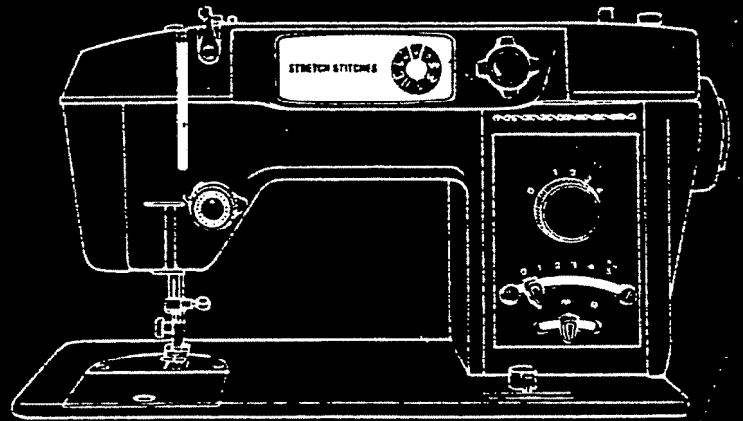


WHITE

SEWING MACHINES

**OWNER'S
MANUAL**

MODEL 935



wonderfully simple— simply wonderful

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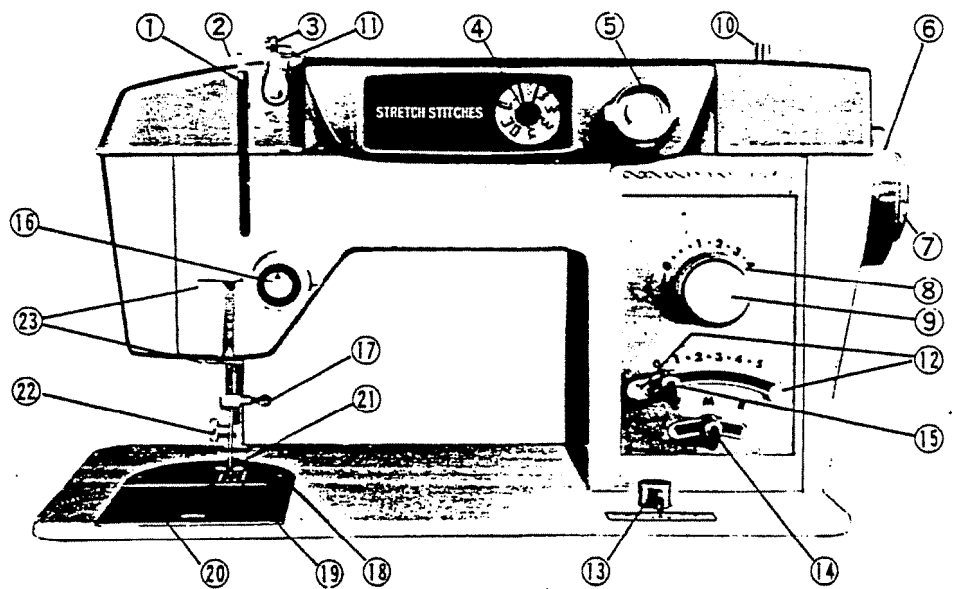


Fig. 1

- 24. Spool Pins
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- 26. Presser Bar Lifter
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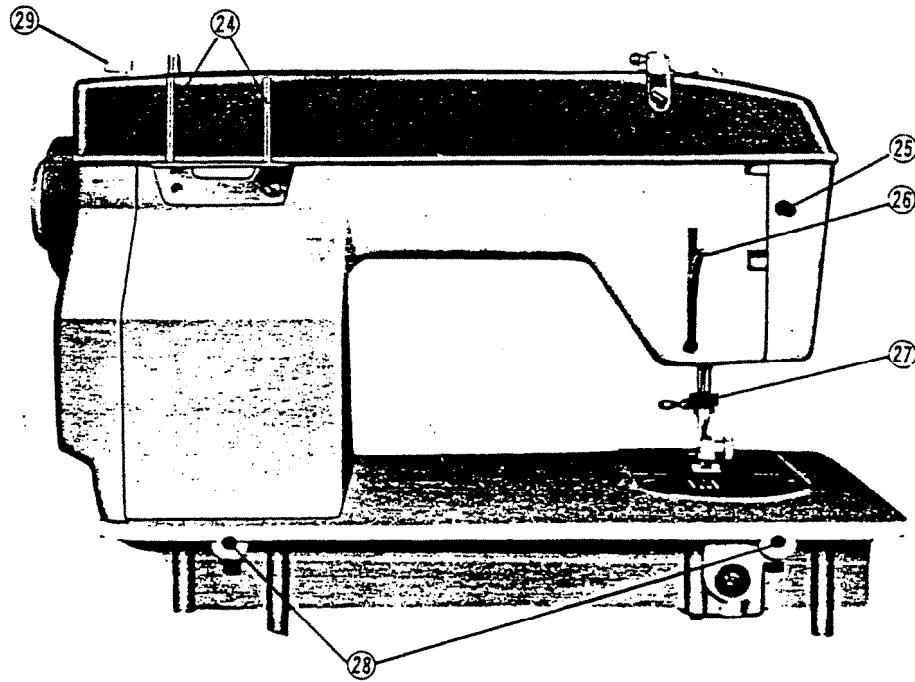


Fig. 2

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.	4	6 to 8	10 to 30	Heavy Duty	
Heavy upholstery fabric, ticking, denim, leatherette	3	8 to 10	30 to 40	Heavy Duty	
Medium heavy drapery fabric, velveteen, suiting, felt, terry, etc.	2	10 to 12	40 to 60	Heavy Duty	
Medium broadcloth, percale, gingham, linen, chintz, taffeta, sheer wool, shantung, etc.	1	12 to 14	60 to 80	50	A
Sheer voile, lawn, dimity, crepe, handkerchief linen, Plastic film, etc.	0	14 to 16 (Plastic film) 8 to 10	80 to 100	50	A
Very sheer chiffon, batiste, lace, organdy, nixon, net, marquisette, etc.	00	16 to 20	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. 3).

Place a spool of thread on the spool pin "A" (Fig. 4). Hang the thread from the right side of the bobbin winder thread guide "B" (Fig. 4). Wind the end of the thread around an empty bobbin seven or eight times and put the threaded bobbin on the spindle "C" (Fig. 4) 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. 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 automatically 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 the balance wheel.

If the bobbin winds unevenly, adjust bobbin winding tension disc "B" up or down by loosening the screw. When disc is in proper position, tighten screw.



Fig. 3

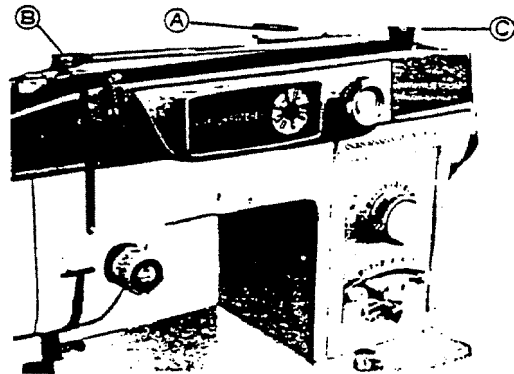


Fig. 4

THREADING THE BOBBIN CASE

- Step 1 : Hold bobbin case between thumb and forefinger of left hand so that the slot in the edge of the bobbin case is on top (Fig. 5).
- Step 2 : Take the bobbin between thumb and forefinger of right hand so that the thread on the bobbin leads from left to right and extends about four inches from the bobbin (Fig. 5).
- Step 3 : Insert bobbin into the bobbin case. Pull thread into slot in edge of case (Fig. 7) and draw it under the tension screw (Fig. 6).

Note: For best sewing results use only evenly wound bobbin.

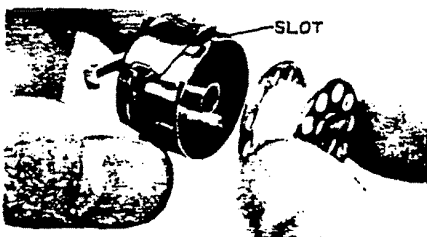


Fig. 5

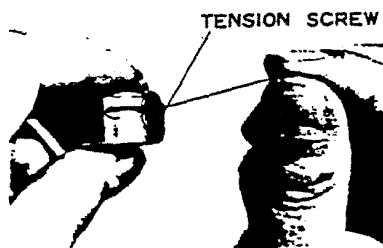


Fig. 6

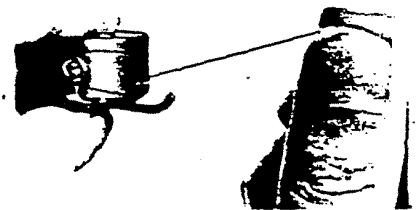


Fig. 7

SETTING THE NEEDLE

See Fig. 8 — raise the needle bar "A" to its highest point by turning hand wheel toward you by hand.

