INSTRUCTIONS FOR USING

SINGER*

ELECTRIC SEWING MACHINE

(P. G. Built-on Motor)

15-91

REVERSIBLE FEED

LOCK STITCH, FOR FAMILY USE



MACHINE 15-91

*A TRADE MARK OF

THE SINGER MANUFACTURING COMPANY

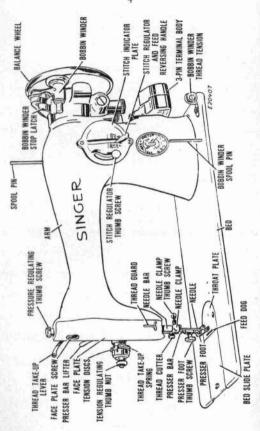


Fig. 2

Names of Principal Parts of Machines 15-91

ELECTRICAL INFORMATION

Motor

The SINGER electric motor, located at the back of the machine, is regularly furnished for operation on a direct current of 110-120 volts or on alternating current of 110-120 volts, 25 to 75 cycles. Special motors can be furnished for direct or alternating current for any voltage between 50 and 250, and for 32 volts direct current.

To Connect Machine to Electric Service Line

Before connecting the machine to the electric service line, be sure that the voltage and the number of cycles stamped on the motor nameplate are within the range marked on the electric meter installed by the electric power company.

Push the terminal plug at one end of the electric cord on the three-pin terminal block (see Fig. 2, page 4) at the right of the machine and connect the plug at the other end of the cord to an electric outlet.

CAUTION

When you have finished your sewing, always disconnect the plug from the electric outlet.

SINGERLIGHT

The SINGERLIGHT is turned "on" or "off" by the switch A, Fig. 3.

To Remove the Bulb

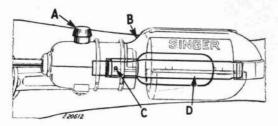


FIG. 3. REPLACING THE BULB

Grasp the SINGERLIGHT socket so that the thumb extends over the switch A.

Press the shade with the thumb at **B** to release the shade from the two catches and slide it **half-way out** of the shade holder **D**.

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 the bulb over from the machine as far as it will go, then withdraw the bulb.

To Replace the Bulb

Hold the socket with one hand and at the same time with the other hand press the new bulb into the socket and turn it over toward the machine until the bulb pin C, Fig. 3 enters the notch in the socket.

Return the shade to its normal position, as shown in Fig. 3.

TO OPERATE THE MACHINE

Raise the presser foot \mathbf{B} by means of the presser bar lifter \mathbf{C} to prevent injury to the foot \mathbf{B} and feed \mathbf{A} .

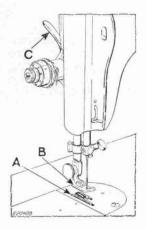


FIG. 4. FRONT VIEW OF THE MACHINE

Place a piece of cloth under the presser foot and

let the foot down upon it.

Turn on the electric current and, if the combination knee and foot controller is installed as a knee controller, press the controller to the right, or, if the controller is placed on the floor to be used as a foot controller, press down on the pedal of the controller. As the pressure on the controller is increased, the speed of the machine is increased, the speed being controlled entirely by the amount of pressure on the controller. Operate the machine in this way, without being threaded, until you have become accustomed to guiding the material and operating the controller.

NEEDLES AND THREADS

For perfect stitching, the **thread** should be selected according to the fabric to be stitched and the **needle** must be the correct size for the thread which must pass freely through the eye of the needle.

CHART SHOWING THE RELATIONSHIP OF TYPES OF FABRICS, THREAD AND NEEDLE SIZES AND MACHINE STITCHES TO THE INCH

TYPES OF FABRICS	THREAD SIZES	NEEDLE SIZES	PER INCH INSIDE TOP SEAMS STITCHING	
Filmy materials comparable to Net, Marquisette, Or- gandie, Ninon.		9		
			20	30
Sheer materials comparable to Lawn, Dimity, Voile, Batiste, Chiffon, Rayon, Sheer, Rayon Crepe.	80 to 100	11	16	20
Lightweight materials com- parable to Gingham, Cham- bray, Sheer Wool Crepe, Taffeta.	60 to 80 Cotton A and B Silk	14	12	18
Medium lightweight mater- ials comparable to Poplin, Pique, Percale, Cretonne, Chintz, Faille, Bengaline, Wool Flannel, Wool Crepe, Wool Jersey.	50 to 70 Cotton	14	12	16
Medium heavy materials comparable to Crash, Gab- ardine, Rep, Corduroy, Velveteen.	40 to 50	16	19	- 12
Heavy materials compar- able to Sailcloth, Denim, Ticking.			8	10
Very heavy materials comparable to overcoating.	40 to 60 Linen 20 to 24 Cotton E Silk		6	8
Plastic materials.	Mercerized Cotton	11	10	12

When ordering needles, always specify "Class and Variety 15x1" and state the size and quantity required.

