
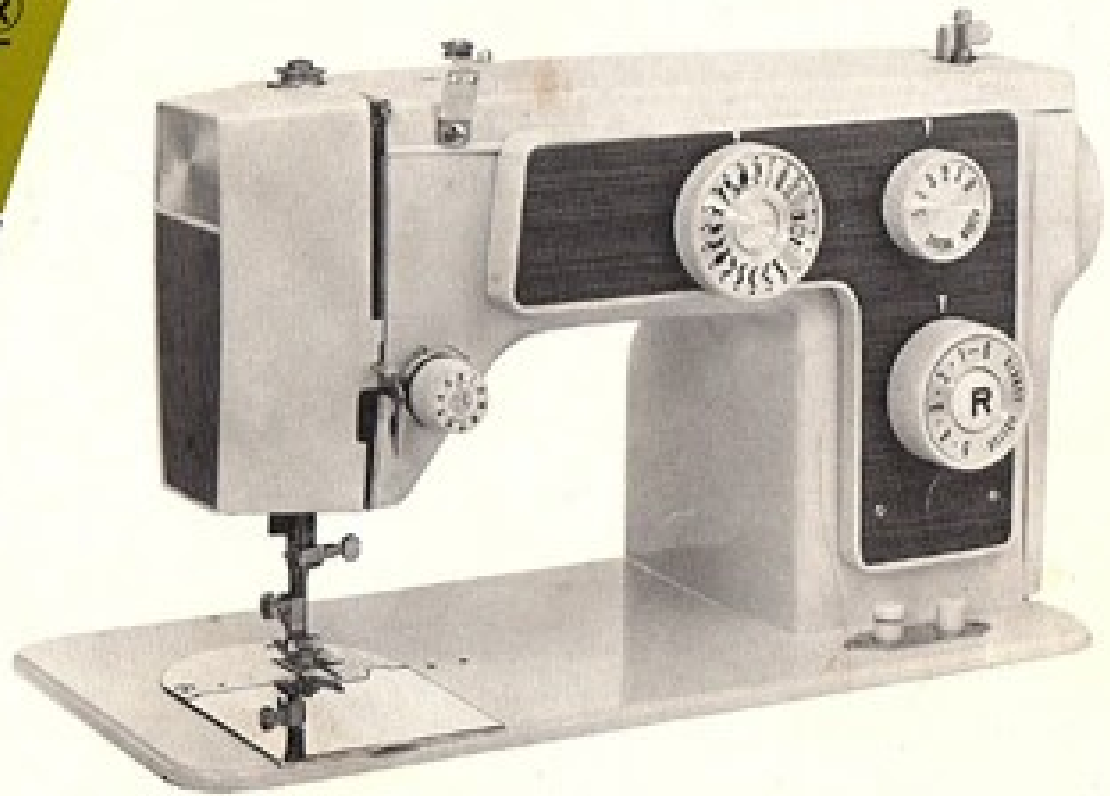


DIAL  SEW<sup>®</sup>



***INSTRUCTION BOOK***

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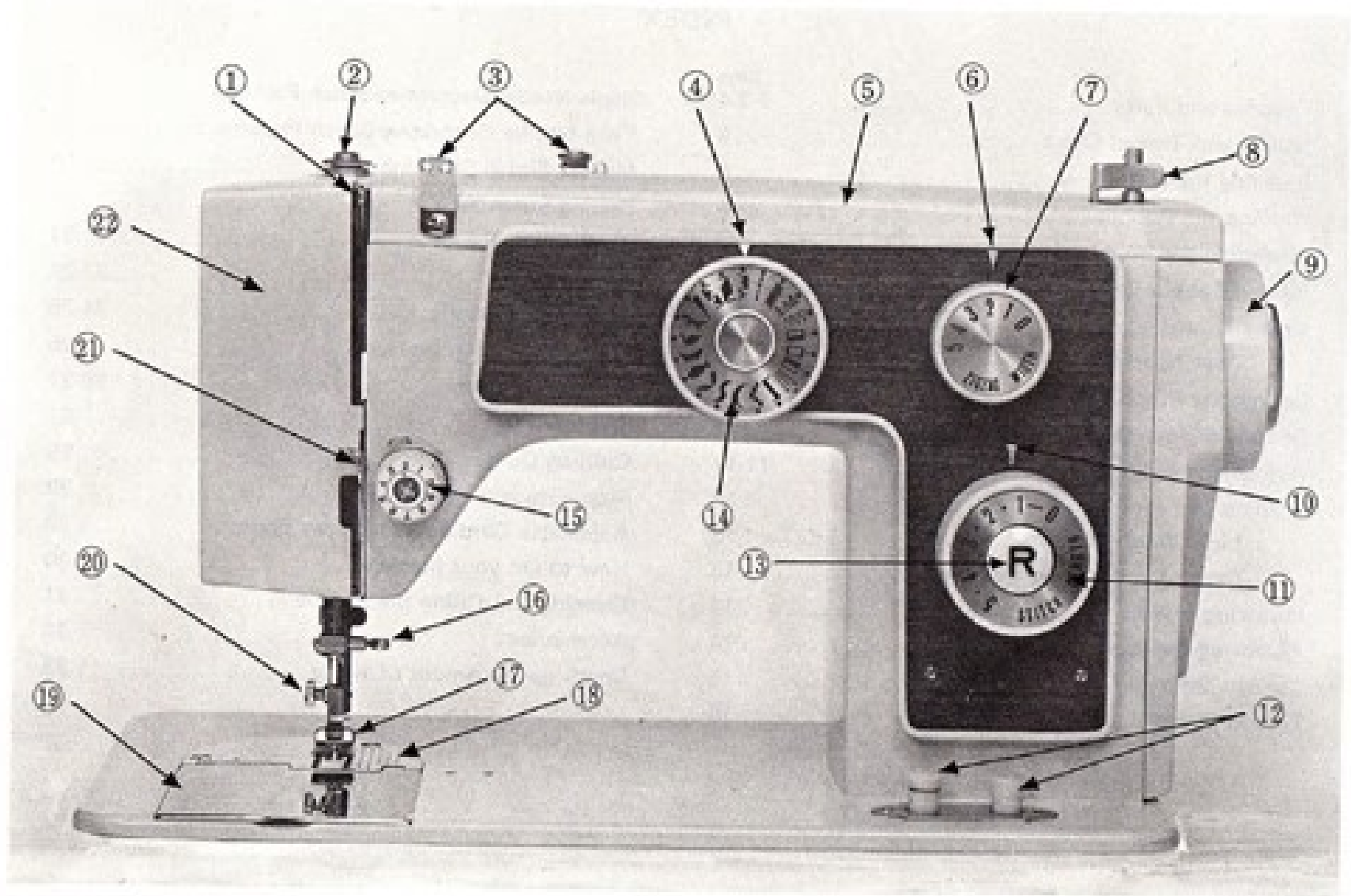


Fig. 1

## FEATURES AND PARTS

(Front View)

- |                                |                                    |
|--------------------------------|------------------------------------|
| 1. Thread Take-up Lever        | 12. Drop Feed Buttons              |
| 2. Pressure Release (Darning)  | 13. Push Button Reverse            |
| 3. Arm Thread Guides           | 14. Decorative Stitch Pattern Dial |
| 4. Pattern Indicator           | 15. Tension Regulator              |
| 5. Top Plate                   | 16. Needle Clamp                   |
| 6. Zigzag Width Indicator      | 17. Presser Foot                   |
| 7. Zigzag Width Control Dial   | 18. Needle Plate                   |
| 8. Bobbin Winders Spindle      | 19. Bobbin Cover Plate             |
| 9. Hand Wheel                  | 20. Presser Foot Thumb Screw       |
| 10. Stitch Length Indicator    | 21. Thread Bar and Guide           |
| 11. Stitch Length Control Dial | 22. Face Plate                     |

## FEATURES AND PARTS

(Back View)

