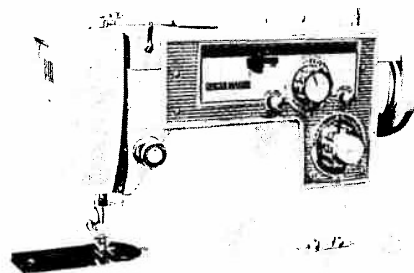


DRESSMAKER
ZIG-ZAG *SEWING MACHINE*



**MODEL
S-2400**

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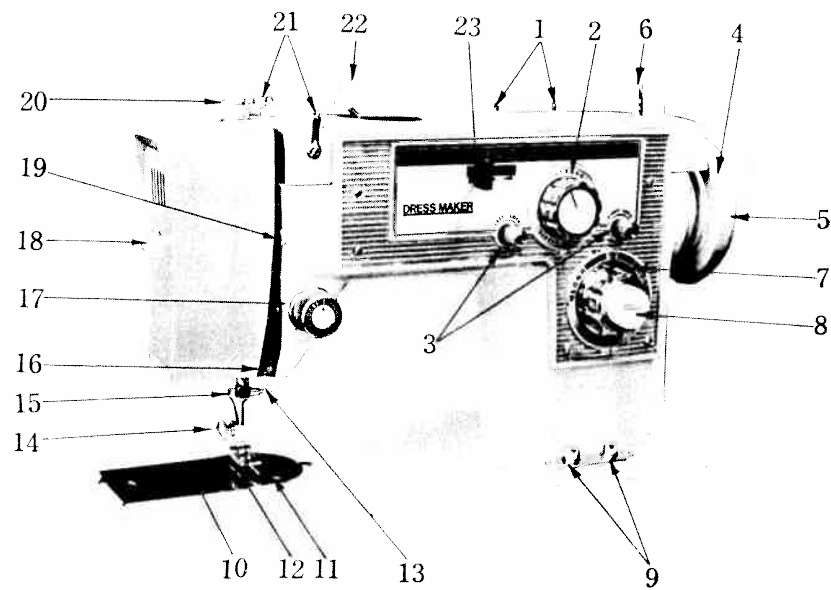


Fig. 1

FEATURES AND PARTS

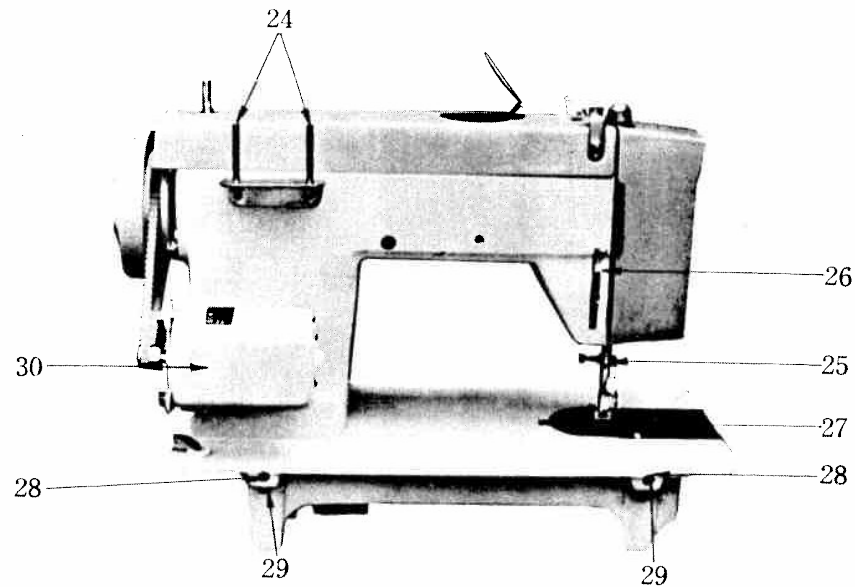
(Front View)

1. Spool pins (Back of machine)
2. Zigzag width control dial
3. Zigzag width locking knobs
4. Balance wheel
5. Stop motion knob
6. Bobbin winder
7. Stitch length dial
8. Reverse push button
9. Drop feed push button
10. Slide plate
11. Needle plate seam guide
12. Presser foot

13. Needle clamp and screw
14. Presser foot thumb screw
15. Needle bar thread guide
16. Lower face plate thread guide
17. Thread tension dial
18. Light switch
19. Take-up lever
20. Pressure release darning
21. Arm thread guides
22. Disc cover
23. Needle position lever

FEATURES AND PARTS

(Rear View)



- | | | |
|------------------------|---|-----------------------|
| 24. Spool pins | 27. Feed dogs | 29. Hinge clamp screw |
| 25. Thread cutter | 28. Hinge hole (for cabinet or portable case) | 30. Motor |
| 26. Presser bar lifter | | |

TO REPLACE THE NEEDLE

Raise the needle bar A to its highest point turning the balance wheel 4 Fig. 1, toward you by hand. Loosen the needle clamp screw B. Remove the old needle and slide the new one up, FLAT SIDE FACING TO RIGHT, as far as it will go. Tighten the needle clamp securely with a screw driver.

AFTER CHANGING NEEDLE MAKE one complete revolution of balance wheel by hand to be sure the needle is in the correct position. BE SURE TO USE 15×1 SYSTEM NEEDLES.

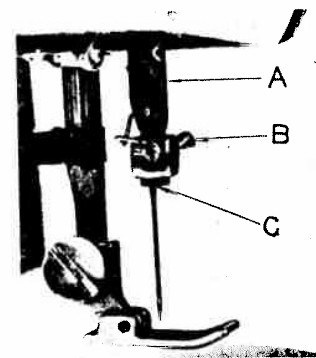
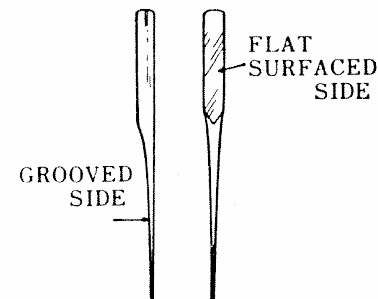


Fig. 3

NEEDLE AND THREAD

Never use a bent needle, nor one with a blunt point, since this causes imperfect stitches and may cause the needle to break.

Use a needle sufficiently large to permit the thread to pass freely through the eye. In general sewing, use the same size thread in the bobbin as is used on top



NEEDLE AND THREAD SIZE

The following table will show you the size of needles generally used with various sizes of thread. The size or grade refers to the "eye" of the needle. USE 15×1 SYSTEM NEEDLES ONLY.

