

INSTRUCTIONS FOR USING THE SINGER PORTABLE ELECTRIC SEWING MACHINE

No. 99-13

(ATTACHMENTS 120360)

WITH KNEE CONTROL

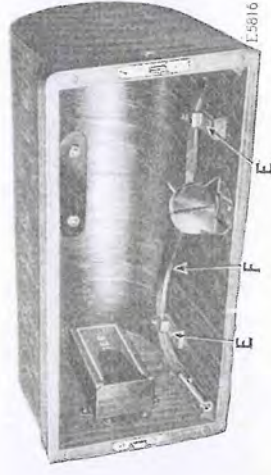


FIG. 1. KNEE LEVER IN POSITION IN COVER

After removing the cover, remove the knee lever (F, Fig. 1) from the two cleats (E, Fig. 1).

NEVER USE OIL ANYWHERE ON THE MOTOR —
Lubricate only with Singer Motor Lubricant and use it only in the two grease tubes provided for that purpose.

THE SINGER SEWING MACHINE
SINGER MANUFACTURING COMPANY
ELECTRIC SEWING MACHINE

See Singer Sewing Machine

Knocking (and now) your machine in
the cleats for years of use. We
we can't give you the best machine
in any class, we can't give you the
best in any class.

Use Singer Sewing Machine
The Singer Sewing Machine is the
most popular in the world. It is
the most reliable, the most
durable, the most efficient,
the most economical, the most
convenient, the most beautiful.

To Adjust the Knee Lever

Hold the lever in the horizontal position as shown in Fig. 2, and push the socket of the lever over

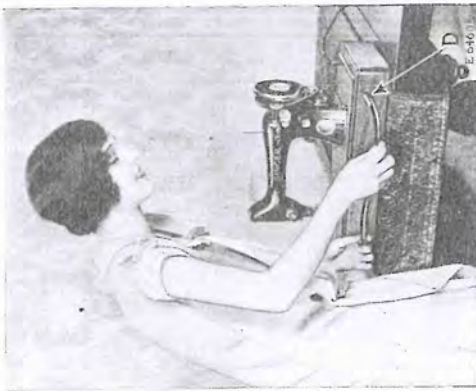


FIG. 2. PLACING KNEE LEVER IN POSITION

the stud (D, Fig. 2). Allow the lever to drop into the vertical position as shown in Fig. 3, page 3.

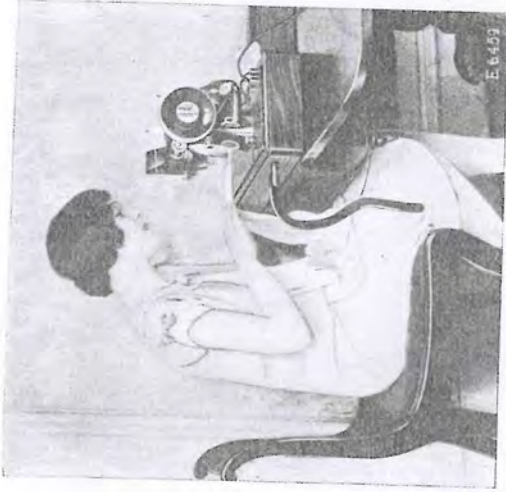


FIG. 3. KNEE LEVER IN POSITION READY FOR OPERATION

Motor can be Operated on Either Alternating Current or Direct Current

The electric motor, which is located at the back of the machine, can be operated on either alternating current or direct current, as desired. The standard windings of the motor are for 110 volts, and motors can be furnished for any voltage between 100 and 250.

Special motors for 32 volts direct current, and for 50 volts alternating current and direct current, have also been developed and are available.

Points to Determine before Connecting Motor to Electric Service Line

Obtain the following information from the Electric Light Company which supplies the electric current for the circuit to which the motor is to be connected:

1. What is the voltage? The voltage must be within the range stamped on the motor name plate.
 2. If the current is alternating, what is the number of cycles? The number of cycles must be within the range stamped on the motor name plate.
- The voltage of any circuit and, if alternating current, the number of cycles, can be verified by looking at the name plate on service watt meter installed by the local Electric Light Company.

To Make the Electrical Connection

Unwind the electric cord, screw the plug at the end into an electric light socket and turn on the switch.

To Turn Singerslight "On" or "Off"

Reach over the top of the machine and move the switch lever (N, Fig. 4) to the right or left as desired.



FIG. 4

To Remove and Replace the Bulb

To remove the bulb, hold the Singenlight socket tightly with one hand and with the other hand turn the shade halfway around until the pin (SS, Fig. 4) for the shade is in the slot of the shade, then gently slip the shade off and allow it to hang free as shown in Fig. 4.

Do not attempt to unscrew the bulb. It is of the bayonet and socket type and does not unscrew. Press the bulb into the socket and at the same time turn it until the bulb pin (TT, Fig. 4) is out of the notch in the socket, then withdraw the bulb and shade.

To insert a new bulb, pass the bulb through the collar of the shade with the slot of the shade upward. Hold the socket tightly with one hand and at the same time with the other hand press the bulb into the socket with the bulb pin (TT, Fig. 4) in the slot and turn it until this pin is in the notch. Then slip the shade over the socket, the pin (SS, Fig. 4) for the shade entering the slot of the shade. See that the pin (SS) is in the groove of the shade and turn the shade halfway around, or until it is at the top.

To Operate the Machine

To prevent injury to the presser foot (R, Fig. 5) and feed (P, Fig. 5), raise the presser foot (R) by means of the presser bar lifter (T, Fig. 5).

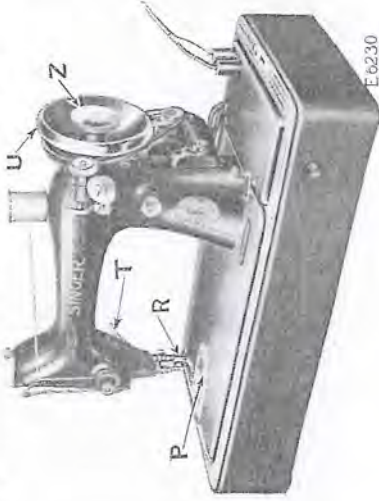


FIG. 5. FRONT VIEW OF THE MACHINE

Place a piece of cloth under the presser foot and then let the foot down upon it.