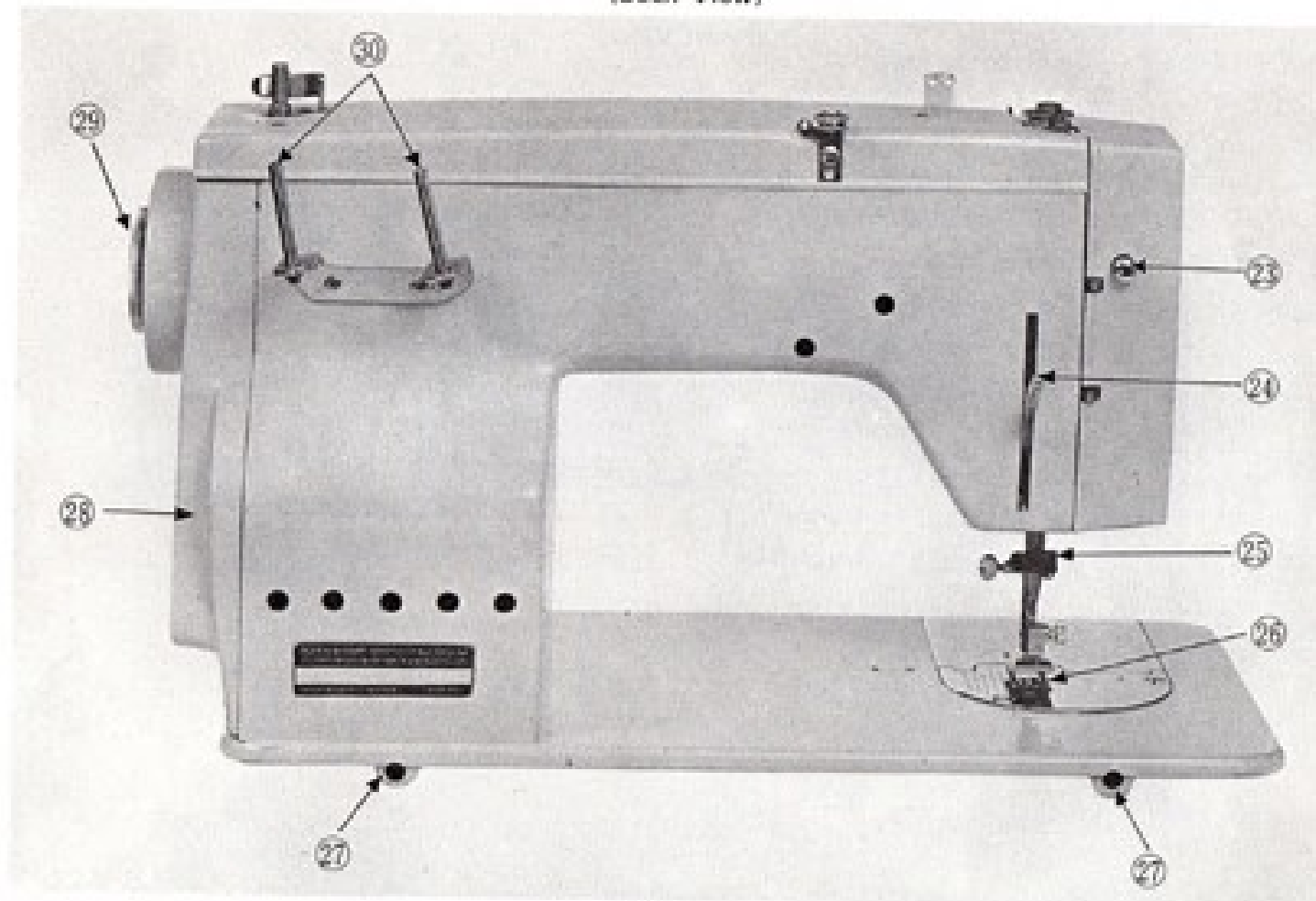


Fig. 2

- |                        |                               |                      |
|------------------------|-------------------------------|----------------------|
| 23. Lamp Switch        | 26. Feed                      | 29. Stop Motion Knob |
| 24. Presser Bar Lifter | 27. Head Hinge Mounting Holes | 30. Spool Pins       |
| 25. Thread Cutter      | 28. Motor Belt Cover          |                      |

## NEEDLE-THREAD-FABRIC-STITCHING GUIDE

Fabric	Needle No.	Machine Stitches Per Inch	Cotton Thread	Mercerized Thread	Silk or Nylon
Extremely heavy tarpaulin, sacking, canvas, duck, etc.	19	6 to 8	10 to 30	Heavy Duty	
Heavy upholstery fabric, ticking, denim, leatherette	18	8 to 10	30 to 40	Heavy Duty	
Medium heavy drapery fabric, velveteen, suiting, felt, terry, etc.	16	10 to 12	40 to 60	Heavy Duty	
Medium broadcloth, percale, gingham, linen, chintz, taffeta, sheer wool, shantung, etc.	14	12 to 14	60 to 80	50	A
Sheer voile, lawn, dimity, crepe, handkerchief linen, plastic film, etc.	11	14 to 16 (Plastic film) 8 to 10	80 to 100	50	A
Very sheer chiffon, batiste, lace, organdy, nixon, net, marquisett, etc.	9	16 to 20	100 to 150	50	A

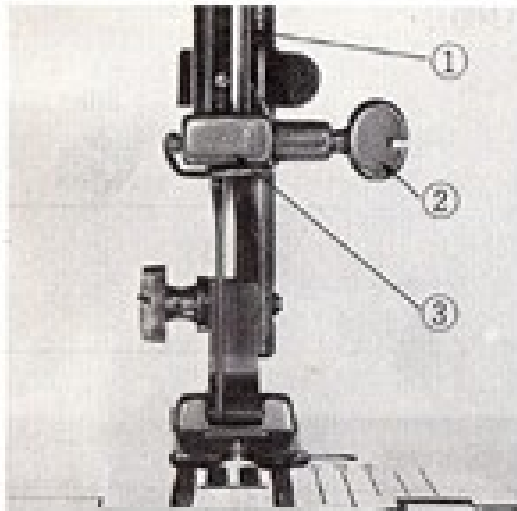


Fig. 3

## INSERTING THE NEEDLE

See Fig.3. Raise the needle bar (1) to its highest point, turning hand wheel toward you by hand. Then loosen the needle clamp screw (2) and the needle can be inserted into clamp (3).

Place needle (Fig.4, flat side to back) in the needle clamp and push it upward as far as it will go into the needle clamp hole, tightening the needle clamp screw securely with a screw driver.

After changing the needle make one complete revolution of the hand wheel by hand to be sure the needle is in the correct position.

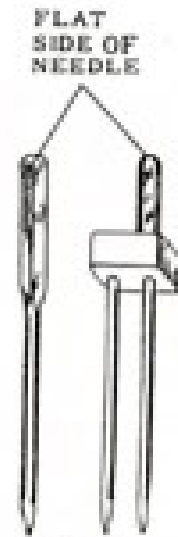


Fig. 4

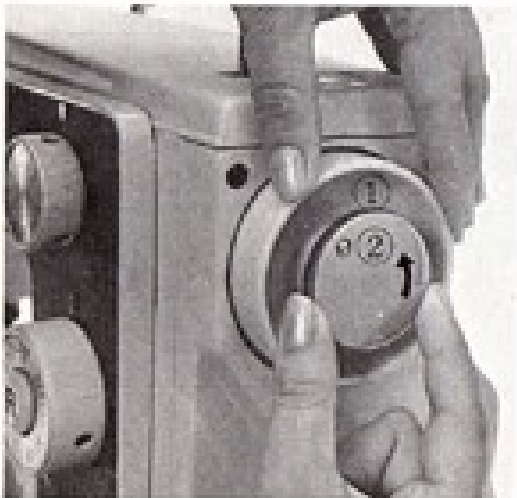


Fig. 5

## WINDING THE BOBBIN

Disengage the hand wheel (1), Fig.5) from the stitching mechanism by turning the clutch (2), Fig.5) toward you or counter clockwise. Place a spool of thread on one of the spool pins and lead thread around one set of arm thread guide (3), Fig.6) from under to upper. Run end of thread through a hole in the bobbin edge and place bobbin on spindle of bobbin winder (4), Fig.6) fitting the notch on bobbin over small pin on spindle. Push bobbin winder lever (5), Fig.6) against bobbin. Hold thread end loosely and start machine slowly.

Bobbin will stop winding when it is filled. Turn clutch away from you until sewing mechanism is again engaged so that needle moves when you turn the hand wheel. Break off loose thread end used to start the winding.

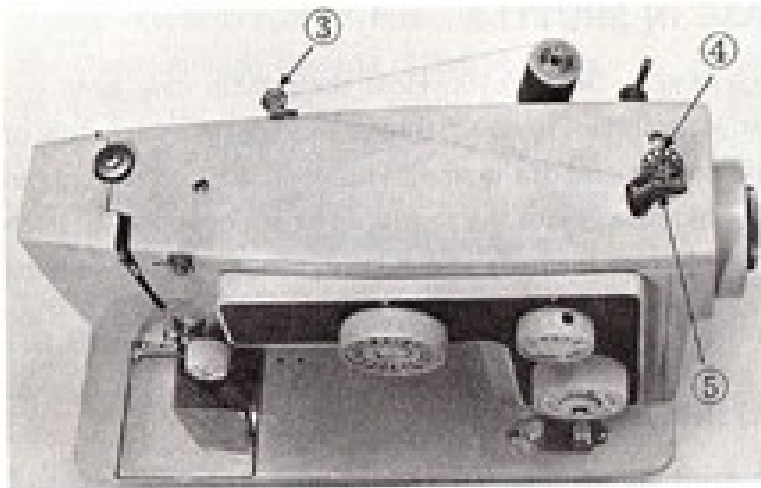


Fig. 6

## THREADING THE BOBBIN CASE

Step 1 (illustrated in Fig. 7) Hold bobbin case between thumb and forefinger of left hand, so that the slot in the edge of the bobbin case is on top. Take 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. 8, and draw it under the tension spring and into the delivery eye as shown in Fig. 9.