Fabric	Needle No.	Cotton Thread	Mercerized Thread	Silk or Nylon
Extremely heavy tarpaulin, sacking, canvas, duck, etc.	20	10 to 30	Heavy Duty	
Heavy upholstery fabric, thickening, denim, leatherette	18	30 to 40	Heavy Duty	
Medium heavy drapery fabric, velveteen, suiting, felt, terry, etc.	16	40 to 60	Heavy Duty	
Medium broadcloth, percale, gingham, linen, chintz, taffeta, sheer wool, shantung, etc.	14	60 to 80	50	A
Sheer voile, lawn, dimity, crepe, handkerchief linen, plastic film, etc.	11	80 to 100	50	A
Very sheer chiffon, batiste, lace, organdy, nylon, net, marquisette, etc.	9	100 to 150	50	A

WINDING THE BOBBIN

Holding the balance wheel firmly with the left hand, loosen the balance wheel by turning the stop motion knob toward you (Fig. 4). This will permit the balance wheel to turn freely while the needle bar remains motionless. Place a spool of thread on the spool pin(A). Hang the thread from the right side of the bobbin winder thread guide(B). Wind the end of the thread around an empty bobbin seven or eight times and put the threaded bobbin on the spindle (C) of the bobbin winder. Press down the bobbin with hand, making sure that the PIN on the spindle fits into the SLOT in the bobbin. (Fig. 5)

Push the bobbin toward the bobbin winder stopper and turn the balance wheel toward you by hand and proceed to operate the rheostat control, as in sewing. When the bobbin is full, it will release automatically and stop turning.

Break off the thread and detach the bobbin from the spindle. Hold balance wheel firmly with left hand and with right hand turn the stop motion knob away from you until the machine is tight and the needle bar moves with the turning of balance wheel.



Fig. 4

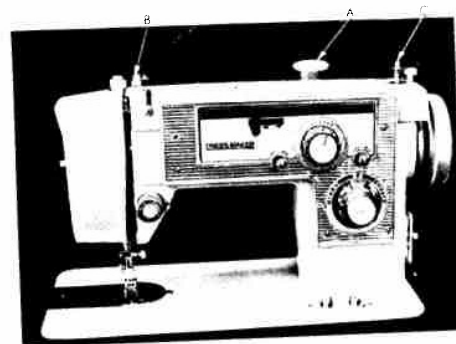


Fig. 5

THREADING THE BOBBIN CASE

Step 1 (illustrated in Fig. 6).

Hold bobbin case between thumb and forefinger of left hand, so that the slot in the edge of the bobbin case is on top.

Place the bobbin between thumb and forefinger of right hand so that the thread on top leads from left to right.

Step. 2.

Insert bobbin into bobbin case, pull the thread into the slot of the bobbin case as shown in Fig. 7, and draw it under the tension spring and into the fork-shaped opening of the spring as shown in Fig. 8.



Fig. 6

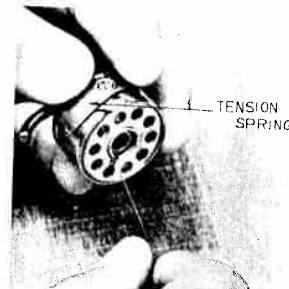


Fig. 7

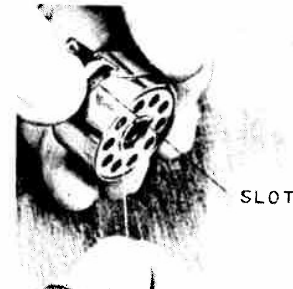


Fig. 8

PLACING BOBBIN CASE IN SHUTTLE

IMPORTANT : In the following operations the needle must always be above the surface of the machine. Raise the needle by turning balance wheel TOWARD YOU by hand.

REMOVING THE BOBBIN CASE (See Fig. 9)

Open the slide plate (10, Fig. 1) by sliding it out. With left thumb and forefinger, open the hinged latch (D) at the front of the bobbin case and hold securely as you draw bobbin case from the stud of the shuttle body (C). When held in the above manner the bobbin will not fall out of the bobbin case.

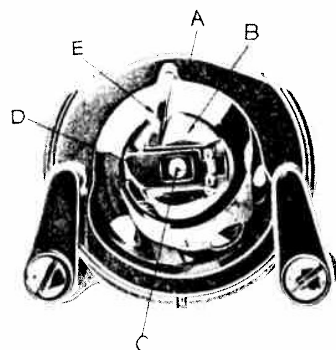


Fig. 9

INSERTING THE BOBBIN CASE

After winding a fresh bobbin and threading the bobbin case (See Fig. 6, 7, & 8) hold the bobbin case latch (D) with left thumb and forefinger. Keeping the protruding finger (E) topside toward the shuttle race

notch (A), press the bobbin case around the stud of the shuttle body (C) until the finger enters in the shuttle race notch. This operation is easy -- NEVER FORCE IT. Three or four inches of thread hanging free from the bobbin case will be brought up through the needle plate hole as shown in Fig. 11.

THREADING THE MACHINE (See Fig. 10 & 11)

- 1) Turn balance wheel toward you to raise take-up lever. (F, Fig. 10) to its highest point.
- 2) Place spool of thread on upper spool pin
- 3) Lead thread through arm thread guide B1 to B2, Fig. 10.
- 4) Down and around thread tension dial C from right to left.
- 5) Into the check spring D over thread tension dial.
- 6) Then down under thread under bar E.
- 7) Up into take-up lever F from right to left.
- 8) Down into lower face plate thread guide G on face plate.
- 9) Through the needle bar thread guide H.
- 10) And into needle from left to right. Pull three or four inches of thread through needle.

Hold the end of upper thread loosely and turn balance wheel toward you until the needle goes all the way down and comes back up. A loop (Fig. 11) will be formed over the lower thread which then can be pulled out straight. Place both thread ends under the slot of the presser foot and draw toward the back of the machine, leaving both threads three or four inches long.