TO SET THE NEEDLE

Select the correct needle according to the table on page 9. Be sure that the needle is not blunt or bent. Raise the needle bar to its highest position and loosen the thumb screw K in the needle clamp. Push the needle with its flat side to the left up into the needle clamp as far as it will go, then tighten the thumb screw.

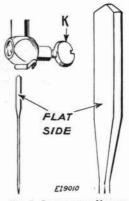


FIG. 5. SETTING THE NEEDLE

UPPER THREADING

(SEE FIG. 6 ON THE FOLLOWING PAGE)

Raise the take-up lever 5 to its highest point.

Place the spool of thread on spool pin at top of machine

Pass the thread through the thread guide 1

Down, under and from back to front between the tension discs 2 (the thread guard L guiding the thread between the discs)

Hold the spool tightly and pull the thread against the take-up spring 4 until it enters the retain-

ing fork 3

Pass the thread from back to front through the hole 5 in the take-up lever

Down through the guide 6 on the face plate

Into the guide 7 on the needle clamp

From right to left through the eye 8 of the needle. Draw about two inches of thread through the eye of the needle with which to commence sewing.

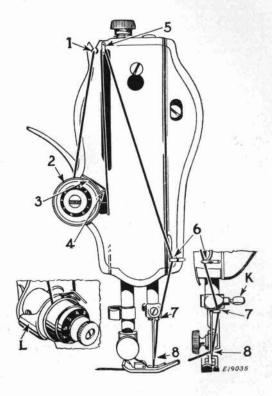


Fig. 6. Upper Threading

TO REMOVE THE BOBBIN

Raise the take-up lever 5, Fig. 6 to its highest point. Withdraw the bed slide plate. Reach down with the left hand and open the bobbin case latch M, Fig. 7 and lift out the bobbin case. Release the latch and remove the bobbin from the bobbin case.

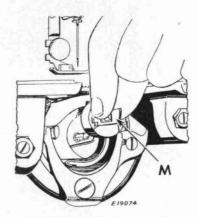


FIG. 7. REMOVING THE BOBBIN CASE

TO WIND THE BOBBIN

(SEE FIG. 8 ON THE FOLLOWING PAGE)

Hold the balance wheel **D** with the left hand and, with the right hand, loosen the stop motion screw **E** to release the balance wheel from the stitching mechanism.

Place the bobbin on the bobbin winder spindle as far as it will go, having the small pin enter the hole in the side of the bobbin. Place the spool of thread on the spool pin 1
Pass the thread to the right between the tension
discs 2

Up and to the left through the hole in the left side

of the bobbin 3, from the inside.

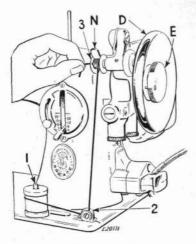


Fig. 8. Winding the Bobbin

The end of the thread must be held by the hand until a few coils are wound and then should be broken off.

Press down on the bobbin and the bobbin winder latch will drop down and hold the bobbin winder pulley against the hub of the balance wheel.

Then operate the machine the same as for sewing. When sufficient thread has been wound upon the bobbin, the bobbin winder is automatically released from the balance wheel.

Then tighten the stop motion screw E.

If the pressure of the bobbin winder pulley against the hub of the balance wheel is insufficient for winding the bobbin, press down the bobbin winder until the latch N, Fig. 9 drops down and holds it, then loosen the adjusting screw O, Fig. 9. With the forefinger, push back the upper end of the slotted plate P as far as it will go, as shown in Fig. 9, and at the same time press the bobbin winder pulley against the hub of the balance wheel, then tighten the adjusting screw O.

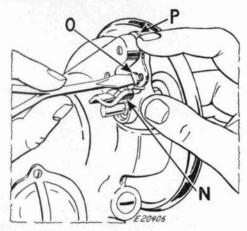


FIG. 9. ADJUSTMENT OF BOBBIN WINDER

If the thread does not wind evenly on the bobbin, loosen the screw which holds the tension bracket 2, Fig. 8 in position on the bed of the machine and slide the tension bracket to the right or left, as may be required, then tighten the screw.