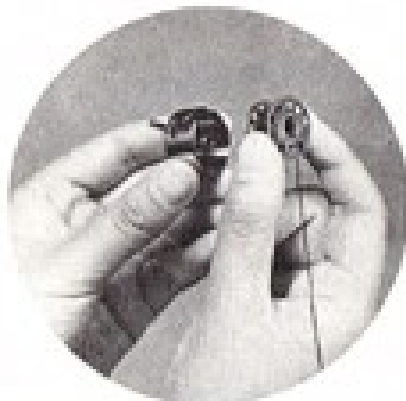


Fig. 7



Fig. 8



Fig. 9



## PLACING BOBBIN CASE IN SHUTTLE

Open hinged cover plate in front of the needle. (See ③ , Fig.1) See Fig.10. Hold the bobbin case latch, ①, between the thumb and forefinger of the left hand, with at least three inches of thread running from the top of the bobbin case to the right. Insert and center the bobbin case on the stud of the shuttle hook ②. Be sure the bobbin case finger, ③, is opposite the shuttle race notch, ④. Press the bobbin case ⑤ into the shuttle as far as possible until latch catches on the center post of the shuttle. THEN release the bobbin case latch, ①. Press bobbin case again after latch has been released to make sure the bobbin case is locked securely in place. Close the cover plate.

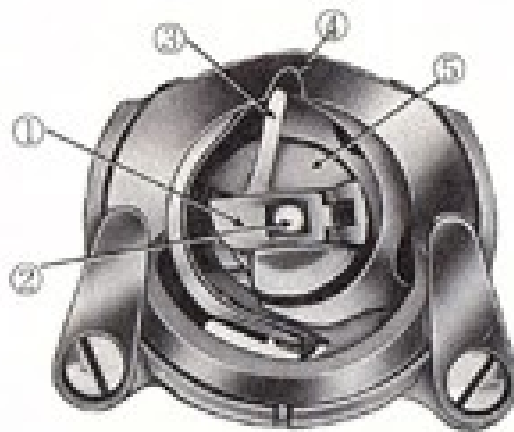


Fig.10

## UPPER THREADING SINGLE NEEDLE

1. Turn the hand wheel toward you to raise the take-up lever and needle to their highest position.
2. Place spool of thread on spool pin.
3. lead thread under arm thread guides and by a circular motion with your left hand lead thread through guides
4. down and around one set of tension discs from right to left,
5. into notch on the right hand side of check spring over threaded discs
6. under thread guide bar and into guide (⑥, Fig.12)

- 7. Up into take-up lever from right to left.
- 8. Down through guide in thread bar again.
- 9. Into guide inside face.
- 10. Through needle clamp guide and into needle from front to back pulling three or four inches of thread through needle.

Hold the end of upper thread loosely and turn hand wheel toward you until the needle goes all the way down and comes back up. A loop (Fig. 11) will be formed over the upper 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.

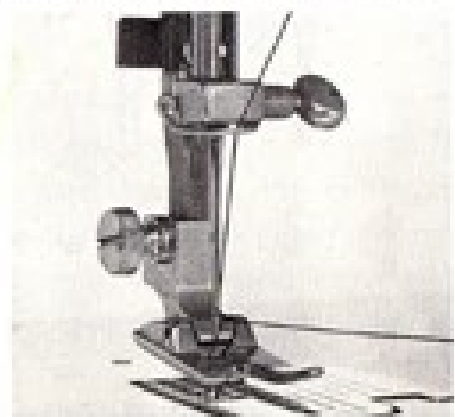


Fig. 11

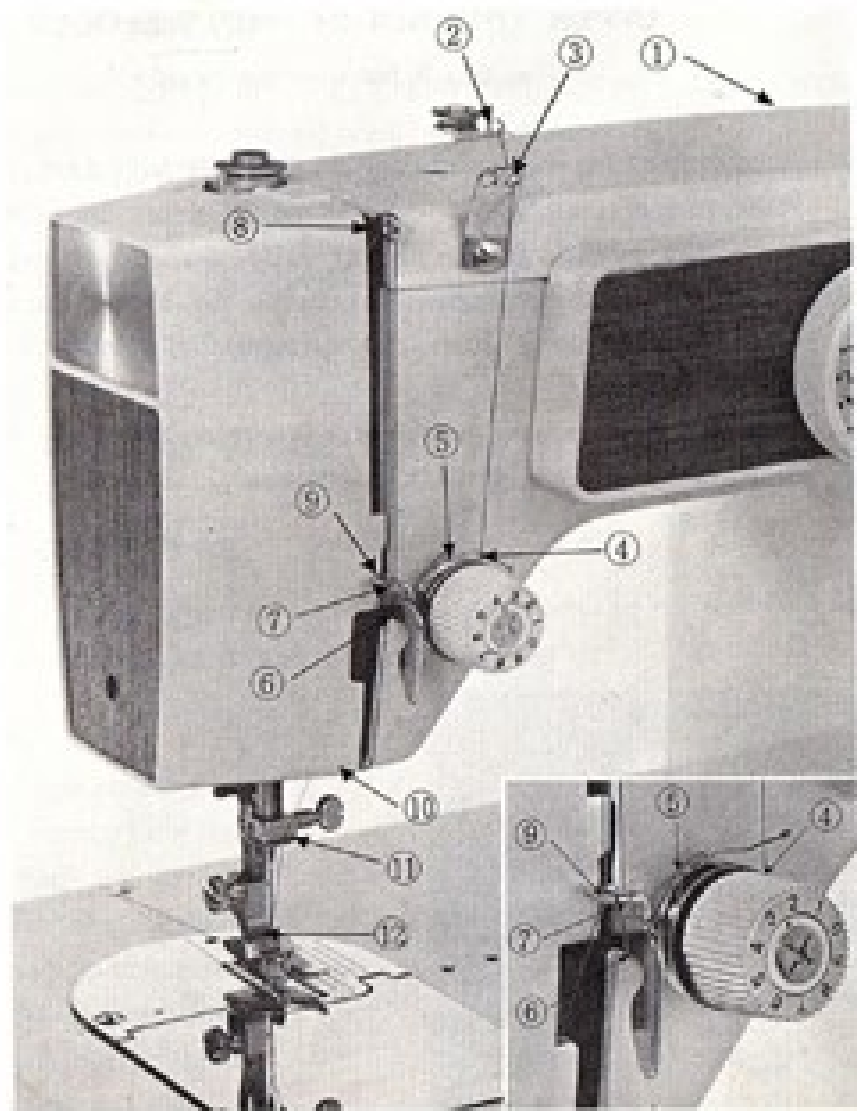


Fig. 12

## UPPER THREADING TWIN NEEDLES

(See Fig. 3 for inserting needles)

Follow threading instructions for single needle with these exceptions. Place thread, matching or contrasting in color, on both spool pins. Draw threads through arm thread guides then down and around tension discs with one thread passing between the back discs and the other between the front discs. Then into corresponding notches of check spring. Fig. 12.

Now treat both threads as one until you reach the needle eyes.

Pass one thread through each needle eye.

Fig. 13, 14.

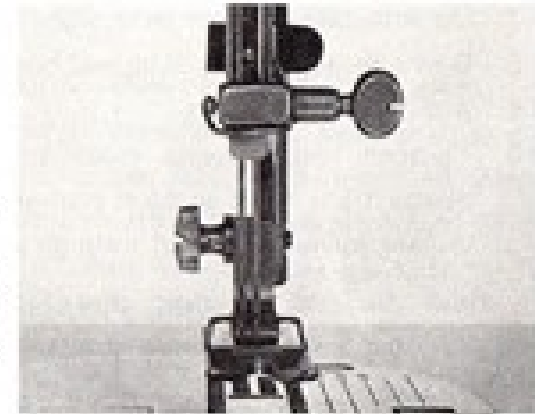


Fig. 13



Fig. 14

## SETTING THE STITCH LENGTH

The length of the stitch is regulated by the stitch length control dial (ⓐ, Fig. 1) Near 0 is the shortest stitch and 5 is the longest, but the control may be set at any spot between marking for a variety of lengths.

Turn the control to the right to lengthen and to the left to shorten the stitch. The number of the stitch length you choose should appear under the indicator.

STITCH LENGTH CHART (Approximate)

Figures on indicator	0	1	2	3	4	5
Number of stitches per inch	No Feeding	30	15	10	7	6

## SEWING IN REVERSE

When you wish to sew backward to tie the threads at the beginning or end of a seam, press in the push button (ⓑ, Fig. 1) as far as it will go. The machine will sew backward as long as the button is held in.

## ADJUSTING THE TENSIONS

Always adjust the upper tension with the presser foot down, as the tension is released when it is raised. To increase the tension on the upper thread, turn dial (Fig. 15) to the right, or clockwise. To decrease, turn to the left. The higher the number on the dial, the tighter the tension. Before adjusting lower tension be sure that the machine is threaded properly. When necessary to change the bobbin tension, turn small screw (Fig. 16) on side of the bobbin case clockwise to tighten, counterclockwise to loosen.