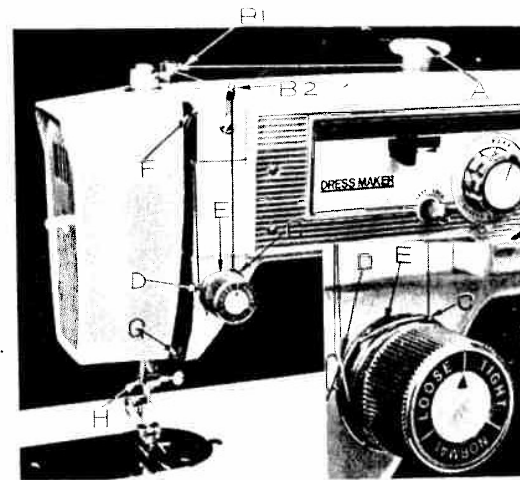


Fig 10

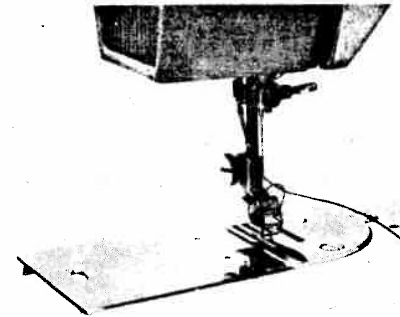


Fig 11

STRAIGHT STITCHING

Be sure to set the stitch width at 0. Adjust stoppers (3) to hold zigzag width control dial (2) in 0 position. (Fig. 12)

SETTING THE STITCH LENGTH

The length of the stitch is regulated by knob 7 shown in Fig. 12. Near 0 is the shortest and 5 is the longest. Turn the knob to the left to lengthen and to the right to shorten the stitch.

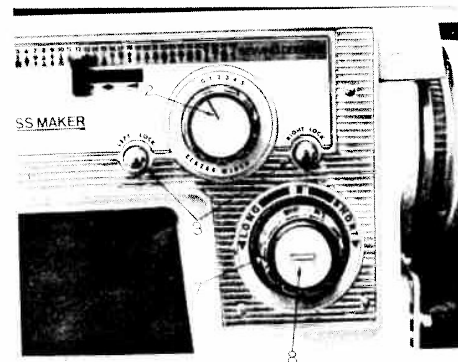


Fig. 12

STITCH LENGTH CHART (Approximate)

Figure on indicator	0	1	2	3	4	5
Number of stitches per inch	No feeding	55	25	13	8	6

SEWING IN REVERSE

When you wish to sew in reverse to tie the thread at the beginning or the end of a seam, press in the reverse push button 8 Fig. 12 as far as it will go. The machine will sew backward as long as the button is held in. Only 4 or 5 stitches are needed to tie a seam securely.

ADJUSTING THE TENSIONS

Always adjust the upper tension with the presser foot down, as the tension is mechanically released when it is raised. To increase the tension on the upper thread, turn dial (Fig. 13) to the right, or clockwise. To decrease, turn to the left. There are three ranges for adjusting thread tension i.e. "LOOSE", "NORMAL", and "TIGHT". Each word represents the adjusting range, and loose or tight of thread tension accordingly. Before adjusting lower tension be sure that the machine is threaded properly.

When it is necessary to change the bobbin tension, turn small screw (Fig. 14) on side of the bobbin case clockwise to tighten, counter-clockwise to loosen.

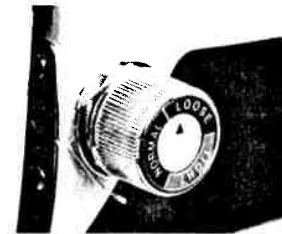


Fig. 13

When the upper and lower tensions are properly balanced, a perfect stitch will be formed with both threads interlocking in fabric. (Fig. 15)

ALWAYS BE SURE THAT YOUR STITCHES LOOK LIKE FIG. 15.

When the upper tension is too tight, the lower thread is pulled up over the upper thread which is lying flat on the fabric. (Fig. 16)

When the upper tension is too loose the upper thread forms loops over the lower thread lying flat on the fabric. (Fig. 17)

ADJUSTING PRESSURE AND FEEDING OF FABRIC

The PUSHBUTTON DROP FEED is located on the bed of the machine (Fig. 18).

It regulates the height of the feed dog for sewing normal material, very thin material and for darning and embroidering.

1. For sewing very thin material, push down the left knob (A) until the color line reaches the surface of plate.
2. For darning, embroidering and monogramming, push down the left knob (A) completely and the feed mechanism will be lowered under the level of the stitch plate, so that the material can be moved freely. (See page 20)
3. For normal sewing, push down the right knob (B) completely.

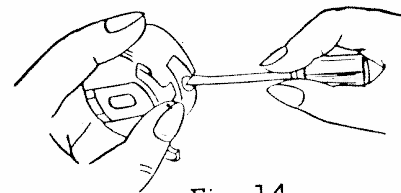


Fig. 14



Fig. 15

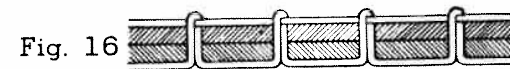


Fig. 16



Fig. 17

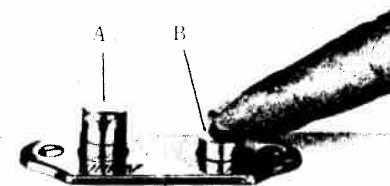


Fig. 18

SEWING THIN OR LIGHT WEIGHT FABRIC

When lighter pressure is required to sew satisfactorily on thin silk or filmy material, the pressure cap should be about half-way down. Release all the way by pressing the snap lock, A, Fig. 19, and then press cap B down again to half-way spot. Lower the feed slightly by pushing in the drop feed knob A, Fig. 18.

DARNING AND MONOGRAMMING.

In order to move the fabric freely in any direction for darning, mending and certain kinds of free-hand embroidery, release the pressure cap B completely by pressing down on the snap lock, A, Fig. 19. Push the drop feed button A, Fig. 18 which drops the feed well below the needle plate. To replace feed to normal, push in the drop feed button B, Fig. 18.

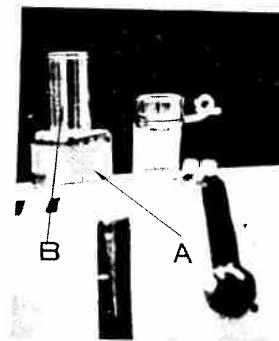


Fig. 19

PREPARING TO SEW

Have take-up lever at its highest point before starting to sew. Do not try to help the feeding by pulling the material as this may deflect the needle and cause it to break.

NEVER RUN MACHINE WITHOUT MATERIAL UNDER PRESSER FOOT.

Place material and threads in position under the presser foot and lower the presser foot. You are now ready to begin sewing. By having the needle at its highest point, it is not necessary to touch the balance wheel to start the machine. You merely press the control. The speed of the machine is regulated by increasing or decreasing the amount of pressure exerted on the control.

REMOVING THE WORK

Be sure to stop the machine when the thread take-up lever and needle bar are located at the highest position. Now raise the presser foot and draw the fabric back and to the left, Fig. 20 and 21 and pass the thread over the thread cutter.