Turn on the electric current and lightly press the knee lever to the right. As you press harder against the knee lever, the speed of the machine is increased, the speed being controlled entirely by the degree to which the knee lever is pushed over. Operate the machine in this way without being threaded, until you have become accustomed to guiding the material and operating the knee lever.

To Ensure Perfect Action of the Machine

The balance wheel must always turn over toward you.

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

Do not run the machine when both bobbin case and needle are threaded unless there is material 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 slide over the bobbin case should be kept closed when the machine is in operation.

CAUTION

When through with your sewing, always turn off the electric switch at the lamp socket.

To Pack Up the Outfit

Remove the plug from the electric light socket and coil the electric cord around the machine. Raise the knee lever to a horizontal position, remove it and replace it into the cleats (E, Fig. 1, page 1) in the cover. Replace the cover and lock it.

To Take Out the Bobbin

Draw to the left the slide in the bed of the machine and press the forefinger of the right hand

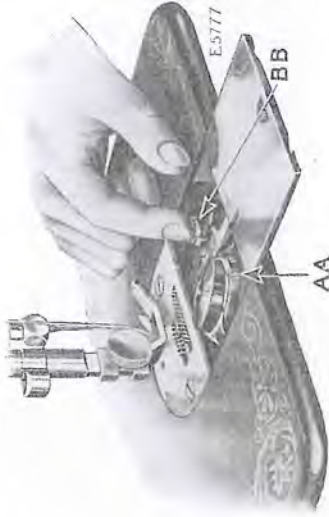
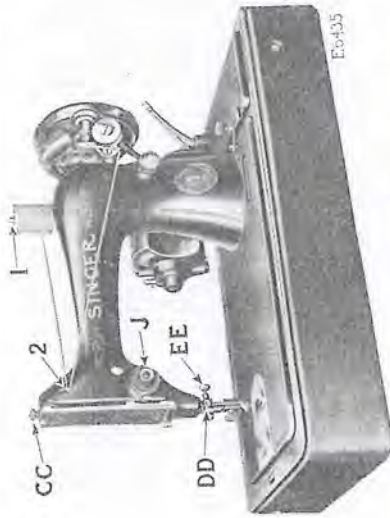


FIG. 6. REMOVING THE BOBBIN

upon the bobbin ejector (BB, Fig. 6); this will raise the bobbin so that it can be easily taken out.

To Wind the Bobbin

It is necessary to understand the stop motion (Z, Fig. 5, page 7) by which the balance wheel



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FIG. 7. MACHINE THREADED FOR WINDING THE BOBBIN

(U, Fig. 5) can be released when required, thus permitting the winding of bobbins without running the stitching mechanism. It also allows you to wind bobbins without removing partially sewn work and without unthreading the machine.

To release the balance wheel (U, Fig. 5), turn the stop motion screw (Z, Fig. 5) over toward you. It is necessary to hold the balance wheel while loosening the stop motion screw.

Place the bobbin on the bobbin winder spindle (FF, Fig. 8, page 11) and push it up closely against the shoulder, having the small pin in the spindle enter the hole in the side of the bobbin. Put the spool of thread on the spool pin (I, Fig. 7). Pass the end of the thread into the thread guide (2, Fig.

7) then up into the lower eyelet (3, Fig. 8) of the bobbin winder thread guide, into the notch (4, Fig.



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FIG. 8. WINDING THE BOBBIN

8) and pass the thread through the hole in the left side of the bobbin (5, Fig. 8), from the inside. Press the bobbin winder pulley (JJ, Fig. 8) down on the balance wheel hub, and the latch (HH, Fig. 8) will drop down and hold it. Then start the balance wheel in motion the same as for sewing.

The end of the thread must be held by the hand until a few coils are wound and should then be broken off. When sufficient thread has been wound upon the bobbin, the bobbin winder is automatically released from the balance wheel.

If the pressure of the rubber ring (JJ, Fig. 8) against the hub of the balance wheel is insufficient for winding the bobbin, loosen the adjusting screw (GG, Fig. 8) and press the bobbin winder lightly until the rubber ring is in contact with the hub of the balance wheel; then tighten the screw.

To Replace the Bobbin

Hold the bobbin between the thumb and forefinger of the left hand, the thread leading on top from the right toward the left, as shown in Fig. 9.

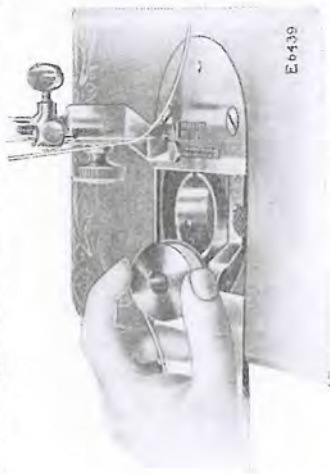


FIG. 9. REPLACING THE BOBBIN

Place the bobbin into the bobbin case and draw the thread into the slot (1, Fig. 10) in the bobbin case, as shown below.

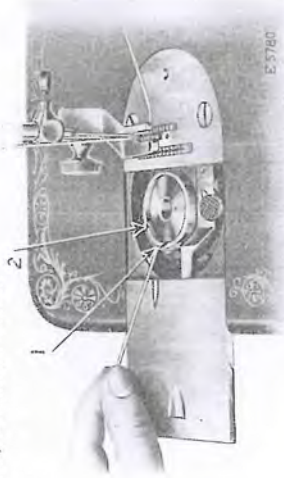


FIG. 10. THREADING THE BOBBIN CASE

Draw the thread backward between the bobbin case and the tension spring until it reaches the

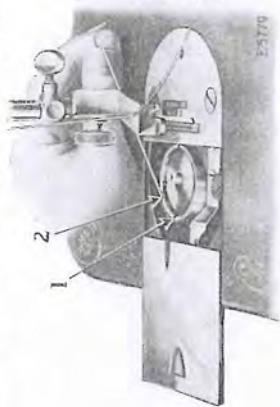


FIG. 11. BOBBIN CASE THREADED

notch (2, Fig. 11) then pull the thread toward the right, as shown in Fig. 11.