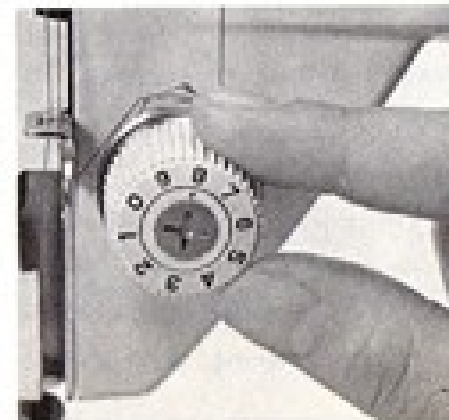


Fig. 15

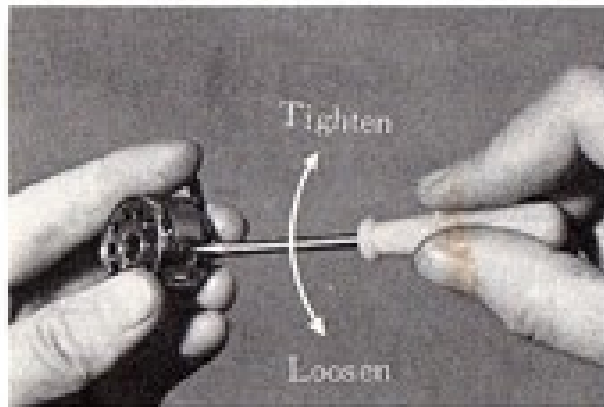


Fig. 16

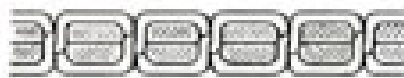


Fig. 17

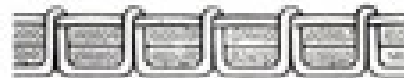


Fig. 18



Fig. 19

When the upper and lower tensions are properly balanced, a perfect stitch will be formed with both threads interlocking in fabric (Fig. 17).

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. 18).

When the upper tension is too loose, the upper thread forms loops over the lower thread lying flat under the fabric (Fig. 19).

### FEEDING OF FABRIC

The height of the feed dog may be regulated according to the thickness of the material being sewn, by proper setting of the push buttons (Fig. 20).

1. In sewing on thin materials, such as silk, crepe de chine etc., push the button marked "DOWN" down as far as the red line.
2. In sewing on thick materials, such as overcoats, push the button marked "UP" down as far as it will go.
3. When it is necessary to turn the work freely as in embroidering and button sewing, push the button marked "DOWN" as far as it will go.

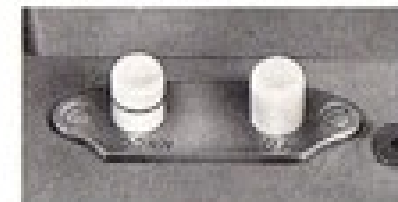


Fig. 20

## SEWING THIN OR LIGHT WEIGHT FABRICS

When lighter pressure is required to sew satisfactorily on thin silk or filmy material, the pressure cap should be about halfway down.

Release all the way by pressing the snap lock, (①, Fig. 21) and then press cap (②, Fig. 22) down again to halfway spot.

## 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 cap (②, Fig. 22) completely by pressing down on the snap lock, (①, Fig. 21) Press "DOWN" button all the way down, which drops the feed well below the needle plate. To return feed to normal, press "UP" button, push cap down. (Fig. 22)

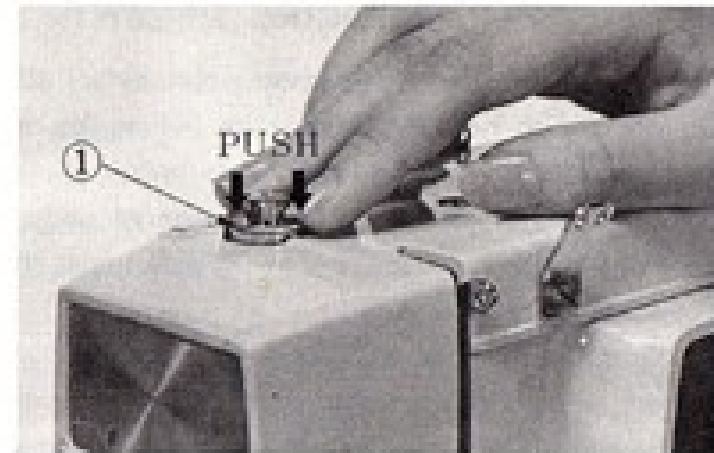


Fig. 21

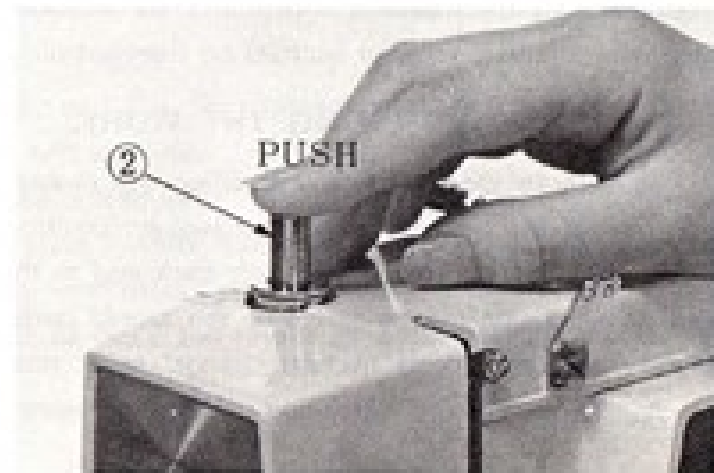


Fig. 22

## PREPARING TO SEW

Have take-up lever at 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.

Turn the hand wheel toward you until the needle is at its highest point. You are now ready to begin sewing. By having the needle at its highest point, it is not necessary to touch the hand 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. 23 and 24, and pass the threads 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.

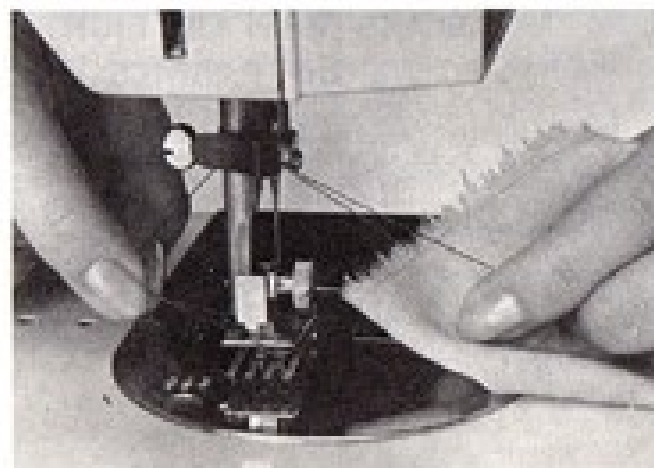


Fig. 23

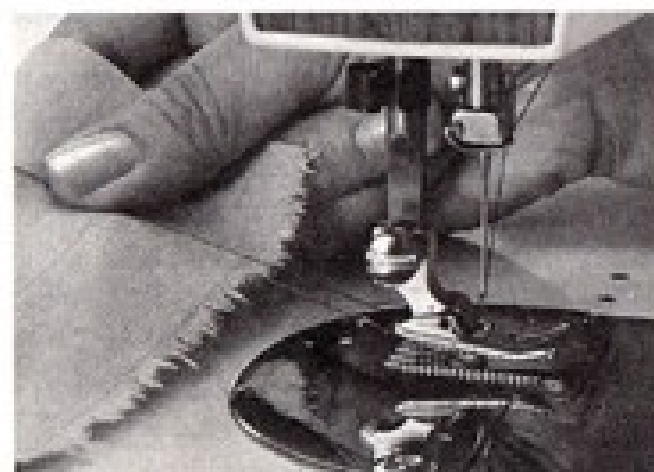


Fig. 24



Fig. 25

## STRAIGHT STITCHING

For straight sewing on fine fabric or very soft material, it is advisable to use the straight stitch presser foot and the straight stitch needle plate which are included in your accessory box. Both have narrow needle slots.

Changing the Foot and Plate. To change presser foot ( ① , Fig. 1) loosen thumb screw and remove zigzag foot. Replace with hinged straight foot and tighten screw securely. (Fig. 26)

To change needle plate ( ② , Fig. 1) remove screw and lift off with cover plate attached.

Hold needle plate with left hand and cover plate with the right. (Fig. 25)

Press upper corner of cover plate (right side up) down slightly and slip pin from groove in needle plate. Avoid using too much pressure. When the pin is released the two plates will separate.

Attach cover plate to straight stitch plate by reversing the above procedure.

Slip pin on lower side of cover plate into groove on needle plate. Insert tongue into square opening and slide upper pin into position. Put plates on machine and fasten securely with needle plate screw.

When using the straight stitch needle plate and foot, be sure to make the following setting before starting to sew or the needle will break in striking the foot or needle plate.



Fig. 26



1. Select straight stitching pattern ( ; ) by turning the decorative stitch pattern dial.
2. Align "5" position on the zigzag width control dial with the indicator.
3. Many other control settings are available to make the machine sew a straight stitch when the zigzag presser foot and needle plate are used. However, none will produce as satisfactory results on fine fabric or very soft material.