Pull down slightly, holding thread in both hands, so as not to bend the needle.

Leave the ends of thread under the presser foot.

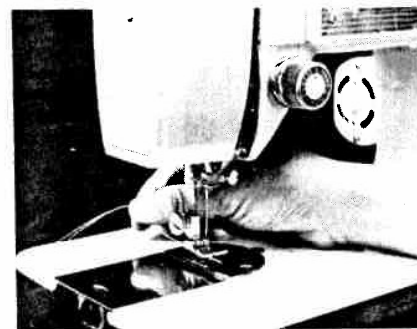


Fig. 20

CREATIVE EMBROIDERY

BE SURE ZIGZAG PRESSER FOOT AND ZIGZAG NEEDLE PLATE ARE IN PLACE.

The satin stitch, Fig. 22, which is really just a very short zigzag stitch and the basis for



Fig. 22

most embroidery, is obtained by setting the stitch length as near 0 as possible without stopping the feeding action.

The width may be set anywhere from just past 0 to the widest, 4.

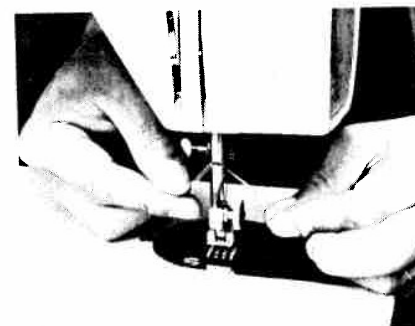


Fig. 21

ADJUSTING THE STITCH WIDTH

To stitch continuously at one width of zigzag stitching set lock 3 (Fig. 12-B) to hold zigzag width control dial at width chosen. Should you wish to move freely between any two widths, (in doing free hand embroidery), move zigzag width control dial to the right and set left hand locking stopper at desired width.

Then move dial to the left and set the right hand locking stopper at desired width. To lock stoppers, turn them to clockwise direction, and to loosen them turn counter clockwise with thumb and forefinger.

EMBROIDERY PATTERNS

With the machine set for a short stitch length, different designs can be made by swinging the stitch width or zigzag width control dial back and forth between 0 and 5 or any other combination of widths.

Try setting locking stoppers at 1 and 5, 2 and 4, etc. Set a rhythm for yourself and then proceed. After a while you will become quite skillful, varying your designs by the speed of the machine, stitch length and width and the manipulation of the zigzag width control dial.

THREE NEEDLE POSITION

- A. The machine has three basic needle position-LEFT, MIDDLE and RIGHT-controlled by a needle position lever to the left of the zigzag stitch regulator as illustrated.

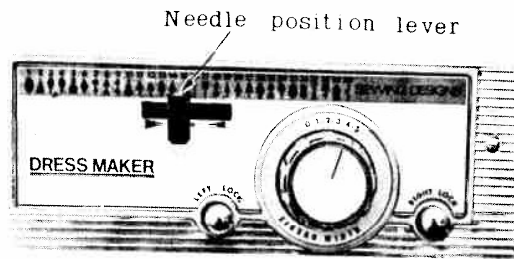


Fig. 22,

B. When the needle position lever is in its LEFT (▶) groove, the stitch directions are as per illustration

The width, of course, varies, and is regulated by the zigzag stitch regulator as explained on the preceding page. The length also varies, as an accordion, depending on the setting of the stitch regulator.

C. In the MIDDLE (◆) position, the stitch directions in illustration. In this setting, a great many different stitches can be obtained depending on the other two settings. They will, however, have one thing in common .. direction .. as the diagram indicates. Then using the straight sewing needle plate the position lever must be in the MIDDLE (◆)

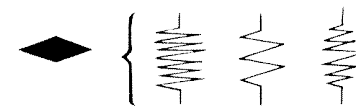
D. In the RIGHT (◀) position, the needle starts from the right, or just opposite from the left.

In the following pages, we explain how you may do straight stitching, zigzag stitching, embroidery, appliquing, button sewing, buttonhole making, hemming, blind stitching and many other types of work, using only the adjustments of the zigzag system.

3 VARIATIONS OF LEFT ZZ STITCH



3 VARIATIONS OF MIDDLE ZZ STITCH



3 VARIATIONS OF RIGHT ZZ STITCH

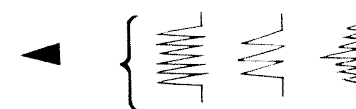


Fig. 23

SAMPLES OF CREATIVE EMBROIDERY



1. Set needle position lever in center notch.
2. Set stitch length regulating dial for "satin" stitch.
3. Start sewing and quickly move zigzag stitch dial from "1" to "4" and back to "1" again. Repeat operation as long as desired. The length of design depends on the speed at which the zigzag stitch regulator is operated.



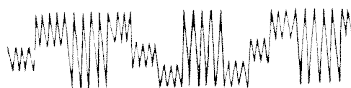
1. Set needle position lever in center notch.
2. Set stitch length regulating dial for "satin" stitch.
3. Start sewing, and move zigzag stitch regulator slowly from "0" to "4" then quickly turn regulator back to zero and repeat operation. The length of design is controlled by the speed at which the zigzag stitch dial is operated.



1. Set zigzag stitch dial between zero and "2".
2. Set stitch length regulating dial for "satin" stitch.
3. Start sewing, and shift needle position lever from left notch to right notch, and back and forth continuously and smoothly by passing the center notch entirely. Length of design is controlled by the speed at which the needle position lever is operated.



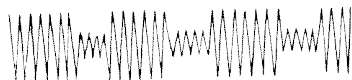
1. Set needle position lever in center notch.
2. Set stitch length regulating dial for "satin" stitch.
3. Start sewing, and move zigzag stitch dial slowly from zero up to "4" and back to zero. Continue operation in even rhythm. Length of design controlled by speed at which zigzag stitch lever is operated.



1. Set stitch length regulating dial for "satin" stitch.
2. Set needle position lever in left notch.
3. Set zigzag stitch dial between "0"- "1".
4. Start sewing and move needle position lever from the left notch to the center notch, to the right notch. Leave needle position lever in right notch.
5. While machine is still in operation, switch zigzag stitch lever to "4". Sew at this position for desired length, then turn zigzag stitch lever back to between "0" and "1".
6. Repeat operation, by moving needle position lever from right notch to center and to left notch.



1. Set stitch length regulating dial for "satin" stitch.
2. Set zigzag stitch dial at "1".
3. Set needle position lever in left notch.
4. Start sewing, and move needle position lever to center notch, to right notch, and back again, using all three notches. Length of design is controlled by the speed at which the position lever is operated, and the time during which it is allowed to remain in each notch.