Loosen needle clamp screw "B" to remove the needle or insert a new one.

Place needle (flat side to the back) in the needle clamp and push it upward as far as it will go, tighten clamp screw securely using 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.

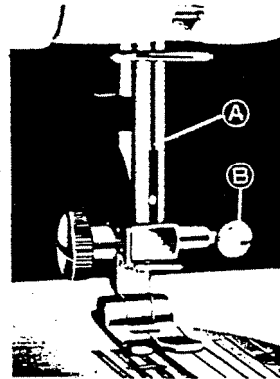


Fig. 8

FLAT
SIDE OF
NEEDLE

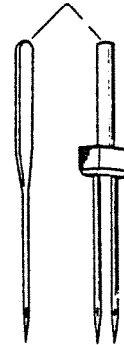


Fig. 9

- Note: (1) Never use a bent needle or one with a blunt point as this will cause imperfect and skip stitches.
(2) The size of the needle should conform to the size of the thread and material used (See chart — Page 4)
(3) For best results change needles frequently.

PLACING BOBBIN CASE IN MACHINE

Raise needle bar to highest position, and open cover plate. (See 20 Fig. 1) Hold the bobbin case latch "D"(Fig.10), 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 left. Insert and center the bobbin case on the stud of the shuttle body "C". Be sure the bobbin case finger is opposite the shuttle race notch "A".

Press the bobbin case "B" into the shuttle as far as possible until latch catches on the center post of the shuttle. Then release the bobbin case latch, "D". Press bobbin case again after latch has been released to make sure the bobbin case is locked securely.

Close the cover plate.

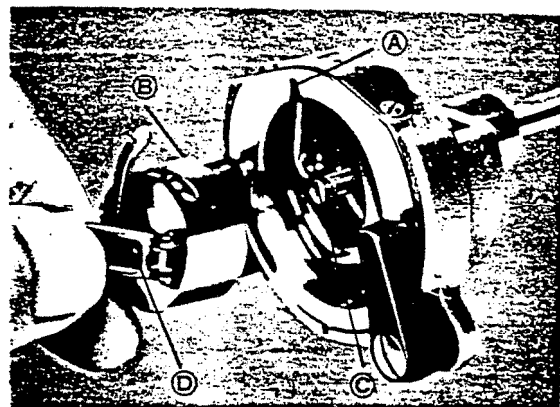


Fig. 10

UPPER THREADING

- (1) Turn hand wheel toward you to raise the take-up lever "E" (Fig. 11-A) and needle to their highest positions.
- (2) Place spool of thread on spool pin.
- (3) Lead thread through rear and front arm thread guides "A"
- (4) Down and between tension discs "B" from right to left and up and over hook "D" (Fig. 11-B)

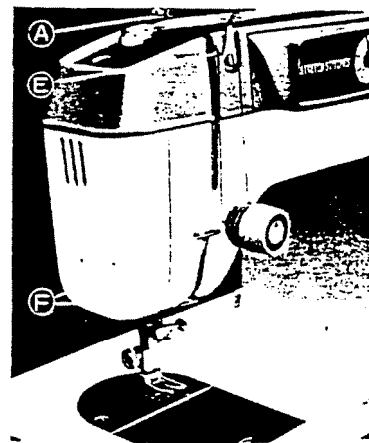


Fig. 11-A

- (5) Lead thread up and through take-up eye from right to left.
- (6) Down and between thread guide "F".(Fig. 11-A)
- (7) Into needle bar thread guide "C" (Fig. 11-C) and through the needle from front to back.

Hold the end of the upper thread loosely, and turn hand wheel toward you until the needle goes all the way down and comes back up. Loop (Fig. 12) will be formed over the upper thread which can be pulled out straight. Place both thread ends under the presser foot and draw toward the back of the machine, leaving both threads about three or four inches long.

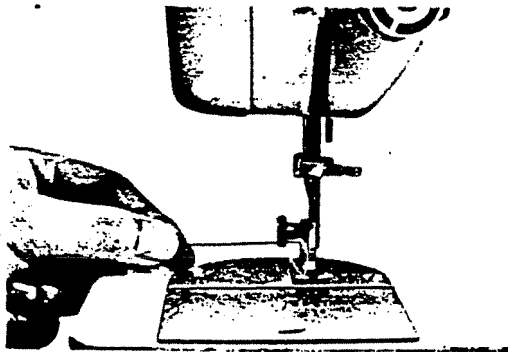


Fig. 12

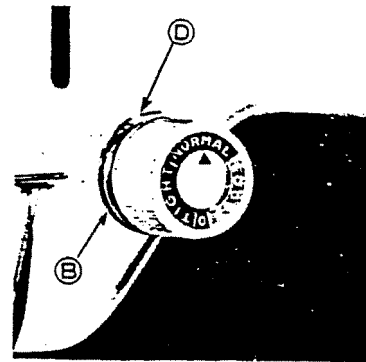


Fig. 11-B

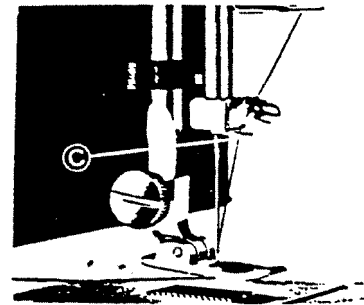


Fig. 11-C

SETTING THE STITCH LENGTH

The length of the stitch is regulated by dial "A" (Fig. 13) Near 0 is the shortest stitch and 4 is the longest, but the dial may be set at any spot between the markings for a variety of lengths. Turn the dial to the right to lengthen and to the left to shorten the stitch. The pointer indicates this number selected.

See chart below for stitches per inch.

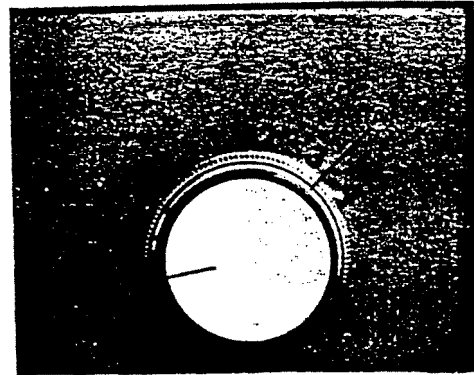


Fig. 13

STITCH LENGTH CHART (APPROXIMATE)

Figures on indicator	0	1	2	3	4
Number of stitches per inch	No Feeding	30	24	12	6

SEWING IN REVERSE

When you wish to sew backward to tie the threads at the beginning or end of a seam, press the reverse button "B" (Fig. 13) in as far as it will go. The machine will sew backward as long as the button is held in.

DECORATIVE STITCH CONTROL

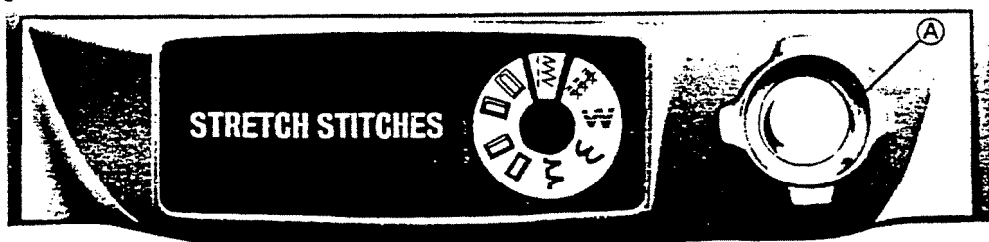


Fig. 14

Your machine is equipped to produce the most practical stitches available today.

Select them as follows:

- (1) Take up and needle bar at their highest positions.
- (2) Turn selector knob "A" (Fig. 14) clockwise (to the right)
- (3) "Z" position creative embroidery
- (4) Buttonholes - made in various sizes and length without turning the material.
- (5) Blind hem - this will save you many hours of tedious hand work
- (6) Scallop design - for decorative use
- (7) Multiple zigzag stitch - for sewing stretch fabric - sewing elastic and hundreds of other uses.
- (8) Stretch stitch - for sewing the knits, over casting, reinforced straight stitch and hundreds of other uses.

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. 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.