Bobbins can also be wound while the machine is sewing.

TO THREAD THE BOBBIN CASE

Hold the bobbin so that the thread will unwind in the direction shown in Fig. 10.

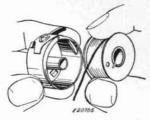


Fig. 10

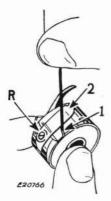


Fig. 11

Pull the thread into the slot 1, under the tension spring 2 and into the slot 3 at the end of the spring. Hold the bobbin case as shown in Fig. 10, and place the bobbin into it.

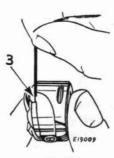


Fig. 12

TO REPLACE THE BOBBIN CASE

Hold the bobbin case by the latch and place it on the stud T of the shuttle body with the position finger S opposite the notch at the top of the shuttle race.

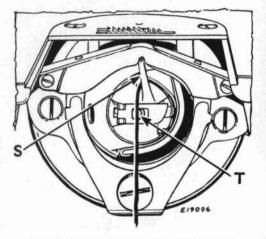


Fig. 13. Bobbin Case Threaded and Replaced

Release the latch and press the bobbin case back until the latch enters the groove in the stud. Allow about three inches of thread to hang free from the bobbin case and close the bed slide plate.

TO PREPARE FOR SEWING

Hold the end of the needle thread with the left hand and turn the balance wheel over toward you until the needle goes down and up again and the thread take-up lever 5, Fig. 16 is at its highest point. Pull up the needle thread and bobbin thread will come with it, as shown in Fig. 14.

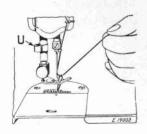


Fig. 14
Drawing Up the Bobbin
Thread

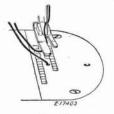


Fig. 15
Threads in Position to
Commence Sewing

Lay both threads back under the presser foot diagonally across the feed, as shown in Fig. 15, to the right or left, depending upon which side of the needle the material is to be located, so that when the presser foot is lowered, the threads will be firmly held between the feed and the presser foot.

TO COMMENCE SEWING

Be sure to have the thread take-up lever 5 at its highest point.

Place the material beneath the presser foot **B**, lower the foot by means of the presser bar lifter **C** and commence to sew, turning the balance wheel over toward you.

Never pull the material along when stitching. This is liable to bend the needle. Guide the material only.

Never operate the machine without cloth under presser foot.

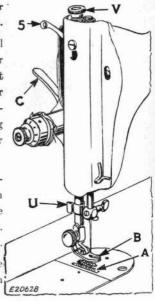


Fig. 16

The slide over the bobbin case should be kept closed when the machine is in operation.

The balance wheel must always turn over toward the operator.

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.

BASTING

Adjust the stitch regulator X, Fig. 17 to make the longest stitch and loosen the needle thread tension A, Fig. 21, so that the stitches may be easily removed.

Machine basting is firmer, more even and much quicker than hand basting.

TO SEW FLANNEL OR BIAS SEAMS

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

TO REMOVE THE WORK

Stop the machine with the thread take-up lever 5, Fig. 16 at its highest position. Raise the presser foot, draw the fabric back and to the left, and sever the threads on the thread cutter U, Fig. 16. Place the ends of the threads under the presser foot, as shown in Fig. 15.

TO REGULATE THE LENGTH OF STITCH

The machine is adjustable to make from 6 to 30 stitches per inch, as indicated by the numerals on the stitch indicator plate W.

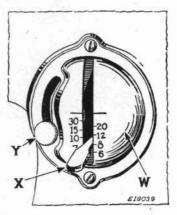


Fig. 17. Showing Lever for Reversing Direction of Feed and Regulating Length of Stitch

The number of stitches to the inch that the machine is set to make is indicated by the number which is in line with the upper side of the stitch

regulating lever X.

To change the length of stitch, loosen the thumb screw Y and move it to the bottom of the slot. Then move the stitch regulating lever X until its upper side is in line with the number of the desired length of stitch. Now move the thumb screw Y until the stitch regulating plate (inside) touches the lever X, then tighten the thumb screw Y.

The machine will now make the indicated number of stitches to the inch in either a forward or reverse direction, depending on whether the lever X is at

its lowest or highest position.

TO REGULATE THE DIRECTION OF FEED

To feed the material from you, push down the stitch regulating lever X, Fig. 17 as far as it will go.