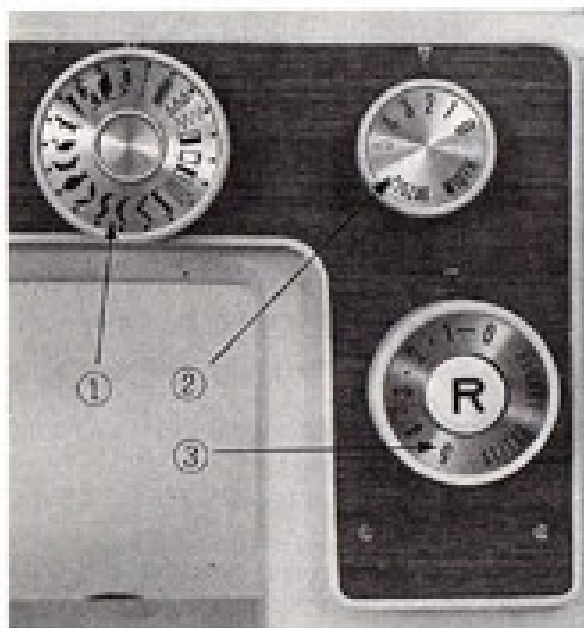


Fig. 27

### PATTERN SEWING

1. Any one of the stitch designs illustrated on the pattern plate can be made.
2. Change to the zigzag presser foot and zigzag needle plate.
3. In choosing a pattern, turn the decorative stitch pattern dial ( ① , Fig. 27). Turn the decorative stitch pattern dial until you get the desired pattern.
4. For best results align "5" position on the zigzag width control dial ( ② ) with the indicator and set the stitch length control dial ( ③ ) to "½" ~ "2".

*Note 1 Never turn the decorative stitch pattern dial clockwise from **1** pattern or counterclockwise from **1** pattern indicated on pattern plate.*

*Note 2 After setting the zigzag width control dial to "0", select a pattern, and you can turn the decorative stitch pattern dial smoothly.*

## SINGLE NEEDLE DECORATIVE STITCH PATTERNS

Zigzag Width Control Dial					
5	4	3	2	1	0

Fig. 28

*Note: Variations of the above patterns can be made by adjusting the stitch length control Dial.*

## TWIN NEEDLE DECORATIVE STITCH PATTERNS

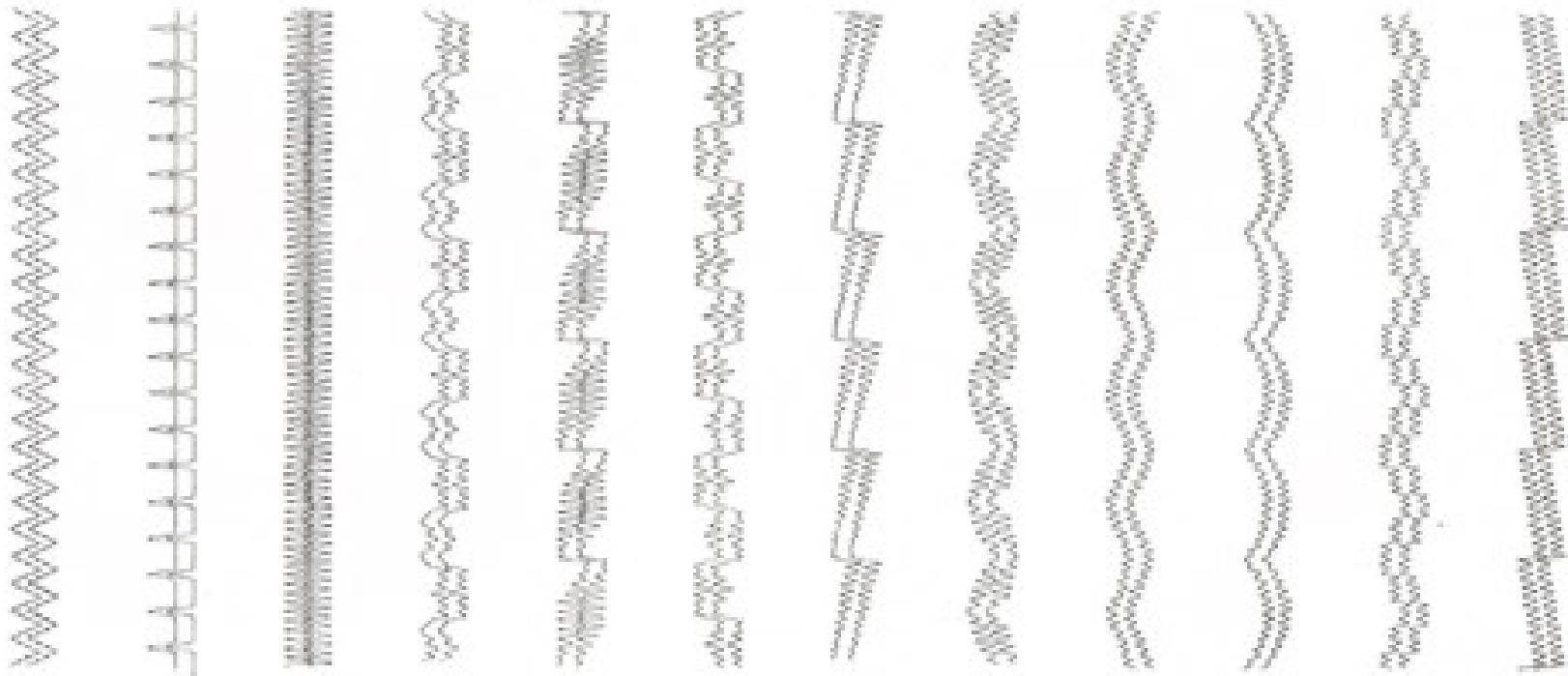



Fig. 29

**Note:** *The zigzag width control dial must not be turned beyond "4" in the red-marked area. If this warning is ignored, the needle will hit the side of the needle plate and break.*

## MANUAL ZIGZAG STITCHING

1. Align manual pattern (  ) on the decorative stitch pattern dial with the indicator.
2. Set the stitch length control dial and the zigzag width control dial as you wish.
3. Varied patterns are available by changing the position of the zigzag width control dial and that of the stitch length control dial.
4. When the zigzag width control dial is manually turned as you operate the machine, such free patterns as are shown in Fig.30 & Fig.31 are available.

### SINGLE NEEDLE MANUAL ZIGZAG STITCH PATTERNS (Use only pattern )




Patterns	Stitch Length	Stitch Width Control Dial
	Long Short	Any point from 1 to 5.
	Long Short	Gradually move from 0 to 5, and return to 0. (Repeat)
	Long and Short (Repeat)	Any point from 1 to 5.

Fig. 30

### TWIN NEEDLE MANUAL ZIGZAG STITCH PATTERNS




Patterns	Stitch Length	Stitch Width Control Dial
	Long Short	Any point from 1 to 3.
	Short	Gradually move from 1 to 3.
	Long and Short (Repeat)	Any point from 1 to 3.


Fig. 31

## BASTING STITCH

Your Machine has the capability of making an automatic basting stitch.

This stitch is extra long and easy to pull out-ideal for basting.

Please follow these simple step:

- Step 1. Replace regular needle with the special basting needle.
- Step 2. Align blind stitch pattern (  ) on the decorative stitch pattern dial with the indicator.
- Step 3. Set zigzag width control dial at five (5) (the widest setting)
- Step 4. Set stitch length control dial at five (5) (the longest stitch length)
- Step 5. Pull up the bottom thread by turning the hand wheel till the needle swings to the left side and locks with the bottom thread.


The machine is now properly set for automatic basting. The machine will skip four stitches on the right, on the fifth stitch the needle will swing to the left and the thread will lock.

The thread will only lock on the left side. The machine will continue to skip four stitches on the right and lock the thread every fifth stitch on the left to produce a long basting stitch. This can be removed easily by pulling on one thread.

## BLIND STITCH HEM

Use standard zigzag foot. (Fig. 32)

Set stitch length control dial at number 3 or 4.

Select blind stitch pattern (  ), by turning the decorative stitch pattern dial.

Zigzag stitch width to suit material being sewn.

The lower the number, the smaller the sidewise stitch.

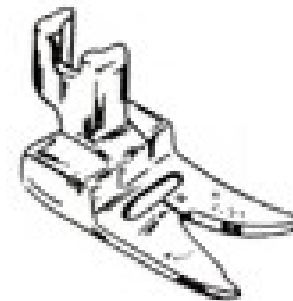


Fig. 32

Blind stitch hems provide a durable hem finish that is almost invisible and comparable to hand sewing. Prepare the garment in the same manner as for hand hemming.