HOW TO SEW

Straight stitching

Set your machine as follows:

Needle position	: "M" position
Pattern selector dial	: "Z" position
Zigzag width lever	: "O" position
Stitch length dial	: To suit material being sewn
Needle plate	: Zigzag or Straight stitch
Presser foot	: Zigzag or Straight stitch

Note: For straight stitching on fine fabric or very soft materials, it is advisable to use the *straight stitch needle plate* and the *straight stitch presser foot* which are included in your accessory box.

REMOVING THE WORK

Be sure to stop the machine when the thread take-up lever and needle bar are at the highest position. Now raise the presser foot and draw the fabric back and to the left, Fig. 15 and 16, 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.

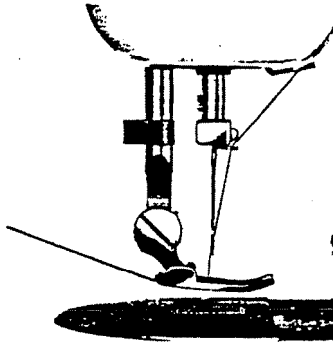


Fig. 15

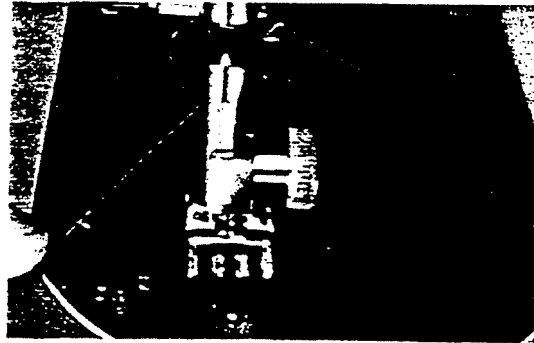


Fig. 16

TENSION CONTROL

For perfect stitching, the tension on the upper and under threads should be equal, and just sufficiently strong to lock both threads in the center of the work. (Fig. 17)

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, making an imperfect stitch. (Fig. 18)

If the tension of 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, making an imperfect stitch. (Fig. 19)



Fig. 17

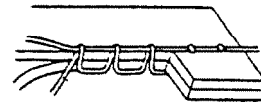


Fig. 18.



Fig. 19

Note: For perfect stitching on various materials, different tension settings are required. See chart below for approximate setting

Materials	Thread tensions
Light fabrics, silk, organdy, tricot, etc	rather LOOSE
Lace	NORMAL or rather TIGHT
Jersey, knit goods, etc.	rather LOOSE
Fur, back skin, etc.	rather TIGHT
Velveteen	rather LOOSE
Medium fabrics, cotton, linen, etc.	NORMAL

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. 20) to the right. To decrease, turn to the left.

Before adjusting lower tension be sure that the machine is threaded properly. When necessary to change the bobbin tension, turn small screw (Fig. 21) on side of the bobbin case clockwise to tighten, counterclockwise to loosen.

When the upper 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 on the fabric (Fig. 19).

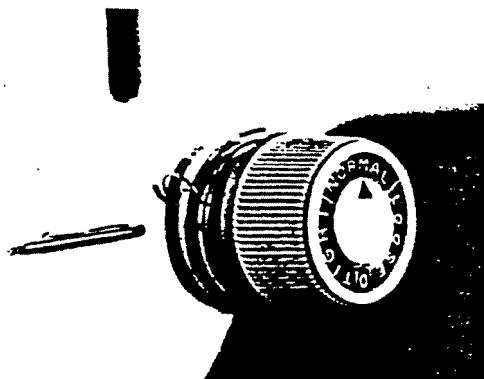


Fig. 20

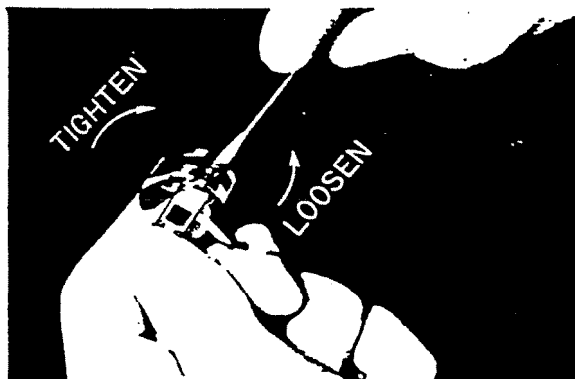


Fig. 21

ZIGZAG STITCHING

Be sure zigzag needle plate and zigzag presser foot are in place.

- (1) Set needle position lever at "M" position (Fig. 22)
- (2) By moving the zigzag width lever "A" (Fig. 22) gradually to the right, it will produce zigzag stitches of ever increasing width. To maintain selected widths of zigzag stitches, employ locks "B" (Fig. 22).
- (3) Left lock determines the minimum width stitch, while right lock controls the maximum. Locks can be set by pressing in slightly and moved to the desired position.

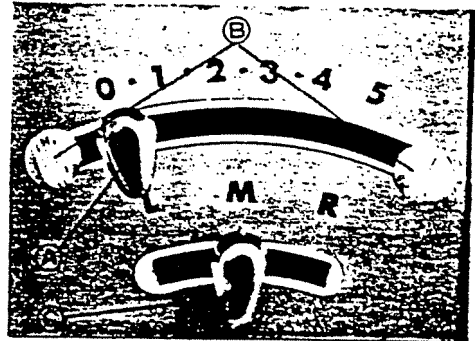


Fig. 22

NEEDLE POSITION CONTROL

The needle should be at its highest point when adjusting needle position, to avoid tearing the fabric or bending the needle.

Select needle position by pressing down slightly on control "C" (Fig. 22) and move to desired position.

L— Position for
buttonholes
sewing on buttons
decorative stitch designs

M— Position for
straight stitching
decorative stitch designs
twin needle sewing

R— Position for
blind hemming
decorative stitch designs

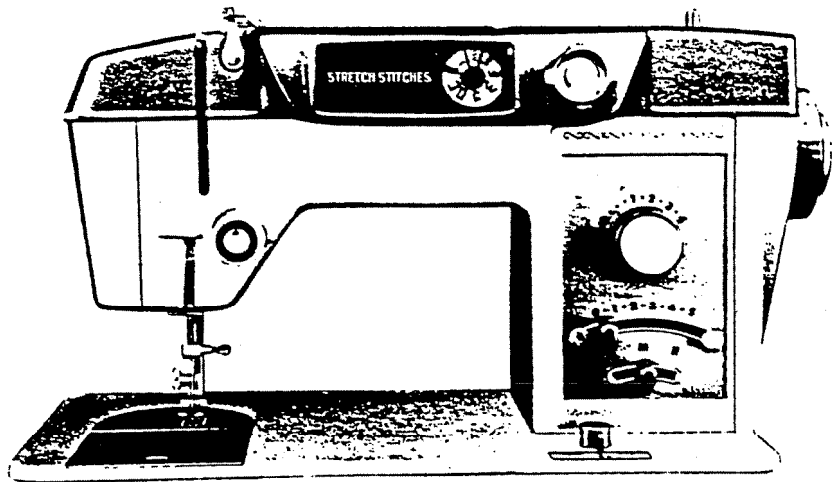


Fig. 23

CREATIVE EMBROIDERY

The satin stitch (Fig. 24), which is really just a very short zigzag stitch, and is the basis for 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 "0" to "5" for single needle work.



Fig. 24

EMBROIDERY PATTERNS

With the machine set for a short stitch length, different designs can be made by swinging the stitch width lever "A" (Fig. 22) between "0" and "5" or any combination of widths. Try setting the locks at "1" and "5", "2" and "5", etc. Set a rhythm for yourself and then proceed. After a while you will become quite skillful, varying your designs by stitch length and width and the manipulation of lever "A" (Fig. 22). Always run the machine at a uniform speed whether fast or slow.

SAMPLE EMBROIDERY PATTERNS

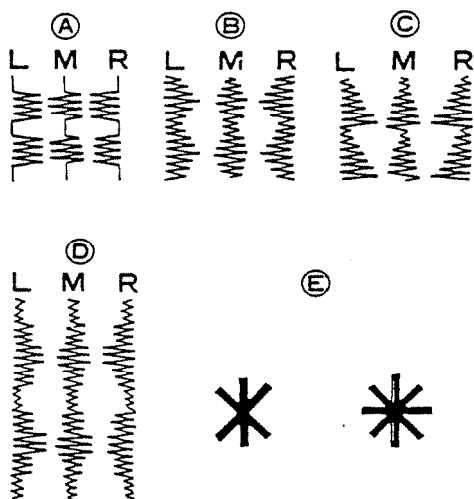


Fig. 25

- A - Sew a few stitches at "4" width, then quickly move lever back to "0" for a short period.
Count, if necessary, to establish a rhythm.
- B - Set width locks at "2½ and 5" then move lever slowly between setting, operating machine rather fast.
- C - Set width locks at "1" and "5" gradually move lever from 1 to 5, then snap it back quickly to "1".
- D - Set width locks at "1" and "4-1/2", operate machine at moderate speed. Stitch at "1" while you count "1, 2, 3". Then stitch at "2-1/2" and "4-1/2" for the same count. Return to "2-1/2" and "1", repeat.