When closing the slide, see that the thread is in the slot (3, Fig. 12) in the right edge of the slide, as shown below.

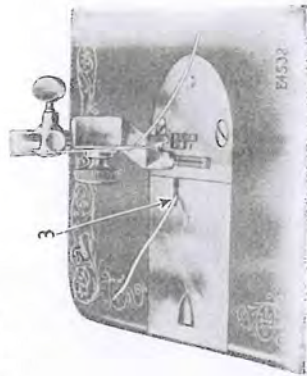


FIG. 12. UNDER THREADING COMPLETED

To Set the Needle

Turn the balance wheel over toward you until the needle bar moves up to its highest point, loosen the thumb screw (EE, Fig. 7, page 10) in the needle clamp (DD, Fig. 7), and put the needle up into the clamp as far as it will go, with its flat side toward the right, then tighten the thumb screw. To select the correct needle see page 48.

To Thread the Needle

SEE FIG. 13 ON THE FOLLOWING PAGE

Turn the balance wheel over toward you until the thread take-up lever (5) is raised to its highest point. Place the spool of thread on the spool pin at the top of the machine, lead the thread into the thread guide (1) at the left, down, under and from right to left between the tension discs (2), into the small wire spring (3), under the thread regulator (4) at the left (**not through the eye in the thread regulator**), up and from right to left through the hole in the end of the thread take-up lever (5), down into the eyelet (6), into the lower wire guide (7), then from left to right through the eye of the needle (8).

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

Instructions for threading the machine for darning and for embroidery are given on pages 46 and 47.

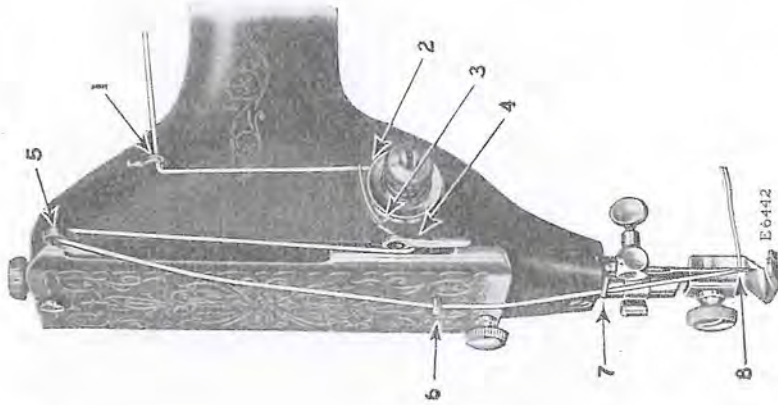


FIG. 13. THREADING THE NEEDLE

To Prepare for Sewing

Have the take-up lever at its highest point, then with the left hand hold the end of the needle thread, leaving it slack from the hand to the needle.

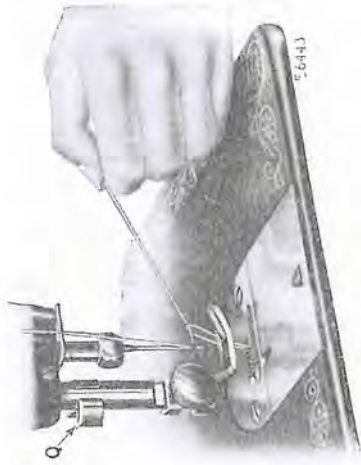


FIG. 14. DRAWING UP THE BOBBIN THREAD

Turn the balance wheel over toward you until the needle moves down and up again to its highest point, thus catching the bobbin thread; draw up the needle thread and the bobbin thread will come up with it through the hole in the throat plate (see Fig. 14). Lay both threads back under the presser foot.

To Commence Sewing

Place the material beneath the presser foot, lower the presser foot and commence to sew, pressing the knee lever to the right to start the machine.

To Remove the Work

Let the thread take-up lever rest at its highest point, raise the presser foot and draw the fabric back and to the left, pass the threads over the thread cutter (Q, Fig. 14, page 16) and pull down lightly to sever them. Leave the ends of the thread under the presser foot.

Tensions

For ordinary stitching, the needle and bobbin threads should be locked in the centre of the thickness of the material, thus:



FIG. 15. PERFECT STITCH

If the tension on the needle thread is too tight, or if that on the bobbin thread is too loose, the needle thread will lie straight along the upper surface of the material, thus:



FIG. 16. TIGHT NEEDLE THREAD TENSION

If the tension on the bobbin thread is too tight, or if that on the needle thread is too loose, the bobbin thread will lie straight along the under side of the material, thus:



FIG. 17. LOOSE NEEDLE THREAD TENSION

To Regulate the Tensions

The tension on the needle thread should only be regulated when the presser foot is down. Having



FIG. 18. NEEDLE THREAD TENSION

lowered the presser foot, turn the small thumb nut (J, shown in Fig. 18, above, and Fig. 7, page 10) at the front of the tension discs over to the right to increase the tension. To decrease the tension, turn this thumb nut over to the left.

The tension on the bobbin thread is regulated by the larger screw (AA, Fig. 6, page 9) which is nearest the back in the bobbin case tension spring. To increase the tension, turn this screw over toward you. To decrease the tension, turn this screw over from you.

When the tension on the bobbin thread has been once properly adjusted, it is seldom necessary to change it, as a correct stitch can usually be obtained by varying the tension on the needle thread.

To Turn a Corner

Stop the machine when the needle is commencing its upward stroke. Raise the presser foot and turn the work as desired, using the needle as a pivot (then lower the presser foot.