To feed the material **toward you**, raise the stitch regulating lever **X** as high as it will go.

The direction of feeding can be reversed at any point of a seam without removing the work from the machine.

The reverse feed makes it easy to do "back tacking" and to fasten the ends of seams.

TO REGULATE PRESSURE ON PRESSER FOOT

For ordinary sewing, the pressure of the presser foot on the material seldom requires changing. Heavy materials require more pressure than light weight materials. 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. To increase the pressure, turn the thumb screw V, Fig. 16 clockwise or downward. To lighten the pressure, turn the thumb screw so that it screws upward.

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

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

THREAD TENSIONS

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



Fig. 18. Perfect Stitching

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. 19. 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. 20. Loose Needle Thread l'ension

TO REGULATE THE NEEDLE THREAD TENSION

The tension on the needle thread can be regulated **only** when the presser foot is down

The numerals "0 to 9" on the dial C, Fig. 21 indicate the different degrees of tension that can be obtained. The numbers do not denote the size of thread or ounces of tension.

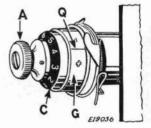


Fig. 21. Needle Thread Tension

When the tension has been correctly set for average sewing, note the number at the indicator line **Q**, so that the tension may be reset should it be altered for special work or change in size of thread.

To increase the tension, turn the thumb screw A gradually to the right (clockwise) until the required tension is obtained. Each higher number denotes increased tension.

To decrease the tension, turn the thumb screw A gradually to the left (counter-clockwise) until the required tension is obtained. Each lower number denotes less tension.

TO REGULATE THE BOBBIN THREAD TENSION

The tension on the bobbin thread is regulated by the screw R, Fig. 11 in the tension spring on the outside of the bobbin case. To increase the tension, turn the screw R over to the right. To decrease the tension, turn this screw over to the left.

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 DISASSEMBLE THE NEEDLE THREAD TENSION

NOTE: The needle thread tension, Figs. 21 to 23 inclusive, is correctly adjusted at the factory to produce the complete range of tensions with one revolution of the thumb nut A. There should be no necessity for removing or taking this tension apart. However, if for any reason, it becomes necessary to remove the tension, proceed as follows:

Turn the thumb nut A, Fig. 22 away from you (toward the left) until it stops at "0" on the num-

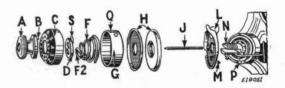


Fig. 22. Needle Thread Tension Disassembled

bered dial C. Press in the dial to disengage the pin B in the thumb nut and remove the thumb nut, dial, stop washer D, tension spring F, indicator G, the two tension discs H, thread guard plate L, and the tension releasing pin J, as shown in Fig. 22. To remove the pin J from the stud N, take off the face plate and tilt it so that the pin will drop out.

TO REASSEMBLE THE NEEDLE THREAD TENSION

Replace the face plate, insert the tension releasing pin in the stud, place the thread guard plate on the

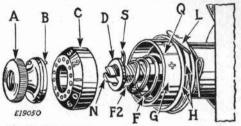


Fig. 23. Reassembling and Replacing the Tension

stud, being sure that the lug M, Fig. 22 engages the short recess P to prevent the plate from turning on the stud. Next, replace the two tension discs H on the stud, having the flat thread-bearing sides of the discs together. Replace the indicator G with the large open side facing end of stud so that the plus and minus signs will be readily seen from a sewing position as shown in Fig. 23. Insert the tension spring F in the indicator so that the first half turn F2 of this spring will straddle the lower half of the tension stud. Guide the stop washer D onto the stud so that the extension S will be above the tension stud as shown in Fig. 23.

NOTE: If the spring and stop washer are in correct position, the extension S will clear the first half-coil of the spring, as shown in Fig. 24.

Next place the numbered dial on the stud so that the numeral 2 is oppo-



Fig. 24

site the stop washer extension S, then push the dial to compress the spring so that the thumb nut can be turned onto the stud, carefully guiding the pin in the thumb nut into one of the holes in the numbered dial. Lower the presser bar and turn the thumb nut A to the left until it stops at "0." Thread the tension and pull the thread through the tension discs to test the amount of tension at the "O" position. At this point there should be a barely perceptible pull on the thread to indicate that there is a minimum tension which gradually increases with the turn of the thumb nut to the right, providing a full range of tensions from light to heavy within one revolution of the thumb nut. If the pull is too strong for a minimum tension, press in the numbered dial to disengage the pin in the thumb nut from the dial and reset the pin in one of the holes to the left of the previous setting. This resetting of the pin will produce less tension at zero. On the other hand, should there be insufficient tension at zero, press in the dial and reset the pin in one of the holes to the right of the previous setting. Repeat this process until the desired minimum tension is obtained.