Set Drop Feed Control Lever at "DOWN" position, lock stitch width at "5", take 3 or 4 stitches, leave needle in fabric left side of stitches. Pivot fabric on needle to make next daisy petal. Continue until flower design is complete. Lock threads by setting stitch width at "0" and taking 3 or 4 stitches in center of design.

MANUAL OPERATION

Be sure standard zigzag presser foot and zigzag needle plate are in place and machine is set for manual operation. Use for:

OVERCASTING WORN EDGES

Zigzag stitch along the worn edges, catching the fabric as the needle swings to the left, and allowing the needle to just pass over the edge of the fabric on the right (Fig. 27).

PATCHING

Machine bastes patch into place by placing fabric under hole or worn area which has been cut away. Then zigzag stitch the patch into place by overcasting around edge of hole.

APPLIQUE

(Fig. 26) Baste design to fabric and zigzag stitch following the shape of the design outlining it entirely and remove excess material on the outer edge by trimming it away after stitching. (Fig. 28) Baste design to fabric and overcast a zigzag stitch around the design outlining it entirely. Hundreds of other uses will become apparent as you continue to use the machine. Try the multiple zigzag stitch for these operations. Also, for best results set speed control slower when sewing around contours and faster for straight lines.

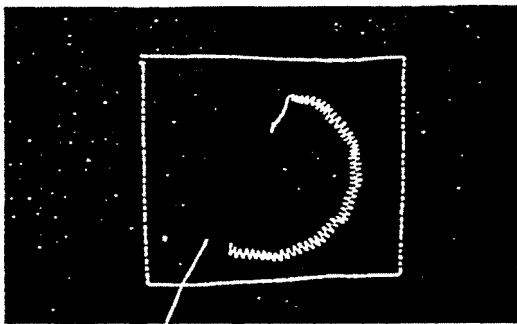


Fig. 26

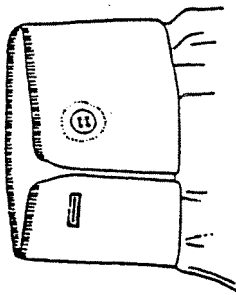


Fig. 27

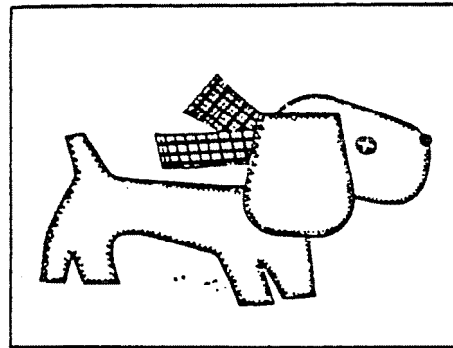


Fig. 28

TWIN NEEDLE - UPPER THREADING AND SEWING

1. Be sure zigzag needle plate and zigzag presser foot are in place.
2. Use only middle needle position.
3. Follow threading instructions for single needle with these exceptions:
 - A - Place thread, matching or contrasting in color, on both spool pins.
 - B - Pass threads through arm thread guide.
 - C - Down around tension discs with one thread passing between the back discs and the other between the front discs.
 - D - Now treat both threads as one, until you reach the needle eye.
 - E - Pass one thread through each needle eye.
4. Set right hand zigzag width stop between 2 and 3 (at left hand side) zigzag lever in red number will break needle.
5. Straight stitching and decorative stitch designs can be produced in the same manner as followed for single threading.

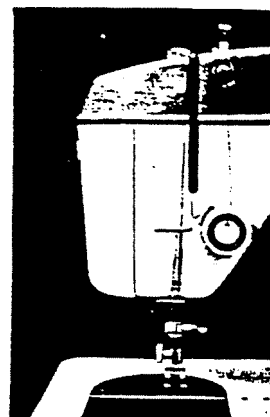


Fig. 29

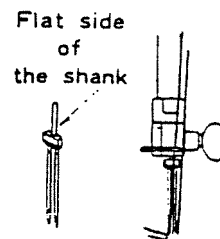
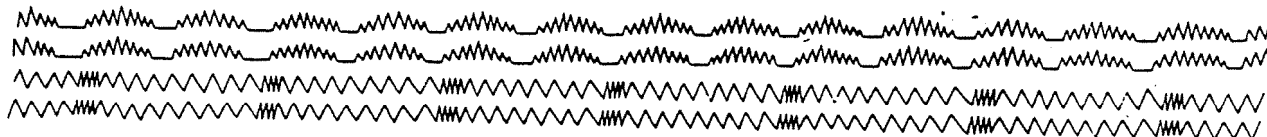


Fig. 30



FABRIC SELECTOR

The feed can be regulated for various materials and types of sewing by the use of a fabric selector knob. Their positions are:

- "HIGH" :For straight or zigzag sewing with ordinary materials.
Normal setting.
- "LOW" :For fine materials such as silk, nylon, or rayon, etc.
- "DOWN" :For embroidery or button sewing only.

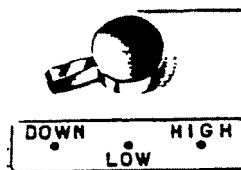


Fig. 31

PRESSURE CONTROL BY DARNER

This darner allows you to adjust the pressure on the presser foot from strong to very light and serves, with the fabric selector, as an aid to perfect darning, embroidery, applique or other work that requires you to control the direction of the stitch independently of the feed action.

For ordinary family sewing, it is seldom necessary to change the pressure, however, when sewing on fine silk or flimsy material a lighter pressure will help also the same thing applies when sewing on the knits etc., and one of the pieces of material being sewn together ends up longer than the other.

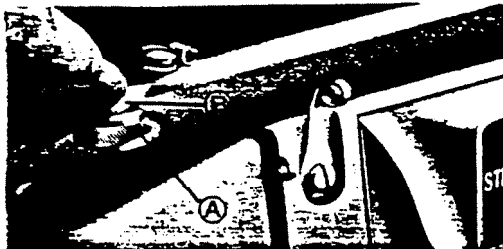


Fig. 32

To adjust

Press lock ring "A" (Fig. 32) down which will allow "B" to snap up into the darning position.

Press cap "B" down only as far as needed to obtain desired pressure.

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.

EMBROIDERY AND MONOGRAMMING

Set your machine as follows:

Needle position	: "M" position
Pattern indicator	: "Z" position
Stitch length dial	: "0"
Zigzag width lever	: between "0" and "5"
Fabric selector	: "DOWN"
Presser foot	: foot or nothing
Needle plate	: Zigzag
Pressure of darning	: Released

The technique is somewhat like having a stationary pen and moving the paper beneath it in drawing, and with little practice, you will be able to embroider as well as you can draw or trace with paper and pen.

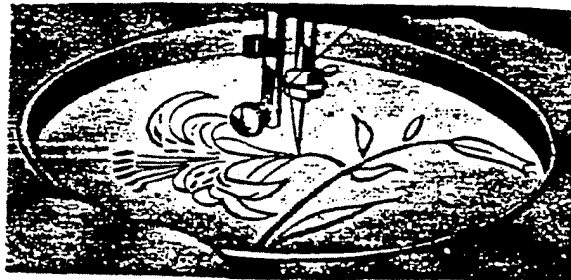


Fig. 34

Note: To do a good embroidering job, the tension of the thread is very important. Try to maintain the tension of the needle thread coming out on the surface.

MENDING STITCH

Set your machine as follows:

Needle position	: "M" position
Pattern indicator dial	: "Σ" position
Stitch length dial	: "O" position
Zigzag width lever	: "O" position
Fabric selector	: "DOWN"
Presser foot	: Embroidery foot or Zigzag foot
Needle plate	: Zigzag
Pressure of darning	: Released

- Note:
- 1) Use a fine thread of same color as the material.
 - 2) In mending of knit goods, it is better to use a fine yarn for the lower thread.
 - 3) For best results use the embroidery hoop.