To Regulate the Length of Stitch

The length of stitch is regulated by the large thumb screw (KK, Fig. 8, page 11) at the front of the machine near the bobbin winder.

To lengthen the stitch, turn this thumb screw over to the right. To shorten the stitch, turn this thumb screw over to the left.

To Regulate the Pressure on the Material

For ordinary family sewing it is seldom necessary to change the pressure on the material. If sewing fine silk or flimsy material, lighten the pressure by turning the thumb screw (CC, Fig. 7, page 10) on the top of the machine over to the left. To increase the pressure, turn this thumb screw over to the right. The pressure should be only heavy enough to prevent the material from rising with the needle and to enable the feed to move the work along evenly; a heavier pressure will make the machine run hard.

To Sew Flannel or Bias Seams

Use a short stitch and as light a tension as possible on the needle thread so as to leave the thread loose enough in the seam to allow the goods to stretch if necessary.

A Stitch to Ravel Easily

can be made if desired, by having the tension on the needle thread so light that the bobbin thread will not draw into the goods but lie straight, as shown in Fig. 17, page 17.

To Oil the Machine

To ensure easy running, the machine requires oiling, and if used continuously it should be oiled

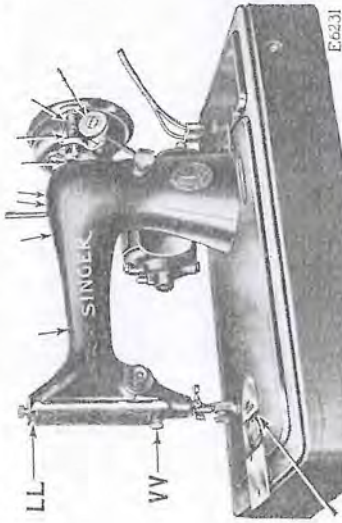


FIG. 19. FRONT VIEW, SHOWING OILING POINTS

each day. With moderate use an occasional oiling is sufficient. Oil should be applied at each of the places shown by arrows in Figs. 19 and 20. One drop of oil at each point is sufficient. Oil holes are provided in the machine for bearings which cannot be directly reached.

To oil the mechanism under the slide, draw the slide (see Fig. 19) to the left and after removing the lint and dust which may have accumulated (see instructions on pages 23 to 26, inclusive), put a few drops of oil on the small piece of felt at the right of the bobbin ejector. The slide should then be closed.

To oil the movable parts in the head of the machine, take out the thumb screw (VV, Fig. 19) near

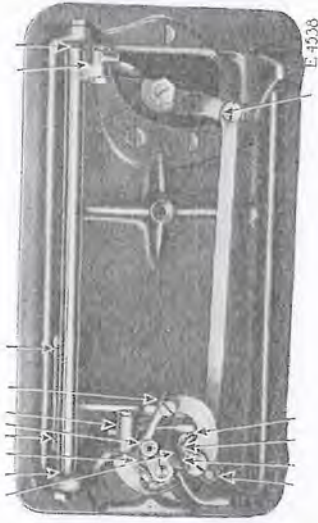


FIG. 20. OILING POINTS IN BASE OF MACHINE

the lower end of the face plate and loosen the screw (LL, Fig. 19) near the upper end of the face plate, then slip the face plate down; put one drop of oil into each of the oil holes and joints thus uncovered, then replace the face plate and fasten it as before.

To reach the parts underneath the bed of the machine, turn the machine back on its hinges and apply oil to the oil holes and bearings indicated by the arrows in Fig. 20.

To Lubricate the Motor

NEVER USE OIL, ANYWHERE ON THE MOTOR. When the machine is shipped from the

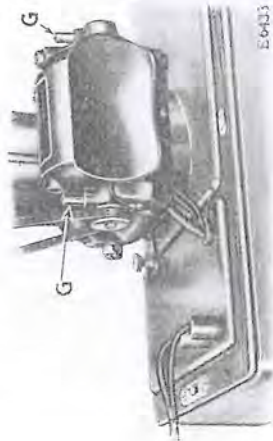


FIG. 21. MOTOR GREASE TUBES

factory, the two motor grease tubes (GG, Fig. 21) are filled with sufficient lubricant for approximately six months' use, under ordinary circumstances.

At least once every six months thereafter, these grease tubes should be refilled with the Singer Motor Lubricant, furnished with the machine. To do this, insert the tip of the tube of lubricant into the hole at the top of each of the grease tubes and force the lubricant through each hole until both grease tubes are filled.

To Clean the Stitch Forming Mechanism

After considerable use, the stitch forming mechanism may become clogged with lint and this may interfere with the perfect operation of the machine.

Occasionally remove the bobbin case from the machine, as instructed below and on the following page, and remove any lint, etc., which has accumulated in the machine.

To Remove the Bobbin Case

(OPERATOR BEING AT THE FRONT OF THE MACHINE)

Raise the needle to its highest point by turning the balance wheel over toward you. Draw the slide plate (MM, Fig. 22) slightly to the left, then lift its right hand end and draw it toward the needle until it is disengaged from the spring in the bed of the machine.



FIG. 22. SLIDE REMOVED

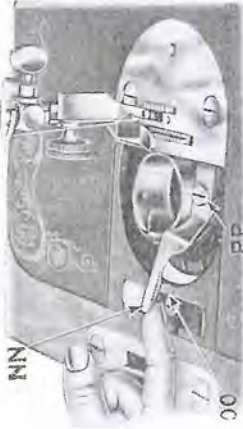


FIG. 23. RAISING THE LATCH

Insert the nail of the forefinger of the left hand under the latch (NN, Fig. 23), raise the latch just high enough to clear the edge at (OO, Fig. 23) and then move it toward you.

Under no circumstances must the screw (PP, Fig. 23) be loosened. The loosening of this screw will change the clearance for the thread between the bobbin case and bobbin case position bracket.