1. Set needle position lever in center notch.
2. Set stitch length regulating dial for "satin" stitch.
3. Set zigzag stitch dial at "1".
4. Start sewing to desired length, then turn zigzag stitch dial to "4". Stitch desired length, then turn zigzag stitch dial back to "1". Repeat operation. Length of design is controlled by length of time that machine is allowed to stitch at each setting of zigzag stitch lever.

NOTE:

These instructions show you how to make some of the various designs that this zigzag can create, simply and with a minimum of practice on the part of the operator by using a combination of the zigzag stitch lever and the needle position lever. After a little practice with the levers, you soon will be making your own exclusive designs.

EMBROIDERING WITH A HOOP

It is easy to follow a sketched design or to work free hand when embroidering or monogramming. (See Fig. 24)

Release the pressure from the foot by pressing down the snap lock on the pressure release darning. Push in the drop feed button A, Fig. 18.

Stretch the fabric in an embroidery hoop, and place under the needle after removing the presser foot. Set the stitch width at the size you prefer and lower the presser bar lifter. Then operate the machine at a rather high speed while moving the hoop slowly with both hands. Work carefully and be sure to keep fingers out of the path of the needle.

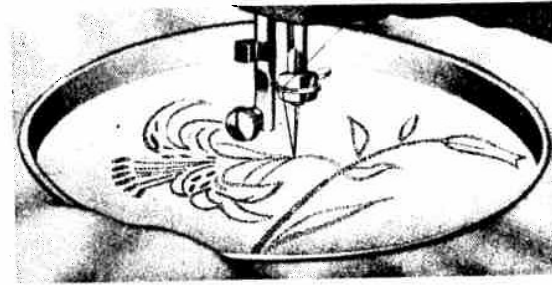


Fig. 24

DARNING

Release pressure from foot and drop feed as directed above.

Place fabric to be mended under foot, and stitch around hole, moving the fabric firmly and slowly in any direction. Be sure to hold the fabric taut or skipped stitches will be encountered.

MAKING BUTTONHOLES

21

Mark the beginning and end of the buttonhole on fabric with a basting line or tailor's chalk. Make one on scrap fabric to be sure machine adjustments are correct.

PREPARATION:

- (1) Replace presser foot with buttonhole foot, (Fig. 25), which provides maximum visibility and allows closely spaced stitches to feed evenly.
- (2) Set needle position of lever in left groove.
- (3) Set the stitch length dial (7, Fig. 1), as near to "0" as possible without stopping feeding action.
- (4) Set the zigzag width control dial by the size of buttonhole. The width of buttonhole, (part A, Fig. 26), is adjusted by locking the right hand side stopper knob, (3 Fig. 1). The width of (part B, Fig. 26), is adjusted by locking the left-hand side stopper knob, (3, Fig. 1).

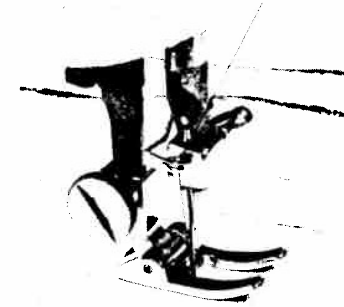


Fig. 25

OPERATION

After finishing above preparation, set the machine as follows.

- (1) Push in the drop feed button (A, Fig. 18).
- (2) Turn the zigzag width control dial completely to right side, to make the upper bar tack of buttonhole. Now sew 5 or 6 stitches.
- (3) Release the zigzag width control dial to the home position of the part of A (Fig. 26).
- (4) Release the drop feed button (A, Fig. 18), and push in the button B (Fig. 18). And sew the left hand side of buttonhole desired length.
- (5) Keeping the needle in fabric (needle stays in the middle width position of part A (Fig. 26), lift up the presser foot and turn the fabric centering needle. Set the presser foot down and remove the needle to the left end of buttonhole turning the balance wheel by hand.
- (6) Now repeat the same way from (1) to (5) process.
- (7) After finished buttonhole making, sew two or three stitches to fasten bar tack threads and prevent ravelling, by setting stitch length dial to "0".
- (8) Cut the buttonhole opening with seam ripper, being careful not to cut the stitching.

Fig. 26

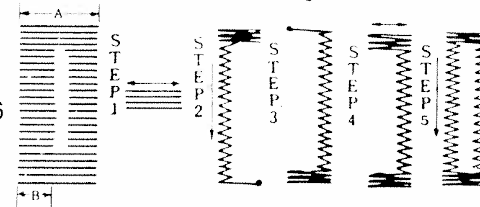


Fig. 27



If you plan to make buttonholes on sheer or soft material, place paper under fabric which can be torn away after stitching. It is always wise to make several buttonholes on scraps of fabric before working on the garment.

SEWING ON BUTTONS

1. Remove hinged presser foot and attach button sewing foot. (See Fig. 28, 29 & 30)
2. Push in the drop feed button A (Fig. 18),
3. Move zigzag width control dial to "0" position to the extreme left. Place the button so that its left hole comes directly under the needle, then gently lower the presser foot. Move the zigzag width control dial to the right until the needle comes exactly over the right hole of the button and set left stop. Turn the balance wheel slowly by hand to be sure the needle clears both holes of the button. Correct width if necessary.
4. When needle goes into the center of each hole, run the machine at medium speed, making five or six stitches, stopping with the needle in the left hole.
5. To lock the zigzag stitch and prevent ravelling, set the stitch width at "0," and take a few stitches in the same hole. If you wish to place a rounded toothpick over the button, between the two holes, and sew button to fabric in regular way. Remove the toothpick and wind thread under button, forming a shank. Fasten it. Apply the above method to sew on buttons with four holes, hooks and snaps, etc.

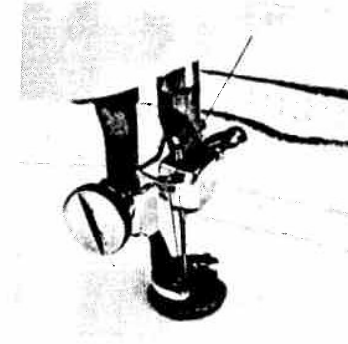


Fig. 28

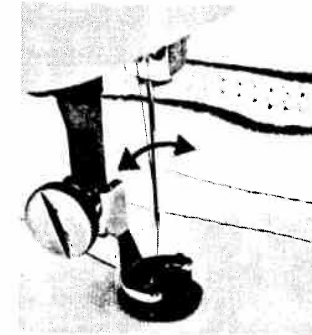


Fig. 29

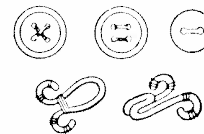


Fig. 30

CARE AND MAINTENANCE OF YOUR MACHINE

OILING YOUR MACHINE

Your machine should be oiled occasionally to keep it operating smoothly how often depends on the amount of sewing you do.