Procedures of mending materials

- 1) At first begin to sew according to the warp toward and away from you across the broken part. (Fig. 35)

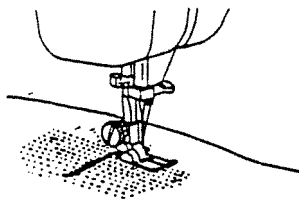


Fig. 35

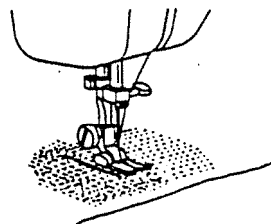


Fig. 36

- 2) Then sew according to the woof across the broken part. (Fig. 36)

BUTTONHOLES

Set your machine as follows:

Needle position	: "M" position
Pattern indicator dial	: "□" ("□" "□" "□" "□" "□")
Stitch length dial	: near "0" as possible without stopping the feeding action
Zigzag width lever	: depends on the width of buttonhole. ("5" for the widest)
Fabric selector	: "HIGH"
Presser foot	: Buttonhole foot (Fig. 38)
Needle plate	: Zigzag

Various widths and lengths can be made automatically by turning the dial (Fig. 1)

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. 39).

The width of the buttonhole sides are governed by the material used. Set zigzag stitch width control on number 5 for thick material and a lower number for thin material.

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

1. Replace presser foot with special purpose buttonhole foot. This provides maximum visibility and allows closely spaced stitches to feed evenly. (Fig. 38).

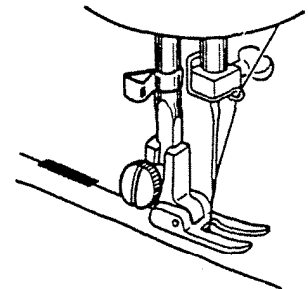


Fig. 37



Fig. 38

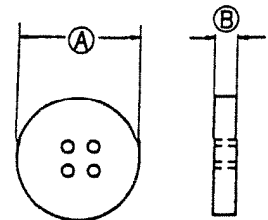


Fig. 39

2. Set needle in middle position(14, Fig. 1).
3. Set zigzag stitch width control(15, Fig. 1) to suit material being sewn or width of buttonhole desired (number 5 for the widest buttonhole).
4. Set stitch length control (8, Fig. 1) as close to 0 as possible without stopping the feeding action.
5. Set buttonhole control (5 Fig. 1) to sew bar tack Step "A" lower needle carefully into mark on fabric indicating the end of the buttonhole. Lower presser foot and sew 4 or 5 stitches.
6. With the needle out of the cloth turn buttonhole control to Step "B" (left hand side) sew entire length of buttonhole (reverse stitching).
7. With the needle out of the cloth turn buttonhole control to Step "C" sew 4 or 5 stitches (bar tack).
8. With the needle out of the cloth turn buttonhole control to Step "D" (right hand side) sew entire length of buttonhole (forward stitching).
9. To lock the stitching and prevent ravelling, set zigzag width control (15 Fig. 1) at 0 and take 3 or 4 stitches.
10. Cut the buttonhole opening with a seam ripper being careful not to cut the stitching.

Note: Although buttonholes can be made with most any threads size 50 mercerized are recommended for best results. If you plan to make buttonholes on sheer or soft material, place tarlatan or paper under fabric which can be torn away after stitching.

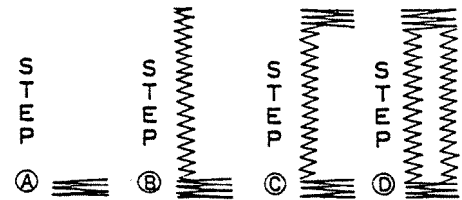


Fig. 40

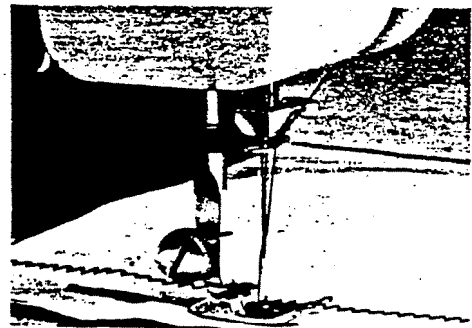


Fig. 41

SEWING ON BUTTONS

Set your machine as follows:

Needle position	: "L" position
Pattern indicator dial	: "Z" position
Stitch length dial	: "0" position
Zigzag width lever	: depends on the pitch of button holes. "5" is the widest.
Fabric selector	: "DOWN"
Presser foot	: "Button sewing foot"
Needle plate	: "Zigzag"

- (1) Place the button so its left-hand hole comes directly under the needle then gently lower the presser foot.
- (2) Move zigzag width lever to the right until the needle comes down exactly over the right-hand hole in the button.
- (3) Move left-hand zigzag width stop lock to hold lever in place. Turn the hand wheel slowly by hand to be sure the needle enters both holes in button without deflecting needle. Correct width if necessary.
- (4) When needle goes down into the center of each hole run the machine at medium speed, making six or eight 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 you may 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 the button, forming a shank fasten.

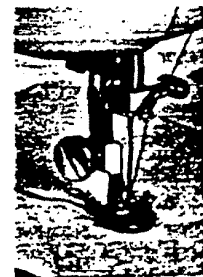
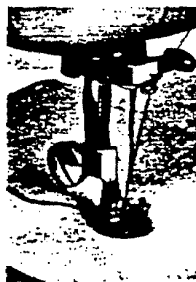


Fig. 42


STRETCH STITCHING

Over the last few years, new stretch fabrics have been brought out at an increasing rate. These fabrics such as knits, jerseys, etc., must be sewn using a stretch stitch or the fabric will not stretch.

Your machine comes equipped to do this work.

Multiple zigzag stitch

Set your machine as follows:

Needle position	: "M" position
Pattern indicator dial	: "  " position
Stitch length dial	: between "0.5" and "4"
Zigzag width lever	: between "3" and "5"
Fabric selector	: "HIGH"
Presser foot	: "Zigzag"
Needle plate	: "Zigzag"

This stitch can be used for over casting an edge to prevent fraying, applying elastic waist bands to skirts and dresses. Be sure to stretch the elastics as it is being applied to insure fullness required in the garment.

When sewing a zigzag stitch on soft or sheer material it will prevent puckering.

There are hundreds of other uses which will become apparent as you use your machine.

The over lock stretch stitch (triple seam stretch stitch)

This newly developed ultra-stretch stitch is used for the final seams, because it sews and overcasts in one operation. Especially, delicate fabrics are kept firm by this stitch.

Set your machine as follows:

Needle position	: "L" position
Pattern indicator dial	: "X" position
Stitch length dial	: "4"
Zigzag width lever	: "5"
Fabric selector	: "HIGH"
Presser foot	: Zigzag
Needle plate	: Zigzag

For sewing a straight seam that will stretch set zigzag width control at 0. (*triple seam*)

This stitch is used in any area of the garment that needs to be reinforced and will stretch generally more than the fabric used.

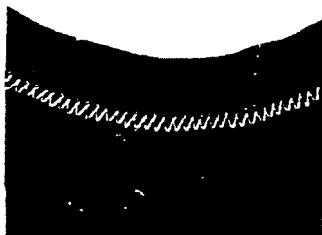


Fig. 43

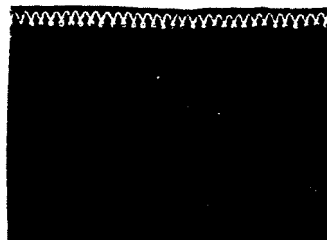


Fig. 44

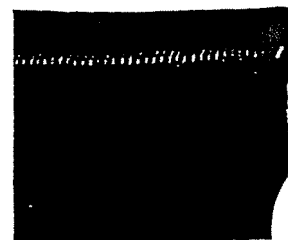


Fig. 45

In a neat casing, stretch fabrics maintain their full stretch and, in addition, the ultra-stretch stitch produces attractive decorative patterns.

BLIND HEM

Set your machine as follows:

Needle Position	: "R" position
Pattern indicator dial	: "<" position
Stitch length	: Number "2" or "3" position
Zigzag width control	: To suit material being sewn
Fabric selector	: "HIGH"
Presser foot	: Zigzag
Needle plate	: Zigzag

The blind hem stitch provides a durable hem finish that is almost invisible and comparable to hand sewing.