FIG. 24. REMOVING THE BOBBIN CASE

Hold the bobbin case between the forefinger and the thumb of the left hand as shown in Fig. 24. Tilt the bobbin case to the left and at the same time slightly turn the right or forked end toward you so that it is moved out of engagement with the sewing hook. Then tilt the bobbin case toward the right and remove it (See Fig. 24).

To Replace the Bobbin Case

(OPERATOR BEING AT THE FRONT OF THE MACHINE)

See that the needle is raised to its highest point and that the latch (NN, Fig. 25) is raised from the slot (OO, Fig. 25) and moved toward you.

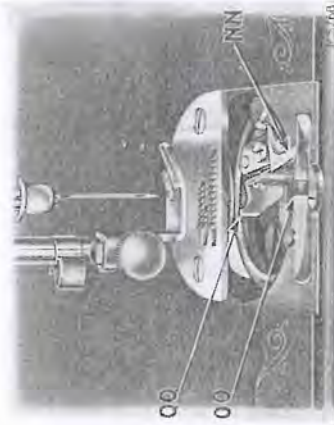


FIG. 25. SHOWING THE BOBBIN CASE POSITION BRACKET

Hold the bobbin case between the forefinger and thumb of the left hand, as shown in Fig. 24. Insert the forked end of the bobbin case under the throat plate so that the fork straddles the end of the bobbin case position bracket (QQ, Fig. 25). Then with a slight twisting motion of the bobbin case to the left and to the back, lightly press it downwardly until the edge of the sewing hook engages in the groove under the rim of the bobbin case.

Having set the bobbin case into the correct position, lock the latch (NN, Fig. 25) in the notch (OO, Fig. 25) to hold the bobbin case in place.

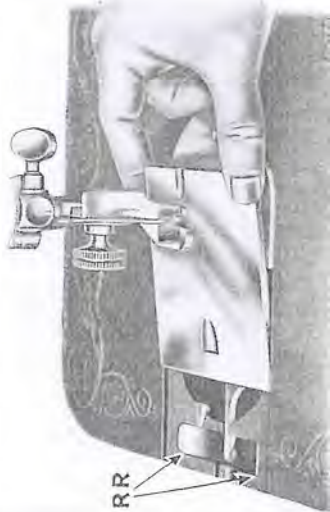


Fig. 26. REPLACING THE SLIDE

Then replace the slide from the right, as shown in Fig. 26, being careful to see that the two ends of the spring (RR, Fig. 26) enter the grooves on the underside of the slide.

HINTS

Machine Working Heavily. If the machine runs hard after standing idle for some time use a little kerosene in the oiling places, run the machine rapidly, then wipe clean and oil.

To Avoid Breaking Needles. See that the presser foot or attachments are securely fastened by the thumb screw. Do not sew heavy seams or very thick goods with too fine a needle. A large needle and thread to correspond should be used on heavy work (see page 48).

See that the needle is not bent and avoid pulling the material when stitching.

Breaking of Needle Thread. If the needle thread breaks it may be caused by:

Improper threading.

Tension being too tight.

Needle too fine for size of thread.

The thread being too coarse for size of needle.

The needle being bent, having a blunt point, or being set incorrectly.

Breaking of Bobbin Thread. If the bobbin thread breaks it may be caused by:

Improper threading of bobbin case.

Tension being too tight.

Skipping of Stitches. The needle may not be accurately set into the needle bar or the needle may be bent. The needle may be too small for thread being used.

INSTRUCTIONS

FOR USING

ATTACHMENTS

120360

WITH

SINGER SEWING MACHINE

No. 99-13

FOOT HEMMER—Hemming

Raise the needle to its highest point. Remove the presser foot, and attach the foot hemmer in its

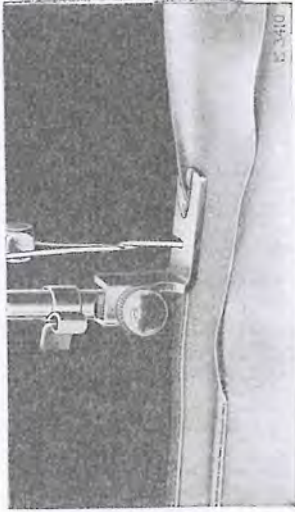


FIG. 27

place (see Fig. 27). Clip off the right hand corner of the cloth, so that it will take the roll easily, turn up the edge about a quarter of an inch, insert it in the mouth of the hemmer and draw or push it along until under the needle. Then let down the presser bar and after taking two or three stitches, draw gently on the ends of the threads to help the work along till the feed catches it. In order to produce a smooth even hem, the mouth of the hemmer must be kept just full.

Fig. 27 shows also what is known as a bag seam or fell, made by passing two pieces of fabric through the hemmer together and hemming them down

FOOT HEMMER—Hemming and Sewing on Lace

Start the hem as previously explained, and when it is well started, raise the needle to its highest point.

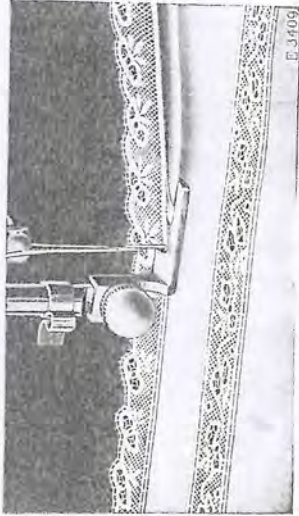


FIG. 28

Raise the hemmer to relieve its pressure on the hem, pass the end of the lace through the slot in the side of the hemmer, under the back of the hemmer and over the hem, as shown in Fig. 28.

Take care that the hem is not displaced in the hemmer and that the needle goes down through the lace and hem together. Then let down the presser bar and guide the lace over the front of the hemmer, keeping it well into the slot.