Before oiling the upper part of the sewing unit at points indicated by arrows in Fig. 34, turn hand wheel toward you until the take-up lever is at its lowest point. Remove top cover by loosening two screws on cover.

Avoid over-oiling only a drop is needed at each point. To oil parts under the bed of the machine, tip the unit back on its hinges and apply a drop of oil at each point indicated in Fig. 35.

To oil moving parts inside the face plate, which only rarely require oiling, open plate. Oil at spots indicated in Fig. 36.



Fig. 34

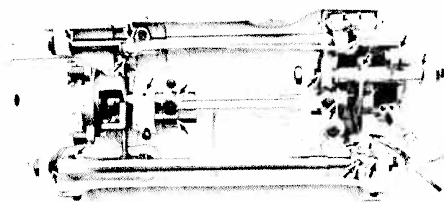


Fig. 35

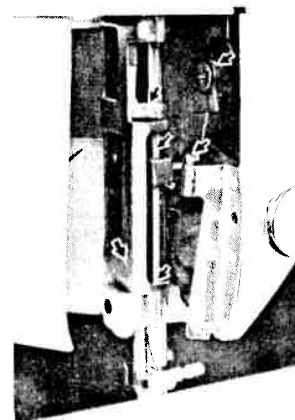


Fig. 36

CLEANING AND OILING THE SHUTTLE

The stitch forming mechanism occasionally becomes clogged with loose threads and lint. This will interfere with the efficient operation of the machine. To remove the shuttle assembly, proceed as follows.

1. Turn the balance wheel until the needle reaches its highest position. Tilt head back on its hinges.
2. Remove bobbin case A, (Fig. 35),
3. Turn the two shuttle race cover clamps B (Fig. 34), outward and remove the shuttle race cover C (Fig. 35) and shuttle body D. (Fig. 35),
4. Clean the shuttle race, the shuttle and shuttle race cover by removing all threads, lint, etc.
5. Apply a drop of oil with finger tip to outer edge of shuttle. When the cleaning has been completed, proceed as follows to replace the shuttle assembly :
 - 1) Turn the balance wheel until the needle reaches its highest position.
 - 2) Place shuttle body, D (Fig. 35), against shuttle driver and adjust into position.

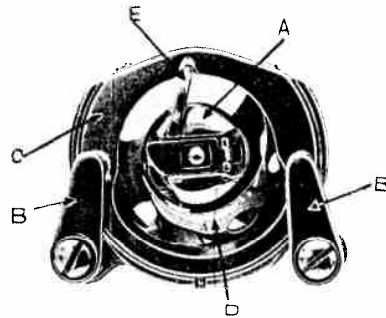


Fig. 34

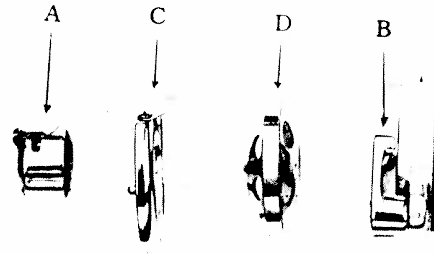


Fig. 35

- 3) Replace shuttle race cover, C, fitting pin at lower edge into notch, and lock into position with shuttle race cover clamps, B, making certain the clamps have been snapped securely into position.
- 4) Place bobbin into the bobbin case.
- 5) Set the bobbin case into the shuttle race, fitting tongue into notch E of race cover.

THE BUILT-IN LIGHT

FRONT SEW LIGHT

1. The lamp housing is enclosed in the hinged face plate. Screw out bulb as shown in Fig. 42, and then insert the new bulb.
2. For replacement, use 10-C-7 or 7-C 7, or "night light" bulb available everywhere. Use switch on face plate to turn this light on and off.

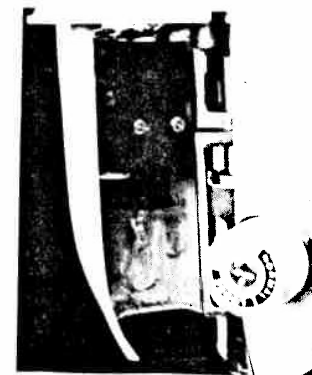
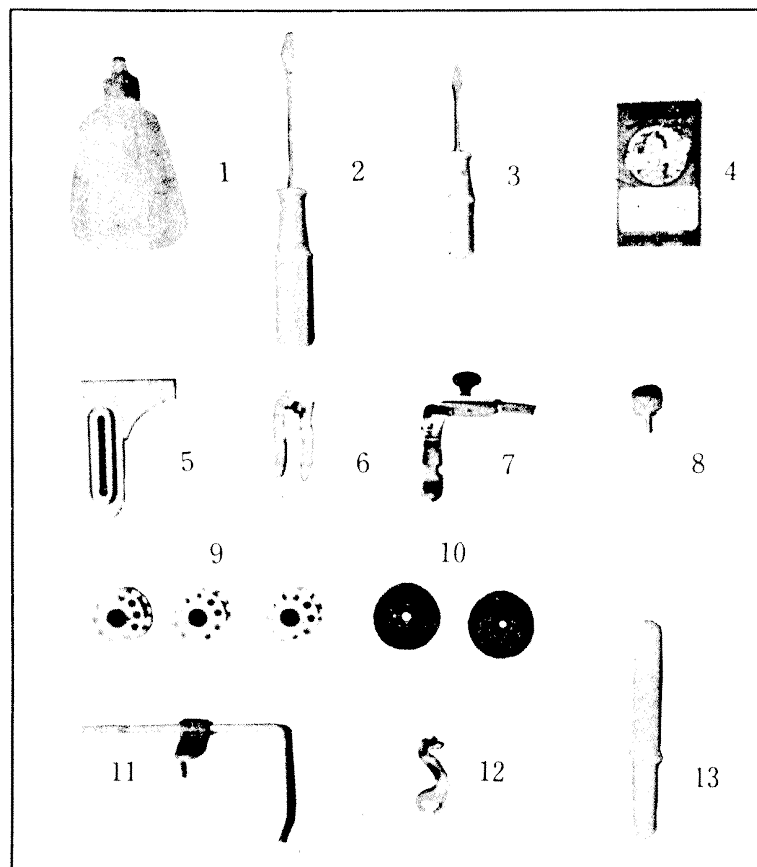


Fig. 36

ACCESSORIES

- lastic Oiler
- 2 Large Screw Driver
- 3 Small Screw Driver
- 4 Package of Needles
- 5 Cloth Guide
- 6 Buttonhole Foot
- 7 Fasher Foot
- 8 Thumb Screw
- 9 Bobbins
- 10 Felt Washers
(for spool pins)
- 11 Quilter
- 12 Button Sewing Foot
- 13 Buttonhole Cutter



HOW TO USE ACCESSORIES

LACE TRIMMED HEM

To sew a narrow hem and attach lace in one stitching. Insert lace in the slot next to needle. Sew hem as above, guiding lace under needle and hem into scroll.