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

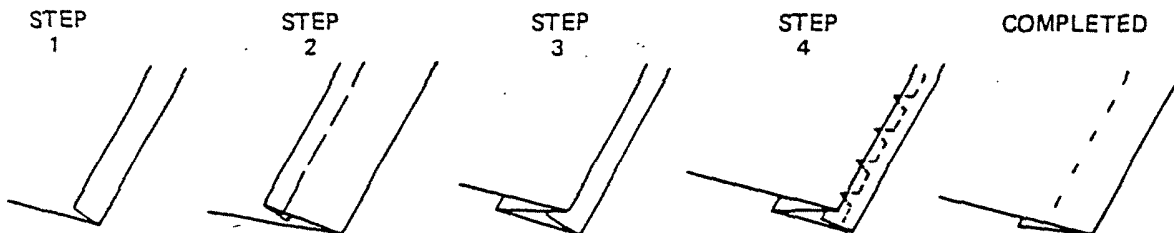
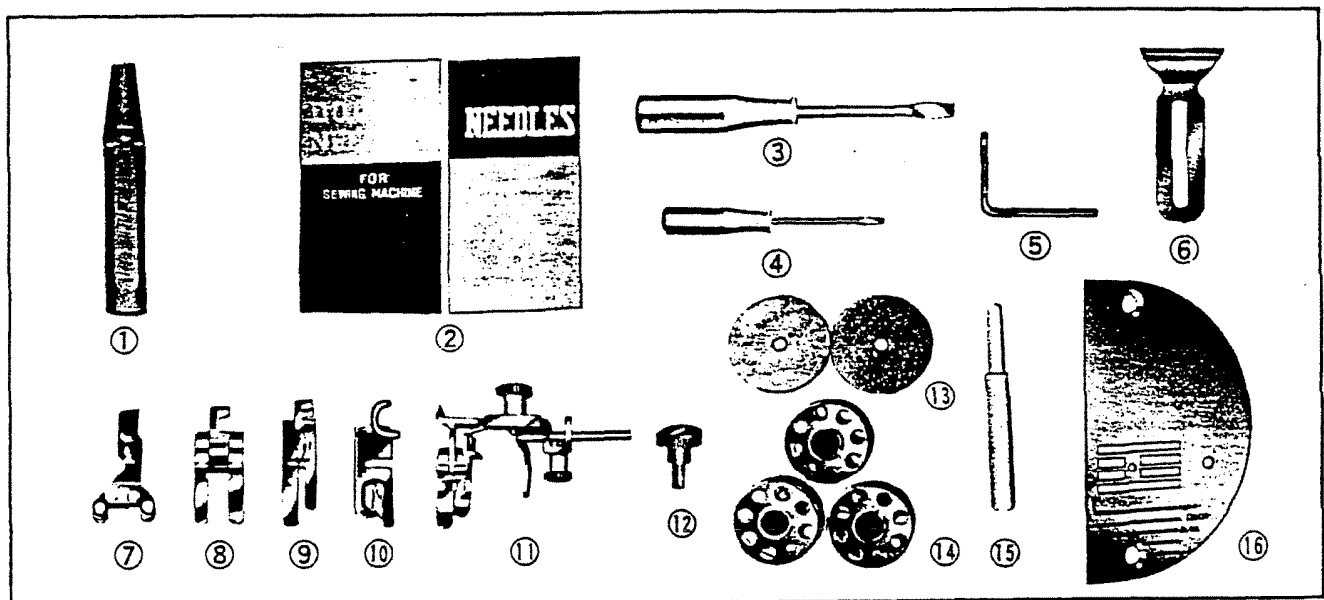


Fig. 45A

- Step 1. (Fig 45A) If hem with folded edge is used make first fold 3/8" deep.
- Step 2. Turn hem to the depth desired and baste 1/4" from upper edge. Press in place.
- Step 3. Fold hem back toward right side of garment leaving 1/4" extended.
- Step 4. Place material under presser foot, sew with stitch length set to suit material being sewn and make a side wise stitch about every 3/4 of an inch of sewing.

ACCESSORIES



- 1 Plastic Oiler (sealed and filled).
- 2 Package of Needles (5 Straight, 1 Twin).
- 3 Large Screw Driver.
- 4 Small Screw Driver.
- 5 Quilter Guide.
- 6 Cloth Guide.
- 7 Button Sewing Foot.
- 8 Buttonhole Foot.

- 9 Presser Foot for Straight Sewing.
- 10 Narrow Hemmer.
- 11 Cording & Zipper Foot.
- 12 Thumb Screw.
- 13 Felt Washers (2) (for spool pins).
- 14 Bobbine (3)
- 15 Seam Ripper
- 16 Needle Plate for Straight Sewing

HOW TO USE ACCESSORIES

NARROW HEMMER

With needle at its highest position replace regular presser foot with narrow hemmer (Fig. 46) being sure to tighten it securely in place. Set pattern selector dial at manual position, needle positioning control center, zigzag stitch width control at "0" for straight stitched hem or at number 3 for zigzag stitched hem. Set stitch length control to suit. For a plain narrow hem make a 1/8 inch double fold for about two inches along edge of fabric. Hold each end of the two inch fold and slip underneath hemmer. Bring fold up into the scroll of HEMMER draw fabric forward to end and fasten with needle point. Lower presser bar lifter. Gently pull end of thread as you start stitching (Fig. 47)

Guide material slightly to left and it will take a double turn through scroll. The narrow hemmer provides an excellent finish for edges of ruffles or any other dainty work.

LACE TRIMMED HEM

To sew a narrow hem and attach lace in one stitching, insert lace in the slot next to needle (Fig. 50). Sew hem as above, guiding lace under needle and hem into scroll. Rick-rack may be used in the same way.

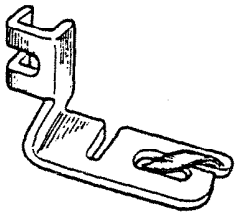


Fig. 46

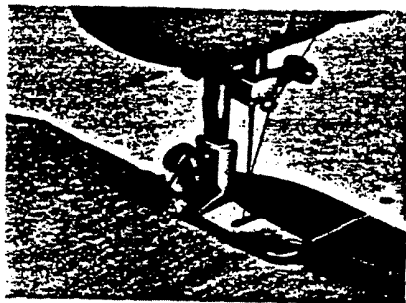


Fig. 47

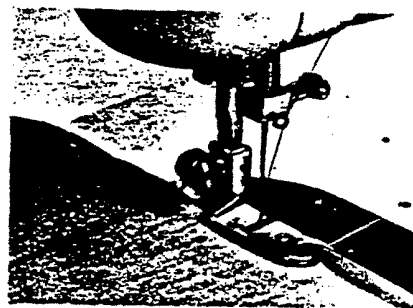


Fig. 48

LACE EDGE WITH INVISIBLE STITCHING

Hold lace 1/8 inch from raw edge on right hand side of fabric, insert both in scroll as for plain narrow hem (Fig. 51); let hem roll over and sew in lace. When the stitching is completed, the hem is pressed to the wrong side.

FRENCH SEAM

Place material with right sides facing each other and the top piece of material 1/8 inch from right hand edge of lower piece. Insert in hemmer scroll allowing hem to roll over and sew in top fabric making French seam. For cording effect use zigzag stitch wide enough to catch both edges of the narrow rolled hem and sew with satin stitch. This can be used for covering chairs and so forth. (Fig. 52).

HEMMING ACROSS A SEAM

To hem across a seam, cut the seam folds at an angle so they will lead into the hemmer gradually. Press seam open. Stitch across the seam at the extreme edge to hold it together and for added firmness. It may be necessary to pull the material slightly when hemming over the seam. (Fig. 49).