FOOT HEMMER—Felling

The two pieces of cloth to be felled should be laid one over the other, right sides together, the edge of the under piece being a little farther to the right than the upper piece. Stitch them together, using the hemmer as a presser foot, the front end of the

hemmer forming a guide for the edges of both pieces, the upper piece being guided by the inside and the



FIG. 29

under piece by the outside of the projecting front of the foot hemmer (see Fig. 29). Then open the work

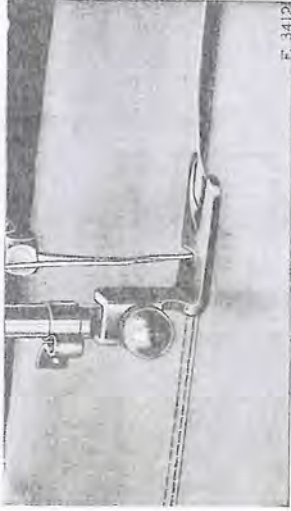


FIG. 30

out flat, wrong side up, the edges standing up straight, and taking the edges near the beginning of

the seam in the right hand, and the ends of the threads in the left hand, draw the edges into the hemmer which will turn them as in hemming. Guide the second row of stitching by following the first row with the inside of the projecting front of the foot hemmer (see Fig. 30, page 33).

ADJUSTABLE HEMMER—Hemming

Remove the presser foot and attach the adjustable hemmer in its place as shown in Fig. 31. This

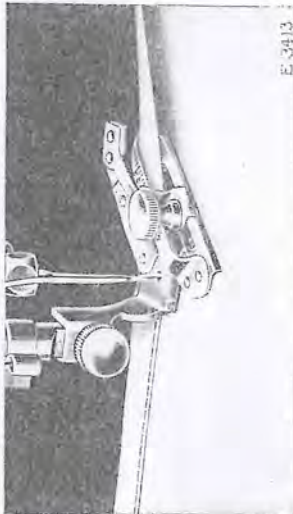


FIG. 31

hemmer will turn hems from $\frac{3}{8}$ inch to 1 inch wide. The adjustment is made by loosening the thumb screw on the hemmer and moving the slide to the right or left until the hem turned is of the desired width. Enter the edge of the cloth into the hemmer under the scale and draw it back and forth until the hem is formed, stopping with the end under the needle. Lower the presser bar and commence to sew, being careful to so guide cloth as to keep hemmer full. Felling can also be done with the adjustable hemmer by following instructions on page 32.

ADJUSTABLE HEMMER—Wide Hemming

To make a hem more than one inch wide, take out the thumb screw in the hemmer and remove the

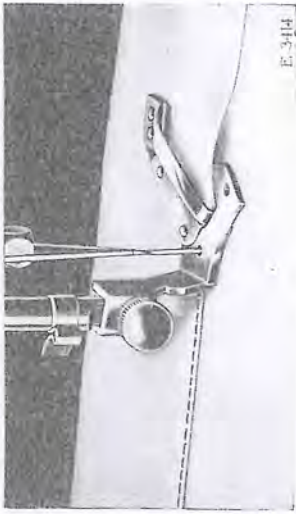


FIG. 32

slide and pointer; fold and crease down a hem of the desired width; pass the fold under the extension at the right of the hemmer and the edge into the folder as shown in Fig. 32 and proceed to stitch the hem.

BINDER—Binding

Remove the presser foot and attach the binder in its place. Pass the binding through the scroll of the binder and draw it back under the needle. Place the edge of the goods to be bound between the scrolls of the binder and draw it under the needle. Lower the presser bar and sew as usual. To make French folds proceed as directed for binding except that the fold is stitched on to the face of the material

instead of on the edge (see Fig. 33). After loosening the binder set screw and adjusting the binder, the

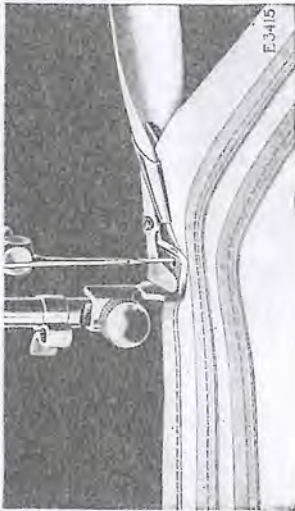


FIG. 33

line of stitching can be brought nearer the centre, this being more effective when making French folds.

TUCKER

Remove the presser foot and attach the tucker in its place. The width of the tuck is determined by the scale of figures nearest the needle, which shows in eighths and sixteenths of an inch the distance of the edge of the fold from the line of stitching.

The crease or mark for the second and following tucks is determined by the scale nearest the operator and this is set by the line in front of the needle hole in the presser foot. For blind tucks without spaces set both scales at the same figure; to make spaces between the tucks, move the front scale farther to the left until the desired space is obtained.

Having adjusted the scales for tuck and space as desired, fold the material and crease by hand; pass

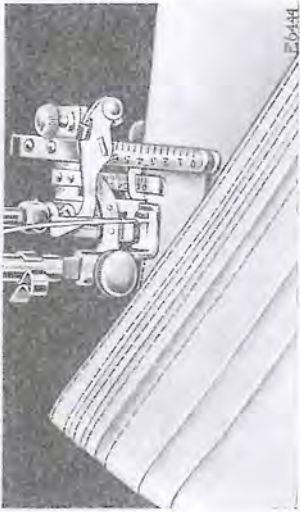


FIG. 34

the folded edge between the spring and spur near you, then between the two blades of the second scale, and back under the presser foot; draw to the right against the guide, lower the presser bar; see that the lever for the needle clamp to strike is in its backward position so as to form a crease for the next tuck, then proceed with the first tuck.

For the second tuck, fold carefully at the crease made by the spur and place the edge of the first tuck underneath and against the spur at the left. The spur will serve as a guide and will also make a distinct crease for the next tuck. Always place the last tuck against the spur to ensure perfect work.

When making the last tuck, the lever upon which the needle clamp strikes while tucking should be raised to its highest point; while the lever is in this position no crease for a succeeding tuck is made upon the goods.