THE ADJUSTABLE CORDING AND ZIPPER FOOT

This attachment is used to make and insert covered cording and to sew in zippers. Loosen thumb screw to slide foot to either right or left of needle.

CORDING

Fold bias strip of fabric over cord. Loosen thumb screw and set foot so needle is centered in needle hole. Machine baste cord in place (Fig. 42). To sew covered cord to material, reset adjustable foot so needle stitches closer to cord, and on edge of base fabric.

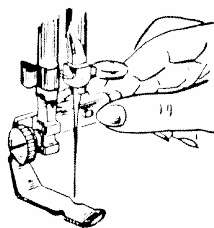


Fig. 42-A

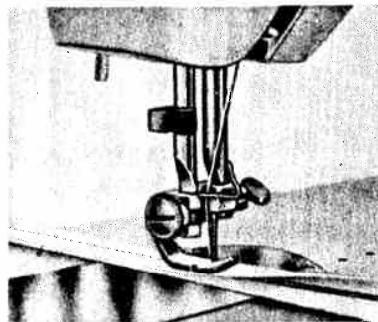


Fig. 42-B

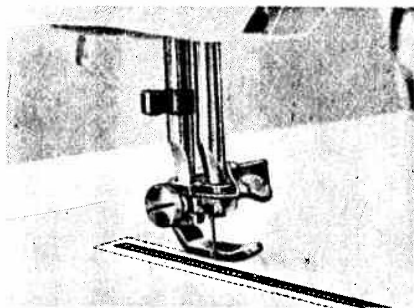


Fig. 43

SEWING IN A ZIPPER

Loosen thumb screw and slide foot so needle enters center of needle hole. Guide metal of zipper along edge of foot (Fig. 43). Stitching should be close to zipper to allow easy opening and closing. Adjust to sew from either right or left side, whichever is more convenient.

SEAM GAUGE OR CLOTH GUIDE

Use a seam gauge as guide for straight seams and even rows of top stitching along edges of fabric. Fasten gauge with accompanying screw in threaded hole in bed of machine (Fig. 44). Adjust to seam width desired.

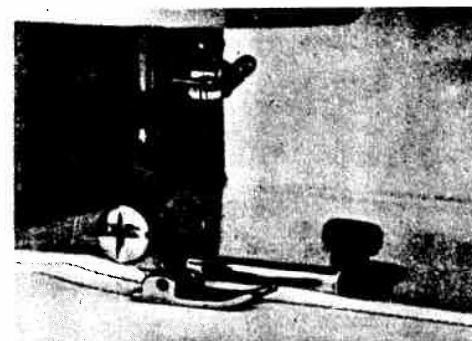


Fig. 44

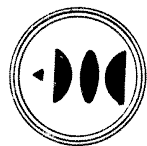
AUTOMATIC EMBROIDERY

To sew automatically the stitches shown in next page, follow these procedure.

1. Be sure the zigzag needle plate and the zigzag presser foot are on the machine and the zigzag stitch locking dials(3, Fig. 45) are each in its off positions.
 2. Set the zigzag stitch width dials(2, Fig. 45) in its end position clockwise. (The mark of stitch dial points to "5" position.)
 3. Open disc cover at the top of the machine.
 4. Insert disc cam of your choice into disc holder. Be sure that it fits snugly on the spindle in the disc cover and turn the disc until it snaps into place. Close disc cover.
 5. Move zigzag stitch width dial (2, Fig. 45) in its end position counter-clockwise.
 6. Start sewing with your preferable stitch length, but most embroidery designs require "1" or "less" stitch length for best appearance.
- To remove disc cam, turn balance wheel until take-up lever is at its highest point, open disc cover, set the stitch width dial to "5" position. and pull disc up.

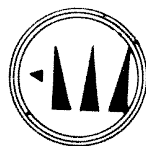
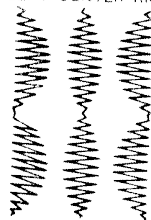


Fig. 45

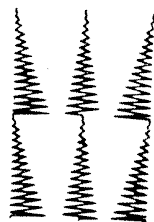


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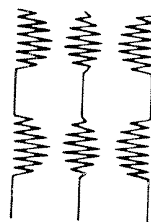
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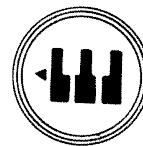
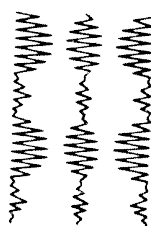
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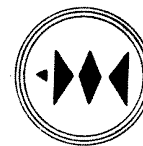
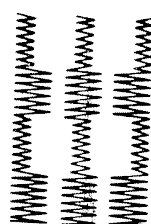
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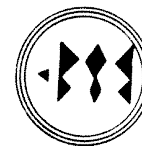
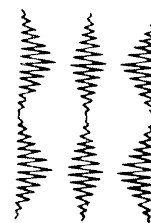
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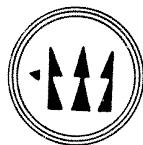
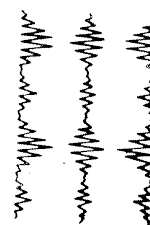
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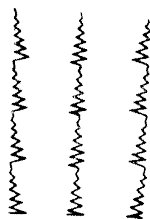
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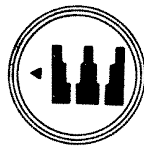
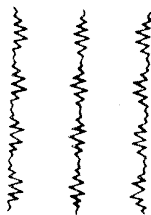
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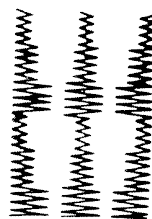
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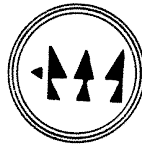
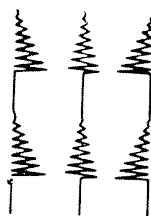
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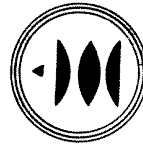
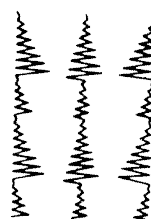
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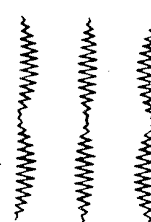
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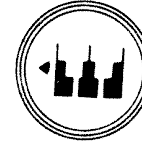
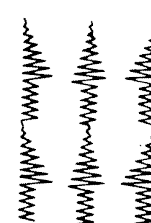
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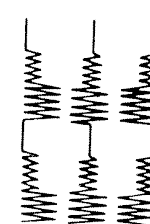
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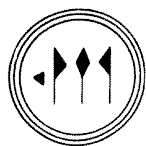