If Correct Stitching is Not Obtained:

If the bobbin thread tension has been disturbed, or a correct stitch cannot be obtained without a very heavy or very light needle thread tension, then the following procedure is recommended:

Using No. 50 thread in the needle and on the bobbin, adjust the needle thread tension as instructed above. Then turn the tension thumb nut to "3" and, with two thicknesses of thin material in the machine, adjust the bobbin thread tension, as instructed on page 23, until the stitch is correctly locked in the material as shown in Fig. 18.

A wide range of materials and threads can now be accommodated without further adjustment of the bobbin thread tension.

TO OIL THE MACHINE

If the machine is used continuously, it should be oiled daily. If moderately used, an occasional oiling is sufficient.

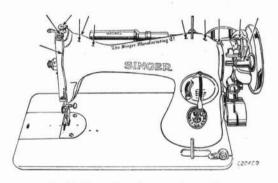


Fig. 25. Front View, Showing Oiling Points

Apply one drop of oil at each of the places indicated by the unlettered arrows in Figs. 25, 27 and 28.

Draw to the left the bed slide plate, and after removing the lint and dust which may have accumulated (see instructions on pages 31 and 32), apply oil to the shuttle race A, Fig. 30. The slide should then be closed. Loosen the thumb screw in the round cover plate at the back of the machine, turn the plate upward and fasten by tightening the screw. Turn the balance wheel over toward you until the connecting

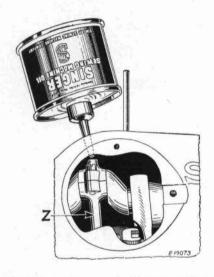


Fig. 26. Oiling Points at the Back of the Machine

rod **Z**, **Fig. 26** is at its highest position. Then apply a few drops of oil through the hole in the top of the machine to the wick which is retained in the cap of the connecting rod, as shown in **Fig. 26**. Also oil the other moving parts inside, turn the cover plate down and fasten it as before.

Loosen the screw A2, Fig. 27 near the upper end of the face plate, raise the plate and slip it off over the head of the screw. Apply one drop of oil at each of the places indicated by the unlettered arrows in Fig. 27, 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. Apply one drop of oil at each of the places indicated by the unlettered arrows in Fig. 28.

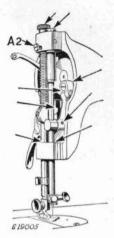


Fig. 27. End View Showing Oiling Points

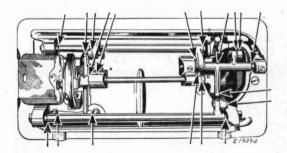


Fig. 28. Oiling Points in Base of Machine

TO LUBRICATE THE MOTOR

NEVER USE OIL OR ORDINARY GREASE FOR LUBRICATING THE MOTOR as they are harmful for this purpose. USE ONLY SINGER MOTOR LUBRICANT, a tube of which is supplied with the machine. It is the only lubricant which will positively lubricate the motor.

When the machine is shipped from the factory, the two motor grease cups A, Fig. 29 are filled with sufficient SINGER MOTOR LUBRICANT for approximately one year's use. Refill these grease cups at least once a year thereafter.

Turn the machine back on its hinges and remove the two thumb screws from the two grease cups A and clean out the interior of the cups. Then insert the tip of the motor lubricant tube into the grease cups as shown in Fig. 29, and while holding the tube firmly against the -bottom of the grease cups, squeeze enough grease into each cup to fill them. Replace and tighten the thumb screws.

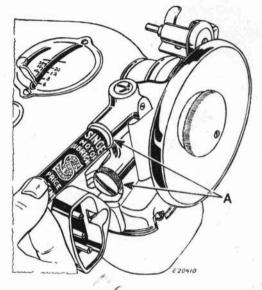


Fig. 29. Lubricating the Motor

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 Clean the Stitch Forming Mechanism

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

Occasionally remove the shuttle from the machine, as instructed below and remove any lint, etc., which has accumulated in the machine.