Ruffler

Lines 1, 2, 3, 4 and 5 shown in Fig. 35 indicate where the material is to be placed for various operations, as follows:

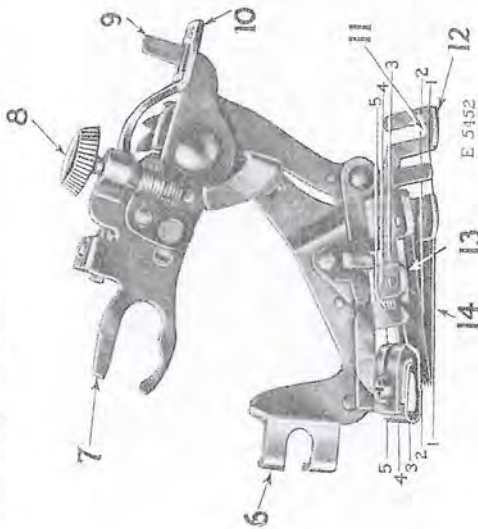


FIG. 35. THE RUFFLER AND ITS PARTS

Line 1—the correct position for the material to which the ruffled material is applied.

Line 2—material to be gathered.

Line 3—the facing for the ruffle.

Line 4—the strip of piping material.

Line 5—the edge to be piped.

Refer to Fig. 35 when inserting the material in the ruffler.

The names and uses of the principal parts of the ruffler are as follows:

(SEE NOS. IN FIG. 35)

6—Foot—the part by which the ruffler is attached to the presser bar.

7—Fork Arm—the section that must be placed astride the needle clamp.

8—Adjusting Screw—the screw that regulates the fullness of the gather.

9—Projection—the part that projects through the slots in the adjusting lever.

10—Adjusting Lever—the lever that sets the ruffler for plain gathering or plaiting.

11—Heading Guide—guide for the heading of the ruffle.

12—Separator Plate—the guide on the underside of the ruffler, containing several slots into which the edge of the material is slipped to keep the heading of the ruffle even.

13—Ruffing Blade—the upper blue steel blade with teeth at the end to push the material in plaits up to the needle.

14—Separator Blade—the lower blue steel blade without teeth, which prevents the teeth of the ruffing blade coming into contact with the teeth of the feed dog.

To Attach the Ruffler to the Machine

Raise the needle bar to its highest point and remove the presser foot. Attach the ruffler foot to the presser bar by means of the thumb screw, at the same time placing the fork-arm astride the needle clamp as shown in Fig. 35.

To Adjust the Ruffler for Plain Gathering

Raise the adjusting lever (10, Fig. 36) and move it to the left so that the projection (9, Fig. 36) will



FIG. 36

enter the slot marked "1" in the adjusting lever (10) when the lever is released. The ruffling blade will then move forward and back once at every stitch. Insert the material to be ruffled between the two blue blades, following the line 2 in Fig. 35. Draw the material slightly back of the needle, lower the presser bar and commence to sew.

To make a finer gather, shorten the stroke of the ruffling blade by turning the adjusting screw (8, Fig. 36) up, also shorten the stitch. To make a fuller gather, lengthen the stroke of the ruffling blade by turning the adjusting screw (8) down, also lengthen the stitch. By varying these adjustments many pleasing varieties of work can be accomplished.

To Make a Ruffle and Sew it to a Garment in One Operation

Insert the material to be ruffled between the two blue blades, as shown in Fig. 37, following the line

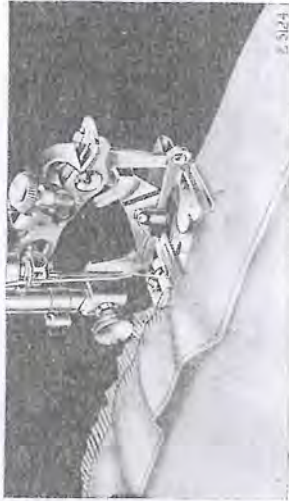


FIG. 37

2, in Fig. 35. Place the garment to which the ruffle is to be attached, under the separator blade, following the line 1, in Fig. 35. Proceed the same as for plain gathering.

The edge of the ruffled seam can be bound by using the binder as instructed on pages 35 and 36.

To Ruffle and Sew on a Facing in One Operation

Insert the material to be ruffled between the two blue blades, following the line 2, in Fig. 35. Place the garment to which the ruffle is to be attached, under the separator blade, following the line 1, in Fig. 35. Place the material for the facing over the upper blue blade, as shown in Fig. 38, following the line 3, in Fig. 35. The facing may be straight or bias material. If the facing is to be on the right side of the garment, place the garment and

the ruffle so that the wrong sides are together. If the facing is to be on the wrong side, place the right sides of the garment and the ruffle together.



FIG. 38

Piping a Ruffle

Insert the material to be ruffled between the two blue blades, following the line 2, in Fig. 35. This



FIG. 39

material must not be over $1\frac{1}{4}$ inches wide, as it is carried through the ruffler with the finished

edge of the ruffle to the right of the attachment as shown in Fig. 39.

The material for piping must measure about $\frac{1}{4}$ inch wide when folded in the centre and is usually cut on the bias. Place the piping material in the ruffler, following the line 4, in Fig. 35, with the folded edge of the piping to the right. The material to which the piping and ruffling are to be sewn should be folded on the edge and inserted in the ruffler, following the line 5, in Fig. 35.

To Adjust the Ruffler for Plaiting

Raise the adjusting lever (10, Fig. 40) and move it to the right so that the projection (9, Fig. 40)

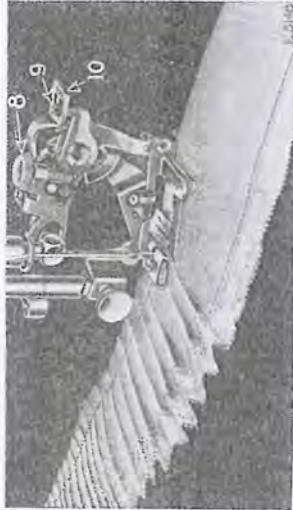


FIG. 40

will enter the slot marked "5" in the adjusting lever when the lever is released. The ruffling blade will then move forward and back once at every five stitches. Insert the material to be plaited between the two blue blades, following the line 2, in Fig. 35. The fullness of the plait is regulated by the adjusting screw (8, Fig. 40) and the length of stitch. To make a fuller plait, turn the adjusting screw (8) down, also lengthen the stitch. To make a finer plait, turn the adjusting screw (8) up, also shorten the stitch.