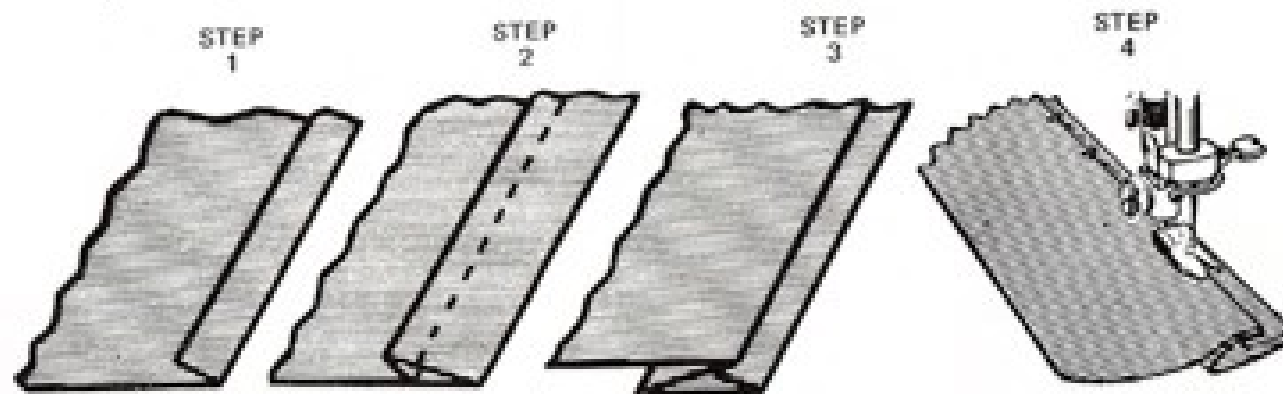


Fig. 33

Step 1. If hem with folded edge is used, make first fold 3/8" deep.

Step 2. Turn hem the depth desired and baste 1/4" from upper edge. Press into place.

Step 3. Fold hem back toward right side of garment leaving 1/4" extended.

Step 4. Place garment under presser foot and sew blind hem.



## BUTTON HOLES

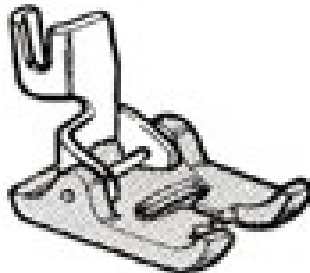


Fig. 34

The width of the button hole sides are governed by the material used. Set the zigzag width control dial to "3" ~ "5" position for thick material and a lower number for thin material.

Mark the beginning and end of the button hole on fabric with a basting line or tailor's chalk.

Make one on scrap fabric following directions below to be sure machine adjustments correct.

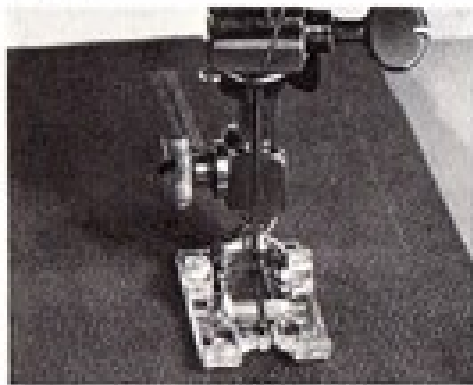


Fig. 36

A button hole can be made in any length within the range of limited widths. To establish the correct length buttonhole required add 1/8 inch to the cutting space for bar tacks.

To obtain the length of the cutting space, the opening through which the button passes is measured by adding the width (A) and thickness (B) of the button. Fig. 35.

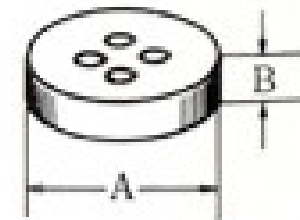


Fig. 35

- 1) Replace presser foot with special purpose button hole foot it provides maximum visibility and allows closely spaced stitches to feed evenly. Fig. 34.
- 2) Set zigzag width control dial to suit material being sewn or width of button hole desired.
- 3) Set stitch length control dial at number 0 ~ 1.

See Fig. 37.

- 4) Select number 1 position for reverse stitching of the button hole by turning the decorative stitch pattern dial. Lower presser foot. Sew left hand side of button hole. (Reverse stitching)
- 5) With needle out of the cloth select number 2 position on the decorative stitch pattern dial. Sew 4 or 5 stitches. (Bar tack) Too many stitches sewn at this point will cause problems with the feeding of the material (Pile up). Stop machine.
- 6) With needle out of the cloth, select number 3 position on the decorative stitch pattern dial. Sew right hand side of button hole. (Forward stitching)
- 7) With needle out of the cloth, select number 4 position on the decorative stitch pattern dial. Sew 4 or 5 stitches. (Bar tack)

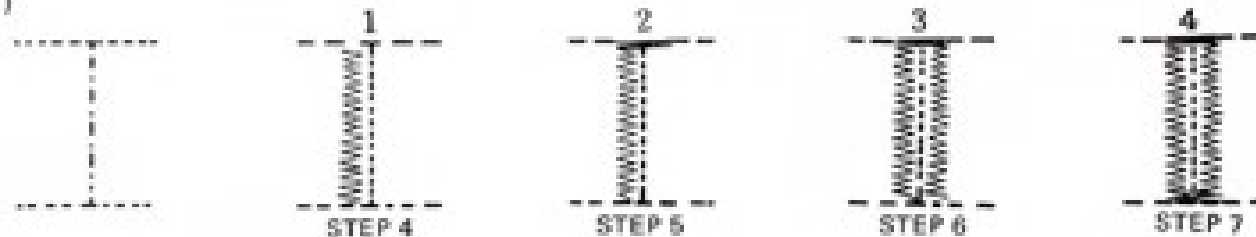


Fig. 37

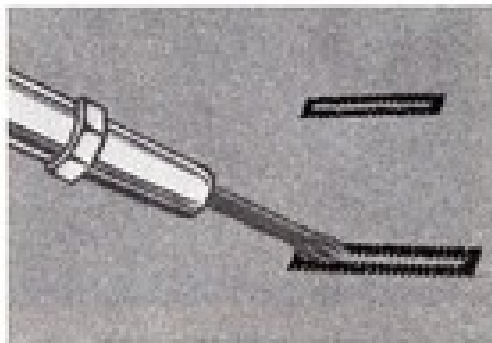


Fig. 38

Slit the button hole between the two rows of stitching with the button hole cutter or seam ripper. Be careful not to cut the stitching or the bar tacks.

If you plan to make button hole on sheer or soft material, place tarlatan or paper, which can be turn away after stitching under fabric.



## SEWING ON BUTTONS

- (1) Remove presser foot and replace with special purpose button sewing foot. (Fig. 37)
- (2) Push drop feed button "DOWN" down all the way.
- (3) Select "0" position on the zigzag width control dial and manual pattern ( $\frac{2}{3}$ ) on the decorative stitch pattern dial.
- (4) Place the button so that its left hole comes directly under the needle.  
Then gently lower the presser foot.
- (5) Turn the zigzag width control dial (produce a zigzag stitch) until the needle goes through the right hand hole of the button. Turn the hand wheel slowly by hand to be sure the needle clears both holes in the button. Correct width if necessary.
- (6) When needle goes into the center of each hole, run the machine at a medium speed, making five or six stitches, stopping with the needle in the left hole.
- (7) To lock the zigzag stitch and prevent ravelling, return the zigzag width control dial to "0" position and take a few stitches in the same hole. If you wish, you may place a rounded toothpick over the button between the two holes, and sew button to fabric in the regular way. Remove the toothpick and wind thread under button forming a shank. Fasten.  
Apply the above method to sew on buttons with four holes, hooks, snaps, etc.

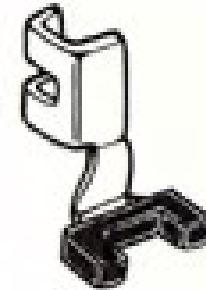


Fig. 39



Fig. 40

If a four hole button is to be sewn, follow the same procedure as above for the two hole button. Now lift presser foot slightly and move fabric to permit stitching the remaining two holes. Hooks, snaps, etc., are sewn to the fabric with the same procedure as for sewing the two hole buttons.



Fig. 41

### EMBROIDERING WITH A HOOP



Fig. 42

It is easy to follow a stamped design or to work free hand when embroidering or monogramming. (See Fig. 43) Release the pressure from the foot by pressing down the snap lock on the darning. Push the drop feed button marked "DOWN" down all the way.

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.

Should you encounter skipped stitches, the fabric is not stretched tight enough or a darning spring is needed.

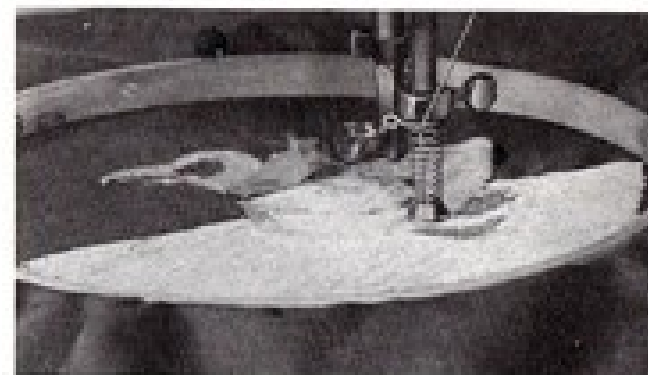


Fig. 43

## NARROW HEMMER

With needle at its highest position replace regular presser foot with narrow hemmer (Fig. 44) being sure to tighten it securely in place. Select straight stitch pattern (∴) by turning the decorative stitch pattern dial and set zigzag width control dial to "5" position for straight stitched hem. Set stitch length control dial to suit.