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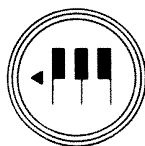


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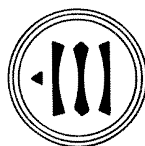




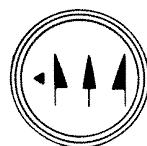
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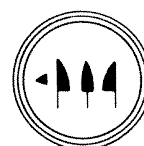
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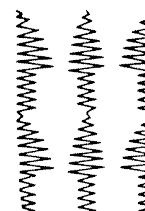
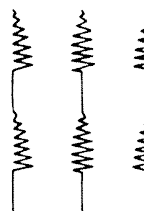
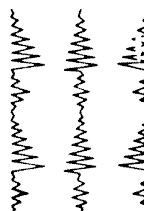
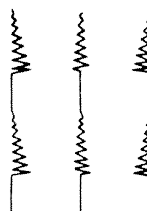
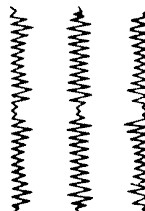
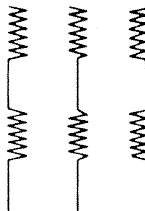
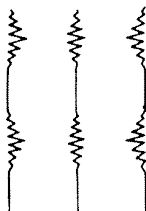


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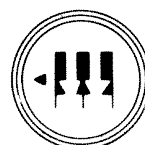
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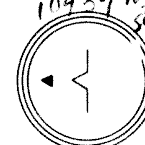
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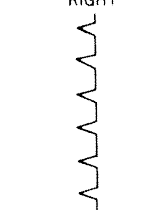
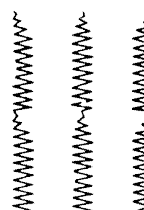
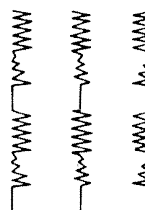
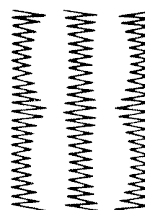
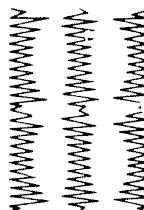
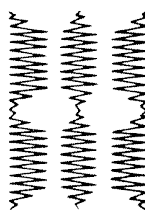
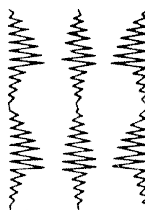
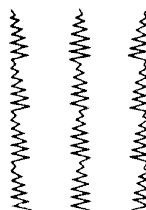
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30

11929 Blind
Sketch
Came

RIGHT



BLIND HEMS

1. Use blind stitch cam.
2. Use standard zigzag presser foot and needle plate.
3. Set needle position lever in right notch marked (◀).
4. Set zigzag stitch width control knob at "0".
5. Set stitch length control dial between "2" and "3".

Prepare the garment in the same manner as for hand hemming.

Step 1. If hem with folded edge is used make first fold $\frac{3}{8}$ " deep.

Step 2. Turn hem the depth desired and baste $\frac{1}{4}$ " from upper edge.

Press into place.

Step 3. Fold hem back toward right side of garment leaving $\frac{1}{4}$ " extended.

Step 4. Place material under presser foot and sew blind hem automatically.

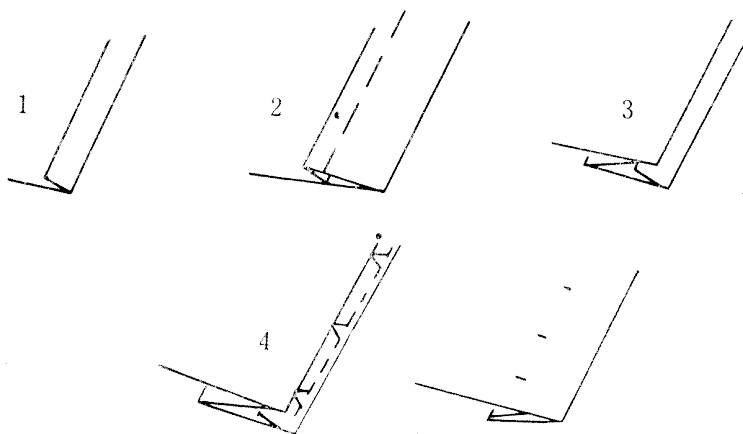


Fig. 49

OPERATING HINTS

SEE THAT THE PRESSER FOOT is securely clamped by the screw and snug against presser bar so that the needle may pass through the opening in the foot without any interference.

SKIPPED STITCHES. May be caused by a bent or blunt needle; by incorrect setting of needle; the wrong size needle; by a thread too heavy for the size of the needle.

BREAKING NEEDLES are usually due to pulling on the material, causing the needle to bend out of line and strike the needle plate thus breaking or bending the needle. It may be due to the presser foot or attachment not being securely fastened to presser bar. Be sure to use correct size needle and thread for material. See needle chart, page 6.

BREAKING THE UPPER THREAD may be caused by:

1. Incorrect threading.
2. Not bringing up under thread correctly.
3. Upper tension too tight.
4. Needle imperfect or set incorrectly.
5. Needle rubbing against attachments or presser foot.
6. Needle eye too small for thread.
7. Starting the machine at full speed.
8. Starting without take-up lever at highest position.

BREAKING LOWER THREAD may be caused by:

1. Incorrect threading of bobbin case.
2. Too tight a tension.
3. Bobbin wound too full to revolve freely.
4. Not bringing up under thread correctly.
5. Hole in the needle plate rough, caused by needle striking the plate.

UNEVEN STITCHES may be caused by:

1. Presser foot not resting evenly on material.
2. Feed not high enough.
3. Too short a stitch.
4. Pulling the cloth.
5. A fine needle with coarse or poor thread.