To Adjust the Ruffler for Group Plaiting and Gathering

The ruffler can be adjusted for group plaiting by lifting the adjusting lever (10, Fig. 41) and placing



FIG. 41

it on top of the projection (9, Fig. 41) at the point indicated by the star on the adjusting lever. This should be done at the points where you wish to make the space between the plaits. The ruffler will then stop and plain stitching will be made. When the desired space has been made, adjust the lever (10) so that the projection (9) enters the slot marked "5". By alternately making groups of plaits and plain spaces, as shown in Fig. 41, very attractive work can be produced.

To Oil the Ruffler

Occasionally apply a drop of oil to the working parts of the ruffler at each of the places indicated by arrows in Fig. 41. After oiling, operate the ruffler on a waste piece of material to prevent the oil from soiling the work. If the ruffler does not plait evenly, a drop of oil may remedy the trouble.

To Use the Cloth Guide

To ensure accurate guiding of the work when sewing close to the edge of the goods, the cloth

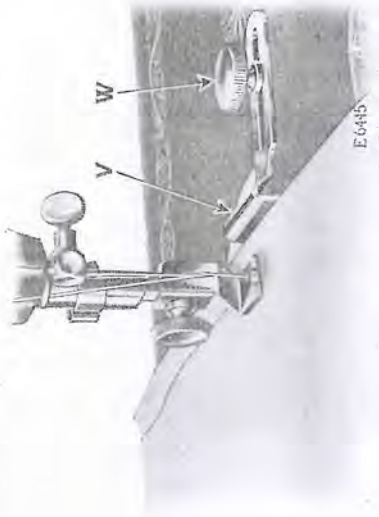


FIG. 42

guide (V, Fig. 42) should be used. Fasten the cloth guide to the bed of the machine by means of the clamping thumb screw (W, Fig. 42), inserting the thumb screw into either one of the two screw holes in the bed of the machine. The cloth guide can be adjusted to bring the edge of the goods as close to the line of stitching as desired.

EMBROIDERY AND DARNING

While embroidery and darning can be done on the machine when threaded for regular sewing, the use of feed cover plate Y, Fig. 43, page 47 is recommended, as movable contact with the feed in some cases might interfere with the handling of the work.

Do not change the adjustment of the feed dog in any way as it is essential that its position should remain as originally fixed.

When feed cover plate Y, Fig. 43 is used, it is necessary to pass the needle thread through the eye in the thread regulator (X, Fig. 43) at the left of the tension discs, and *not under the thread regulator*. With this exception the threading is the same as for regular sewing (see Fig. 13, page 15).

Remove the presser foot and let down the presser bar lifter to restore the tension on the needle thread, which is released and inoperative when the lifter is raised.

To attach the feed cover plate, draw to the left the slide that covers the bobbin case and insert the downwardly projecting hooks on the cover plate under the edge of the throat plate and push to the right. After bringing the hole at the right of the cover plate in line with the hole in the throat plate, press the cover into position, and close the slide (see Fig. 43).

Feed cover plates are not included in the regular sets of attachments; they are on sale at all Singer shops.

Instructions for embroidering are contained in the "Singer Instructions for Art Embroidery," sold by the Singer Sewing Machine Company at a reasonable price.

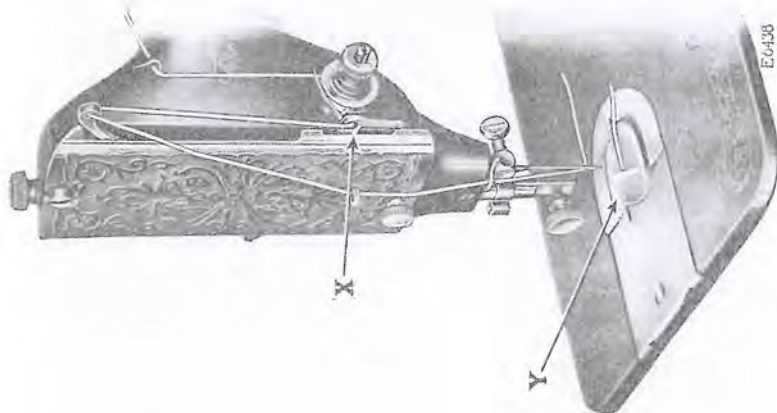


FIG. 43. MACHINE THREADED FOR EMBROIDERY AND DARNING

RELATIVE SIZES OF NEEDLES AND THREAD

(Class and Variety of Needles Used, 15 x 1)

SIZES OF NEEDLES	CLASSES OF WORK	SIZES OF COTTON, SILK OR LINEN THREAD
9	Very thin Muslins, Cambrics, Linens, etc.	100 to 150 Cotton OO & OOO Silk Twist
11	Very fine Calicoes, Linens, Shirtings, fine Silk Goods, etc.	80 to 100 Cotton O Silk Twist
14	Shirtings, Sheetings, Calicoes, Muslins, Silk and general domestic goods and all classes of general work.	60 to 80 Cotton A & B Silk Twist
16	All kinds of heavy Calicoes, light Woolen Goods, heavy Silk, Seaming, Stitching, etc.	40 to 60 Cotton C Silk Twist
18	Tickings, Woolen Goods, Trousers, Boys' Clothing, Corsets, Cloaks, Mantles, etc.	30 to 40 Cotton D Silk Twist
19	Heavy Woolens, Tickings, Bags, Heavy Coats, Trousers, etc. Heavy Clothing generally.	24 to 30 Cotton E Silk Twist 60 to 80 Linen
21	Bags, Coarse Cloths and Heavy Goods.	40 to 60 Linen or very Coarse Cotton

When sending orders for needles always specify the size required.