Fig. 44

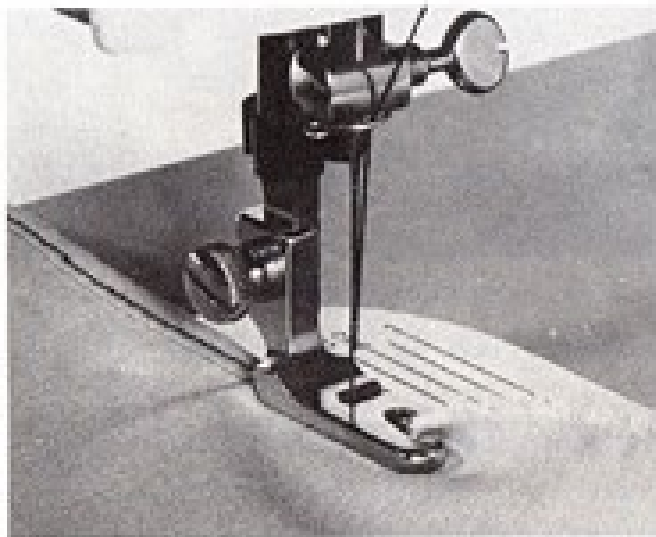


Fig. 45

For general hemming, cut the right corner of the material to be sewn diagonally, and prepare the material so that it can be rolled easily. Then insert it into the scroll of hemmer. Pull out the material to the point just beneath the needle, so that it can continue being rolled in the scroll. Then lower the presser bar and sew 2 or 3 stitches slowly and carefully, holding the beginning of the hem between your right thumb and forefinger and sew in order that the edge of material can be scrolled nicely by adjusting, and the sewing result will be as given in the illustration. Be careful not to feed too much or too little material into the hemmer. (Fig. 45)

When hemming and sewing on lace are required in one operation, proceed to make a hem in the same manner as explained above. Insert edge of lace or trimming (be sure the right side is down) into the slot on the right side of the hemmer. Make sure that the needle pierces it close to the edge just above the turned edge of the hem. Begin to stitch, leading the lace edge into the hemmer's slot with the right hand while guiding the material being hemmed into the scroll of hemmer with the left hand. To apply lace in the "French Manner," insert the fabric to be hemmed as for plain hemming, with the right side up. Insert the lace from the left, with the right side down, and put it on top of the fabric. Then put the lace and fabric combined into the hemmer and the hem can be made to enclose the lace edge in one stitching. (Fig. 46)

### SEWING BRAIDS

Remove the ordinary presser foot from the machine and attach the braiding foot. Introduce the braid through the small guide on the front side of foot. Set the decorative stitch pattern dial to "MANUAL PATTERN (M)."

Adjust the width of stitch and length of stitch to obtain such a covering of the braid as appears most desirable for the material you are sewing. Using same threads of contrasting colors will enhance the beauty of your braiding.



Fig. 46

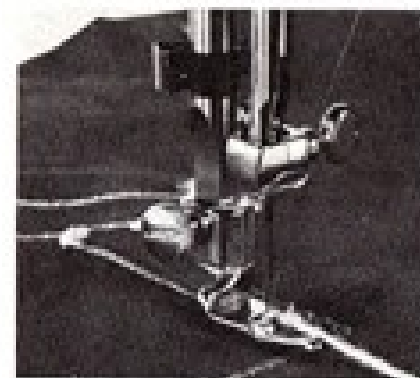


Fig. 47

## QUILTING GUIDE

Use this guide for making parallel rows of straight or zigzag stitching. Attach standard presser foot. Slip U shaped holder on guide under presser foot thumb screw from the back and tighten screw (Fig. 48). Adjust the curved bar for the distance desired between rows of stitches and set so it presses slightly on the fabric. By letting the guide ride on the previous stitching line, successive rows will be an equal distance apart. (Fig. 49)

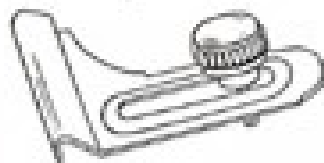


Fig. 50

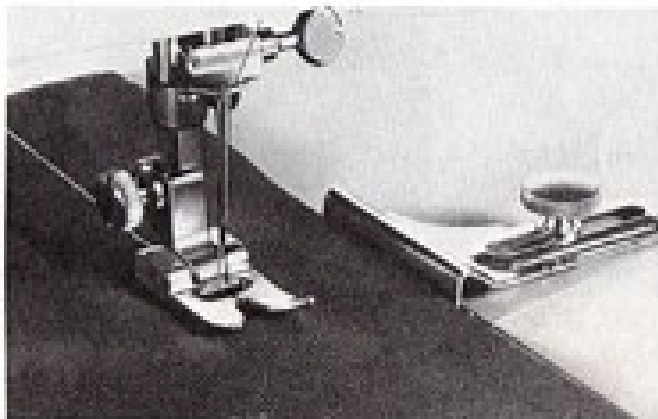


Fig. 51



Fig. 48

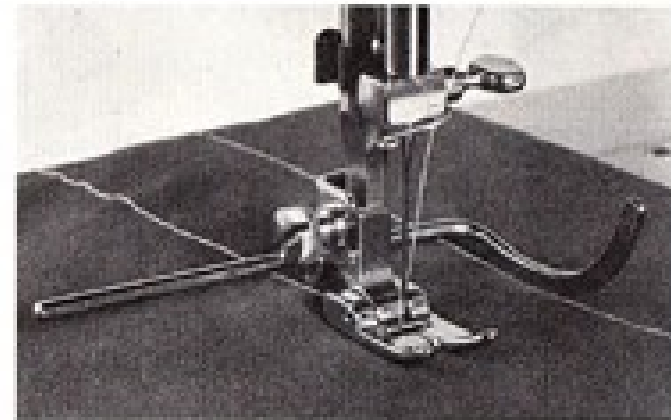


Fig. 49

## SEAM GAUGE ON CLOTH GUIDE

Use the seam gauge as a guide for straight seams and even rows of top stitching along edge of fabric. (Fig. 51)

Fasten gauge (Fig. 50) with accompanying screw in threaded hole in bed of machine. Adjust to desired width.

## 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. 52, 53).

To sew covered cord to material, reset adjustable foot so needle stitches closer to cord, and on edge of base fabric.



Fig. 52

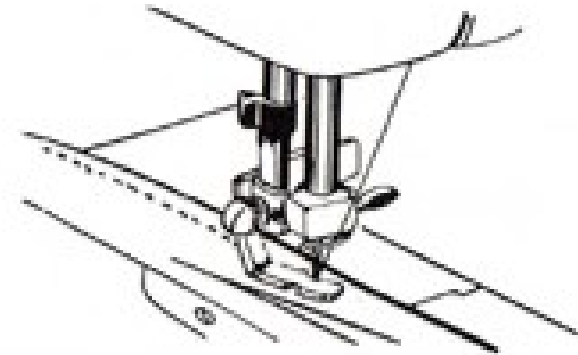


Fig. 53

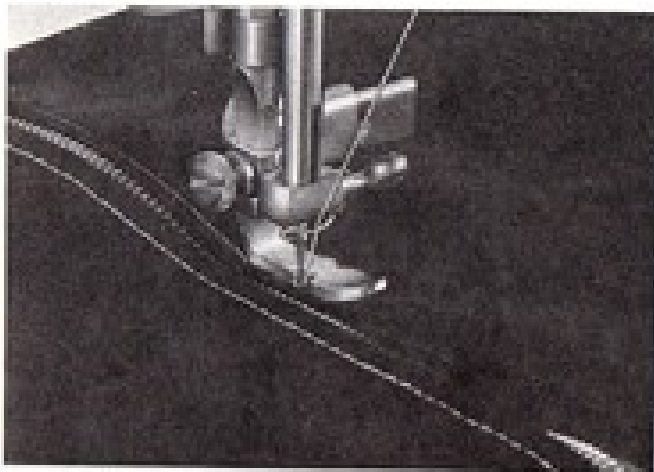


Fig. 54

### SEWING IN ZIPPER

Loosen thumb screw and slide foot so needle enters center of needle hole. Guide metal of zipper along edge of foot (Fig. 54). Stitching should be close to zipper to allow easy opening and closing. Adjust to sew from either right or left side, which ever is more convenient.

## CARE AND MAINTENANCE OF YOUR MACHINE

### HOW TO OIL 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. 55 turn hand wheel toward you until the take-up lever is at its lowest point.

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. 56.

To oil moving parts inside the face plate, which only rarely require oiling, open plate and oil at spots indicated in Fig. 57.

