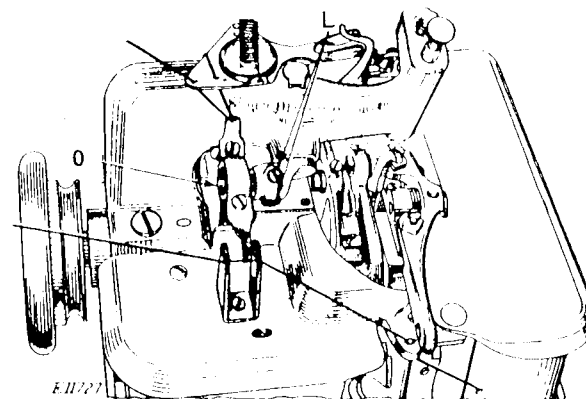


FIG. 14. TO CHANGE THE NEEDLE BAR STROKE

To Change the Stroke of the Needle Bar

A variation in the amount of needle bar stroke can be obtained by adjusting the ball stud (O, Fig. 14). To lengthen the stroke, loosen the two set screws (L, Fig. 14) in the needle bar crank and move the ball stud inwardly or toward the crank. To shorten the stroke of the needle bar, move the ball stud outwardly or away from the crank, then securely tighten the set screws (L).

To Set the Left Hand Looper

Turn the balance wheel over from you until the needle bar is in its lowest position. At this position, the looper point should be about $\frac{1}{32}$ inch to the left of the needle. Now turn the balance wheel until the needle bar has risen $\frac{3}{32}$ inch from its lowest position and the point of the looper should be at the center of the needle. (Some threads and materials require more needle loop, in which case the looper point can be set $\frac{1}{16}$ inch from the needle).

The left hand looper should be set in the looper carrier by means of the screw (A, Fig. 16), so that the point of the looper on its loop-taking stroke passes as close as possible to the needle without striking it. The point of the right hand looper or spreader should pass at the recess back of the left hand looper eye as close as possible without touching it.

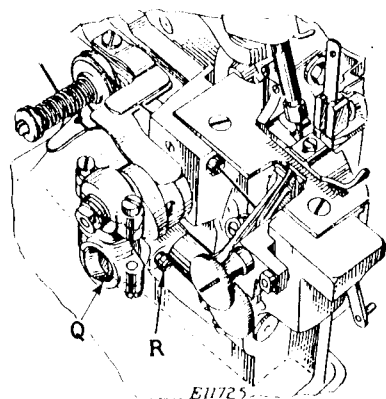


FIG. 15. TO REGULATE THE LOOPER MOTION

To Set the Front Feed Dog

The front feed dog should be set so that when it is raised to its highest point by the feed lifting eccentric, the full depth of the teeth will project above the throat plate.

This feed dog can be raised or lowered after loosening screw (AA, Fig. 9). After making the adjustment, securely tighten this screw.

A variation in the amount of the looper motion can be obtained by adjusting the ball stud (Q, Fig. 15). To increase this motion, loosen the set screw (R, Fig. 15) in the looper lever and move the ball stud (Q) inwardly or toward the looper lever. To decrease the motion, move the ball stud outwardly or away from the looper lever. After the desired motion has been obtained, securely tighten the set screw.

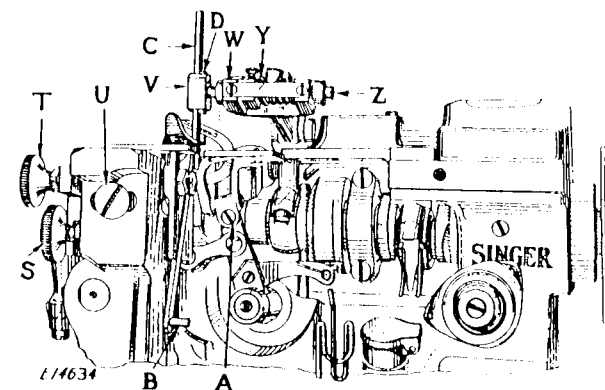


FIG. 16. ADJUSTMENTS ON THE MACHINE

To Adjust the Trimmer

The lower knife (B, Fig. 16) should always be fastened in position when removing or replacing the upper knife. The lower knife is adjustable to the right or left and its position governs the position of the upper one, also the width of bight on the goods.

To Remove the Lower Knife (B, Fig. 16), loosen the thumb screw (T, Fig. 16) and draw the knife downwardly.

To Replace the Lower Knife, have the presser foot and feed down, press the upper knife holder (V, Fig. 16) toward the balance wheel, and push the lower knife upwardly so as to touch the presser foot without lifting it, then tighten the thumb screw (T, Fig. 16).

To Adjust the Trimmer Sidewise, loosen the thumb screw (E, Fig. 13) and move the extension bracket (D, Fig. 13) to the right or away from the upper knife, loosen the screw (U, Fig. 16) and turn the thumb screw (S, Fig. 16) inwardly or outwardly until the trimmer is in the desired position, then securely tighten the screw (U). Move the extension bracket (D, Fig. 13) back toward the upper knife, leaving just enough clearance between the upper knife and the bracket so as to allow free movement of the upper knife, then tighten the thumb screw (E, Fig. 13).

To Remove the Upper Knife (C, Fig. 16), loosen the screw (Z, Fig. 16) at the end of the knife holder, press the knife holder (V, Fig. 16) toward the balance wheel and remove the knife.

When replacing the Upper Knife, have the knife holder in the lowest position and pressed toward the balance wheel, insert the knife and set it so that its cutting edge is just below the cutting edge of the lower knife, then tighten the clamping screw (Z, Fig. 16).

To Change the Width of Bight

The positions of the trimmer and chaining-off finger determine the width of bight on the goods.

For a wider bight, move the trimmer and the chaining-off finger on the presser foot to the right. For a narrower bight, move the trimmer and chaining-off finger to the left.

If the desired trimming margin cannot be secured by these adjustments, it may be obtained by removing the gib (D, Fig. 16) and replacing it at the **left** of the upper knife. The lower knife should then be adjusted accordingly.

To Adjust the Upper Knife Tension

The knives must always have spring contact with each other; the amount of pressure can be obtained by adjusting the knife holder guide.

When the knives are in contact, the space between the guide (Y, Fig. 16) and the knife lever (W, Fig. 16) should be about $\frac{1}{2}$ inch.

To Sharpen the Knives

Knife Grinder 41819, is recommended for sharpening the knives on Machines 81K70, 81K72 and 81K73. Use Knife Grinder 41335 for Machine 81K76. The use of these grinders insures the correct angle and shape of the cutting edge of both knives.

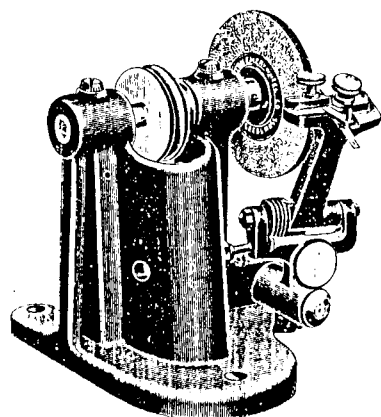


FIG. 17. KNIFE GRINDER 41335