TO REMOVE THE SHUTTLE

Draw the bed slide plate to the left. Turn the balance wheel over toward you until the needle is

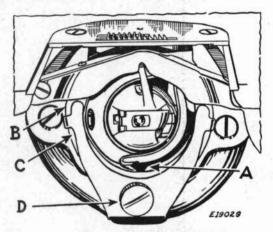


Fig. 30. Showing Position of Shuttle for Removal from Machine

at its highest point and the point of the shuttle is at the position shown in Fig. 30.

Remove the bobbin case and bobbin. Take out the thumb screw D, Fig. 30, also the spring C, Fig. 30 and the shuttle race back B, Figs. 30 and 31. The shuttle A, Figs. 30 and 31 may now be easily removed and the parts cleaned.

TO REPLACE THE SHUTTLE

See that the needle is at its highest point. Replace the shuttle with its point A in the position shown

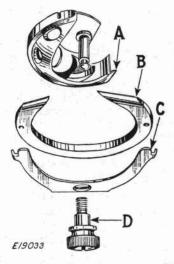


Fig. 31. Shuttle and Parts Removed from Machine

in Fig. 31, then replace the other parts in the order illustrated in Fig. 31. Replace and tighten the thumb screw D. Replace the bobbin and bobbin case and close the bed slide plate.

SEWING SUGGESTIONS

Breaking of needles might be caused by:

- Improper size of needle for thread and material. See page 9.
- (2) Needle bent.
- (3) Pulling of material when stitching.
- (4) Needle striking improperly fastened presser foot or attachments.
- (5) Crossing too thick seams with too small a needle.

Breaking of needle thread might be caused by:

- (1) A knot in the thread.
- (2) Improper threading. See page 11.
- (3) Upper tension too tight. See page 22.
- (4) Needle set incorrectly. See page 10.
- (5) Needle blunt or bent.
- (6) Thread too coarse for needle. See page 9.
- (7) Roughened hole in throat plate.
- (8) Improper arrangement of threads to commence sewing. See page 17.

Breaking of bobbin thread might be caused by:

- Improper threading of the bobbin case. See page 15.
- (2) Bobbin thread tension too tight. See page 23.
- (3) Bobbin wound unevenly.

Skipping of stitches might be caused by:

- (1) Improper setting of needles. See page 10.
- (2) Needle blunt or bent.
- (3) Needle too small for thread. See page 9.
- (4) Needle rubbing presser foot.

Free instruction for using the machine is gladly given at any SINGER Shop.

DARNING OR EMBROIDERING

Turn the machine back on its hinges. Unscrew as far as possible the thumb screw B, Fig. 32 which is located in the lower end of the slot of the feed

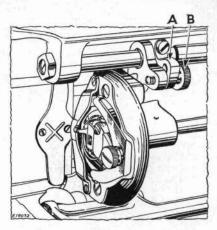


Fig. 32. Adjustment for Darning or Embroidering

lifting crank A, Fig. 32. The feed is thus rendered inoperative and will not interfere with the free movement of the work. Bring the machine forward into place.

Move the stitch regulating lever X, Fig. 17 to its neutral position in the center of the slot at the front of the machine.

Remove the presser foot and let down the presser bar lifter C, Fig. 16 to restore the tension on the needle thread which is released when the lifter is raised.

Draw up the bobbin thread as instructed on page 17.

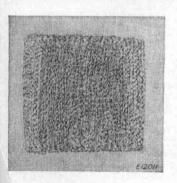
When darning flat work, it is advisable to use embroidery hoops to hold the work.

Place the work in the machine, having the un-worn part near the hole under the needle. Commence the darning by making a line of stitches across the hole a little longer than the width of the hole. Continue making parallel lines



Fig. 33. Darning in Process

of stitches across the hole, moving the work backward and forward and at the same time gradually moving



the work sidewise until the hole is covered with lines of stitches running across the hole. Then commence as before and move the work lengthwise of the hole until the stitches across the hole are completely covered and the darn is finished.

Fig. 34. DARNING FINISHED

When you have finished the darning or embroidery, raise the presser bar lifter and replace the presser foot. Turn the machine back on its hinges and move the thumb screw B, Fig. 32 down to the bottom of the slot of the feed lifting crank A, Fig. 32 and make sure that the thumb screw is firmly tightened. Bring the machine forward into place, return the stitch regulating lever X, Fig. 17 to its original position and the machine is ready for regular stitching.

Stockings and socks, underwear, etc., can be more conveniently darned on the machine with the SINGER Darner which can be purchased at any SINGER Shop or from any SINGER Salesman.

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

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

2