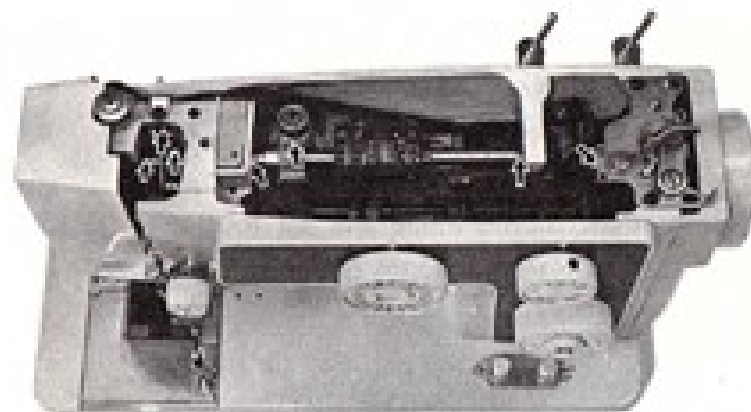


Fig. 55

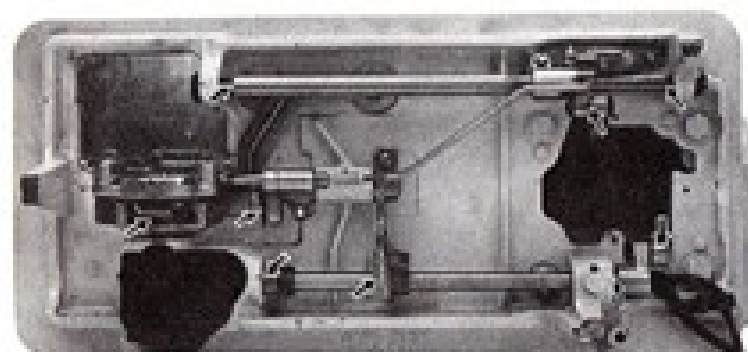


Fig. 56

## CLEANING AND OILING THE SHUTTLE



Fig. 57

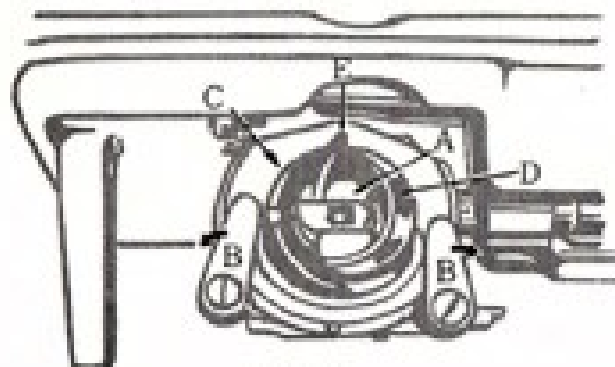


Fig. 58

The stitch forming mechanism occasionally becomes clogged with loose threads and lint.

This will interfere with the efficient operation of the machine.

Cleaning and removal of the lint will safeguard the performance. To remove the shuttle assembly, proceed as follows:

1. Turn the hand wheel until the needle reaches its highest position. Tilt head back on its hinges.
2. Remove bobbin case (A) Fig. 58.
3. Turn the two shuttle race cover clamps (B) outward and remove the shuttle race cover (C) and shuttle hook. (D)
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 hand wheel until the needle reaches its highest position.
2. Place shuttle hook, (D), against shuttle driver and adjust into position.
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. Put bobbin into bobbin case.
5. Put the bobbin case into the shuttle race, fitting tongue into notch (E) of race cover.



## ACCESSORIES

1. Large Screw Driver
2. Small Screw Driver
3. Buttonhole Cutter (Ripper)
4. Plastic Oiler (sealed and filled)
5. Felt Washers (for spool pins)
6. Bobbins
7. Needle Case (3 Straight 2 Twin)
8. Needle Case for Automatic Basting Needle
9. Straight Stitch Needle Plate
10. Quilting Guide
11. Cloth Guide & Thumb Screw
12. Embroidery Spring
13. Straight Stitch Presser Foot
14. Zigzag Stitch Hemmer Foot
15. Zigzag Stitch Braiding Foot
16. Button Sewing Foot
17. Buttonhole Foot
18. Zipper Foot



## CHECK UP FOR SMOOTH SEWING

Although your sewing machine is designed for maximum efficiency, should any of the following difficulties occur they can be remedied with minor adjustments.

### Upper Thread Breaks \_\_\_\_\_

- Be sure needle is inserted properly.
- Check on correct way to thread machine.
- Use correct needle size for thread.
- Do not have upper tension too tight.

### Lower Thread Breaks \_\_\_\_\_

- Check correct method of threading bobbin case.
- Be sure lower tension is not too tight.

### Needle Breaks \_\_\_\_\_

- Do not tug or pull on the fabric while sewing as this will bend and eventually break the needle.
- Be sure presser foot is firmly attached to bar.

### Skipped Stitches \_\_\_\_\_

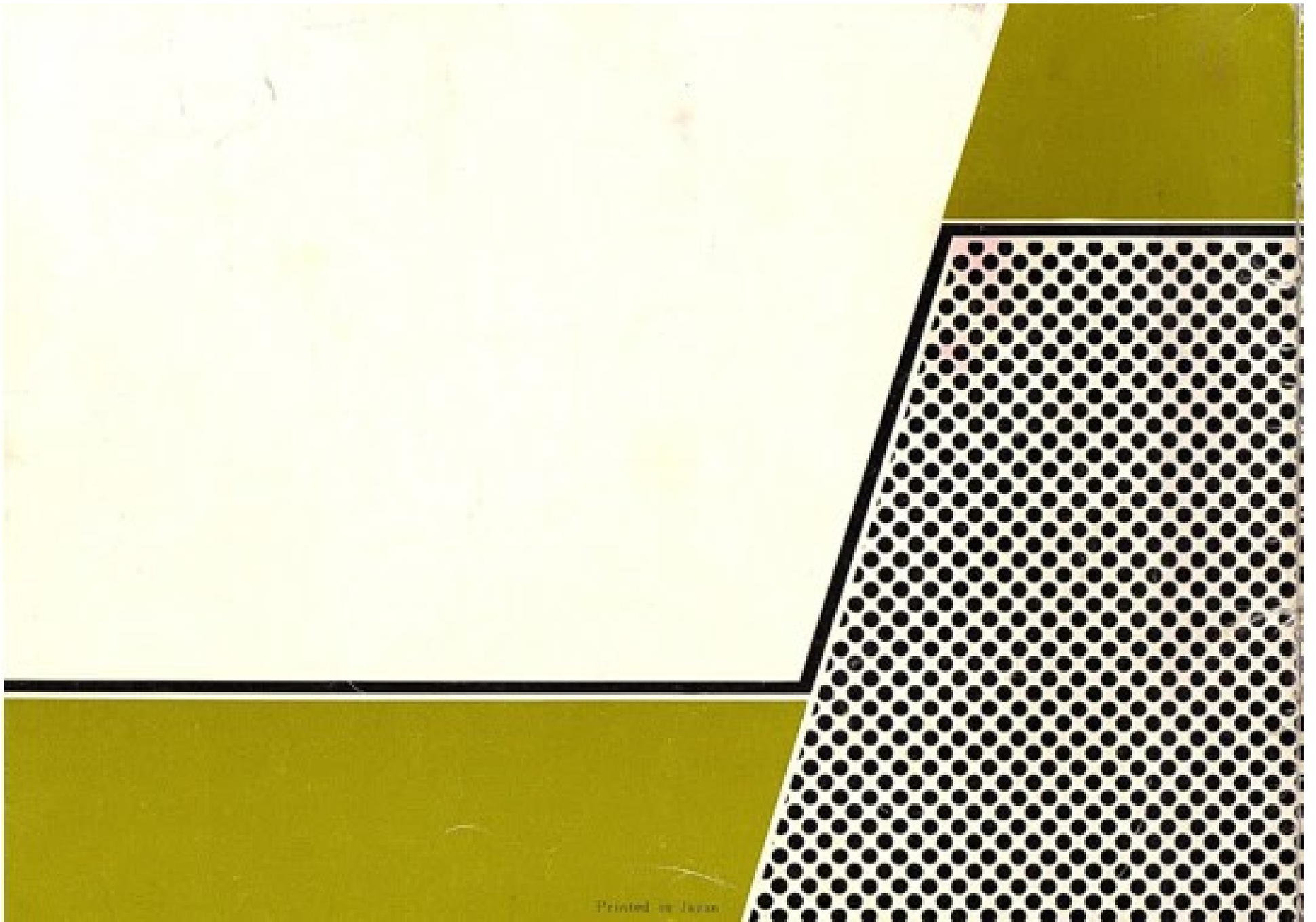
- Do not use a blunt or bent needle.
- Insert needle correctly.
- Use correct needle size for thread.
- Be sure pressure on foot is sufficient when sewing heavy fabrics.

### Stitches Loop \_\_\_\_\_

- Make sure tensions are properly balanced and that machine is threaded correctly.

### Machine Binds \_\_\_\_\_

- Clean thread, dust and lint from hook, shuttle and race.
- If condition continues, it may be that the machine is gummy with oil. Apply kerosene to oil holes, run rapidly for a while, and wipe dry. Then lubricate again with fine sewing machine oil.



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