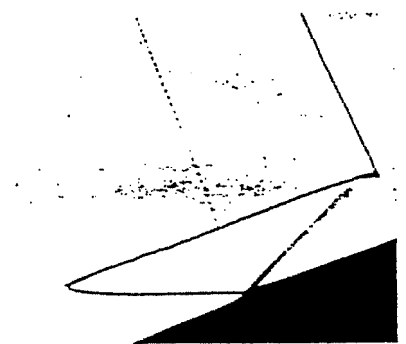


Fig. 49

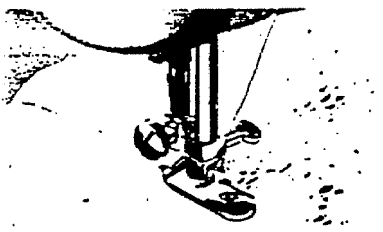


Fig. 50

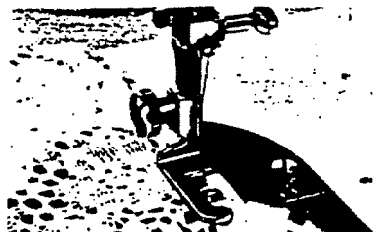


Fig. 51

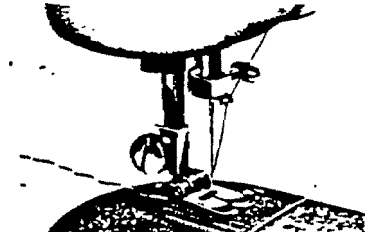


Fig. 52

When straight stitching on flimsy material change needle plate and foot as follows:

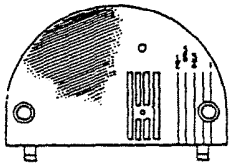


Fig. 53

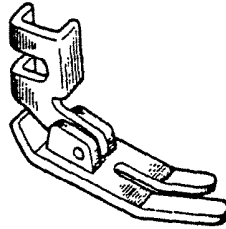


Fig. 54

To change presser foot (22 Fig. 1) loosen thumb screw and remove zigzag foot.

Replace with hinged straight foot and tighten screw securely. (Fig. 54)

To change needle plate (18 Fig. 1) remove screw and lift off with cover plate attached.

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

Be sure you do not move the needle position control (14 Fig. 1) from the "M" position or zigzag width control from the "0" position when using the straight foot as any position of the controls other than noted above will break the needle.

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 bastes cord in place (Fig. 56).

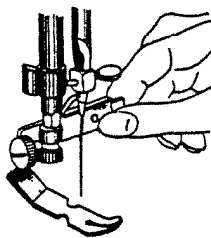


Fig. 55

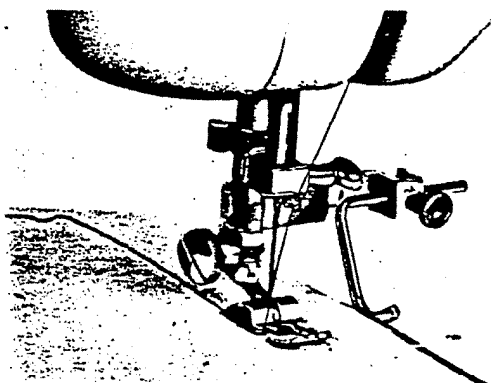


Fig. 56

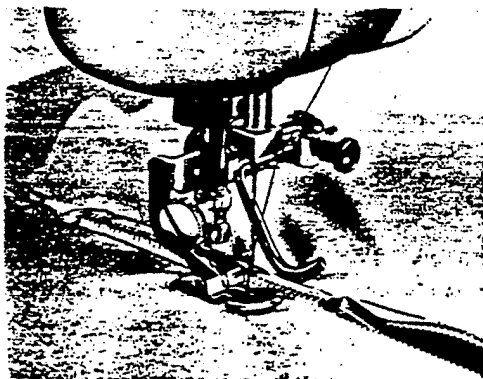


Fig. 57

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

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. 57). 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.

THE ADJUSTABLE CORDING AND ZIPPER FOOT

TILTING GUIDE (Fig. 58).

Use this guide for making parallel rows of straight or decorative stitching. Attach standard presser foot. Slip shaped holder on guide under presser foot thumb screw from the back and tighten screw (Fig. 62). 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. 62).

SEAM GAUGE OR CLOTH GUIDE

Use the seam gauge as a guide for straight seams and even rows of top stitching along edge of fabric. (Fig. 61). Insert Gauge (Fig. 59) with accompanying screw (Fig. 60) in threaded hole in bed of machine. Adjust to desired width.



Fig. 58

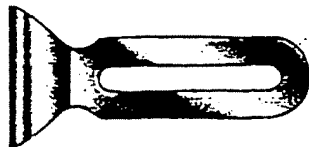


Fig. 59



Fig. 60



Fig. 61

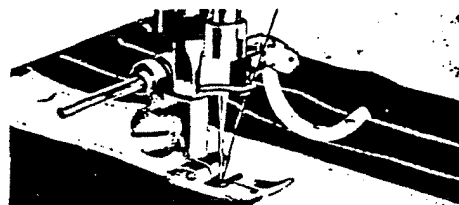


Fig. 62

CARE AND MAINTENANCE OF YOUR MACHINE

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. Cleaning should be done with a small brush, never with a sharp or pointed tool.

To remove the stitch forming mechanism, proceed as follows:

1. Turn hand wheel until the needle reaches its highest position. The mechanism will assume the position illustrated in (Fig. 63). Tilt head back on its hinges.
2. Remove bobbin case "E".
3. Turn the two shuttle race cover clamps "C" outward and remove the shuttle race cover "B" and shuttle "A".
4. Clean the shuttle race, shuttle body and shuttle race cover by removing all threads, lint, etc.
5. Apply a drop of oil with finger tip to outer edge of shuttle body.

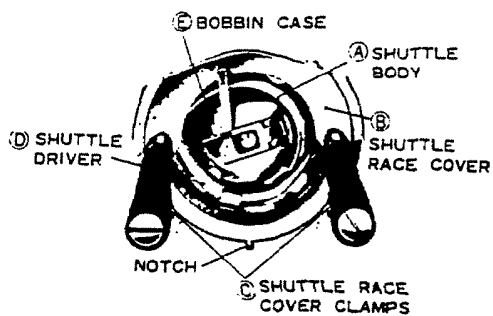


Fig. 63

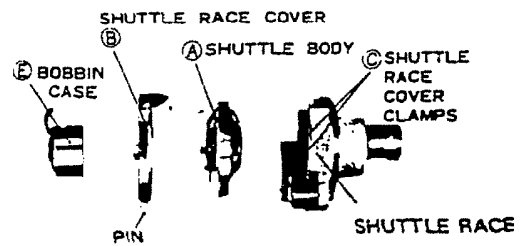


Fig. 64

OILING YOUR MACHINE

Avoid over-oiling, only a drop is needed at each point. Occasionally remove the top cover by removing screws and oil moving parts not accessible through oil holes. (Fig. 66). To oil moving parts inside the face plate, which only rarely require oiling, open plate. Oil at spots indicated in Fig. 65.

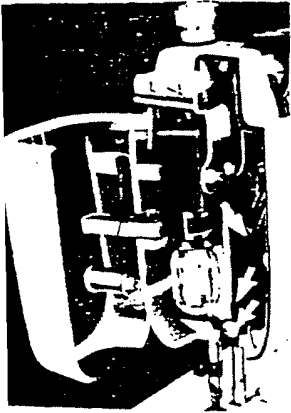


Fig. 65

Apply gear lubricant on gears indicated by black arrow in Fig. 67. Lubricate only when machine seems to sew more slowly than usual.

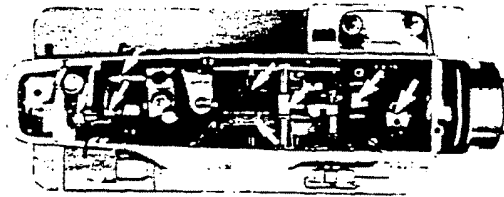


Fig. 66

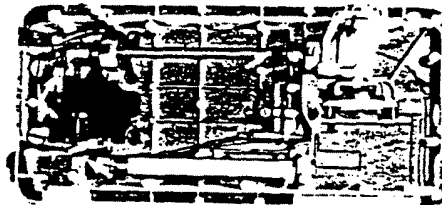
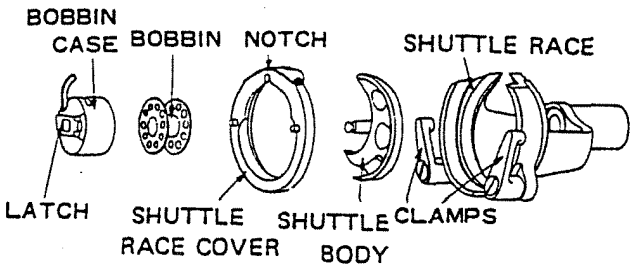


Fig. 67

TROUBLE CHART

Trouble	Probable Cause	Correction
If Machine Binds	Thread or lint in race way	<p>1—With take-up lever in highest position, tilt head back on hinges and remove bobbin case.</p> <div style="text-align: center;">  <p>The diagram shows five parts of a shuttle race assembly: a bobbin case with a latch, a bobbin with a notch, a shuttle race cover, shuttle clamps, and the shuttle body. Labels with leader lines point to each part: BOBBIN CASE, LATCH, BOBBIN, SHUTTLE RACE COVER, NOTCH, SHUTTLE CLAMPS, and SHUTTLE BODY.</p> </div> <p style="text-align: right;">Fig. 68</p> <p>2—Turn clamps outward and remove shuttle race cover. 3—Remove shuttle body. 4—Clean thread and lint from all parts, including race. 5—Run a drop of oil along rim of shuttle. 6—Replace shuttle body, then shuttle race cover. Snap clamps into place. 7—Grasp threaded bobbin case by latch and replace, fitting tongue into notch of shuttle race cover.</p>

Trouble	Probable Cause	Correction
Upper thread breaking	Improperly threaded	Refer to threading instructions, see page No. 8 and 9 and rethread machine.
	Too much tension	Loosen tension on upper thread by turning thread tension knob to lower number.
	Starting with take up in incorrect position	Always start sewing with take up lever in highest position.
	Improper setting of needle	Refer to needle setting instructions, see page No. 7.
	Bent or eye of needle too sharp	Try a new needle.
	Bent or blunt needle	Discard all blunt or bent needles and replace with new.
Material puckering	Tensions too tight	See tensions adjustment, page No. 14.
	Dull needle	Change needle.
	Stitch length too long	Reduce stitch length.

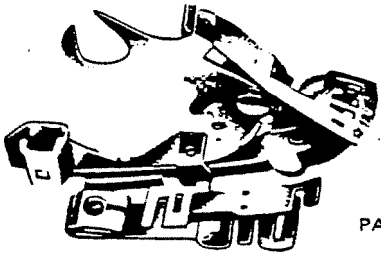
Trouble	Probable Cause	Correction
Skipping stitches	Bent needle	Discard and replace.
	Needle placed incorrectly in clamp	See instruction, page No. 7.
	Too fine a needle for thread being used	See needle and thread chart, page No. 4.
Irregular stitches	Upper thread tension too loose	Tighten upper tension.
	Improper threading	See threading instruction, page No. 8 and 9.
	Bobbin not wound evenly	Rewind bobbin.
Uneven stitches	Pulling or holding material	Avoid pulling or holding material, just guide it.
	Not enough tension on upper thread	Increase tension.
	Poor quality thread	Try different thread.
	Needle too fine for thread being used	See needle and thread chart, page No. 5.

Trouble	Probable Casue	Correction
Needle breakage	Material pulled too much.	Don't pull the material.
	Bent needle	Change needle.
	Poor quality needle	Change needle.
	Needle too fine for the garment	Change needle. See needle and thread chart, Page No. 4
	Needle too fine for thread being used	Change needle. See needle and thread chart, Page No. 4
	Incorrect setting of needle	Set needle correctly, see Page No. 7
	Incorrect setting of presser foot	Set presser foot correctly.
	Use of s.s. foot or needle plate for zigzag sewing	Change presser foot or needle plate to general use one.

Your sewing machine comes equipped with the basic set of accessories described earlier in this book.

The following pages illustrate additional time saving attachments that have been designed specifically for your machine. They are available at modest cost from your dealer. If your dealer cannot supply you with these items, ask him to order them for you by part number. Then you will be assured of receiving the genuine part designed for best performance with your machine.

SOME OF THE ATTACHMENTS AVAILABLE FOR YOUR MACHINE



PART 1403

Ruffler

Fig. 69



PART 4990

Darning Spring



Attachment Foot



PART 74159

Binder



PART 76554

Edgestitcher



7/8 PART 76552



5/8 PART 76552

Hemmers



3/8 PART 76551



1/4 PART 76550

Needle position lever must be in the left position when using these attachments.

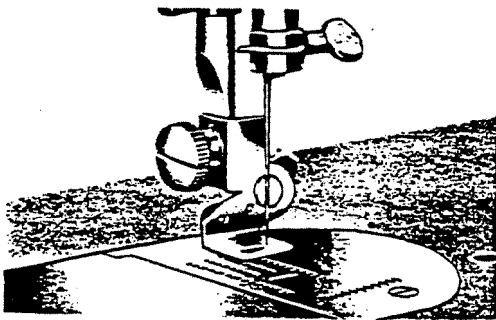


Fig. 70

ATTACHMENT FOOT

In order to attach the binder, edgestitcher and the hemmers, it is necessary to remove the presser foot and replace it with the attachment foot. (Fig. 70).

Mount binder, edgestitcher or hemmers, sliding the attachment to the left as far as possible and tighten screw.

The mounting slot enables you to sew as close to or as far away from the edge as desired. Just move the attachment to the correct position before tightening the mounting screw.

EDGEITCHER

The edgestitcher is used in making dainty lace insertions, edgings and piping.

The slots in the edgestitcher serve as guides in sewing together various pieces of material. If you want to sew lace, lace and embroidery, or lace and tucked strips together, place the pieces of material that will be on top in slot 1 (Fig. 72) and the lower fabric in slot "4". For instance, if you are sewing lace edging to a finished edge of fabric place the fabric in slot 1 and the lace in slot "4" (Fig. 71).

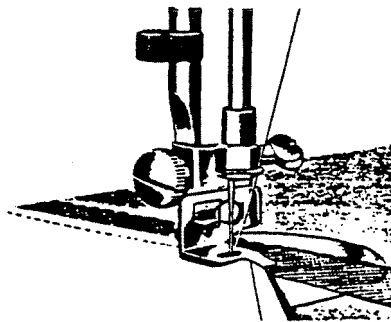


Fig. 71

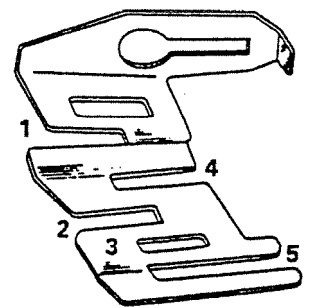


Fig. 72

Be sure to draw the lace and material under the needle and back of the edgestitcher so that the feed will carry it backward as you stitch. Hold the fabric in the left hand the lace in the right, being sure the fabric overlaps the lace slightly.

Rick-rack can be sewn to the edge of the material in the same manner.

To trim with wide piping, place the fabric in slot "4," and the fold of the piping to the left in slot "3," for a narrow piping place fabric in slot 2 and the folded edge of the piping to the right in slot "3."

Slot 5 may be used as a guide in stitching a French seam.

See Figs. 73 ~ 76 for suggestions on how to use the edgestitcher. There are hundreds of other uses.



Fig. 73

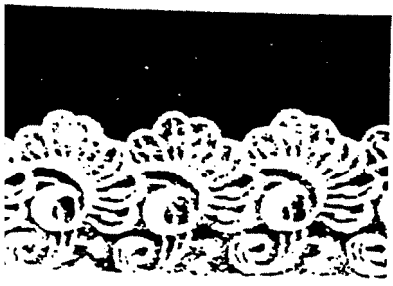


Fig. 74



Fig. 75

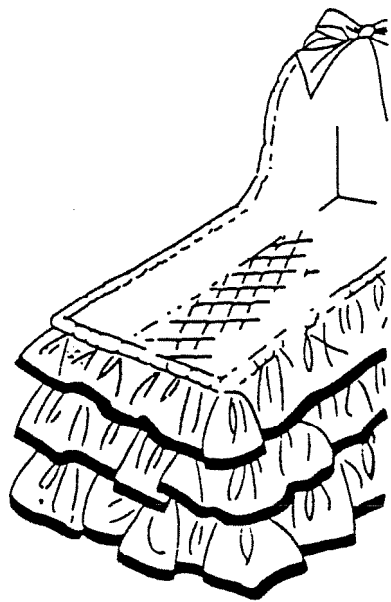


Fig. 76

BINDER

This attachment folds bias binding, applies it to the edge of material in one operation. Slots on scroll of the binder are for corresponding widths of commercially folded bias binding.

The open mouth of binder scroll is used for unfolded bias strips cut $15/16$ inch wide.

FOLDED BINDING (Fig. 77)

Cut a point on folded binding, insert in appropriate slot. Draw through slot and under binder with strong pin. Test stitching to be sure it is on the edge. Adjust by sliding binder to right or left.

TWO-TONE BINDING (Fig. 77)

Two bindings can be sewn on fabric edge also in one operation. When two are used, always skip one size between widths, inserting each in correct size slot.

HAND-CUT BIAS BINDING (Fig. 80)

Cut $15/16$ inch bias binding fold in half for a couple of inches. Cut binding diagonally toward end, almost to fold. Slip fold into center of binder. Draw back until cut opens and binding encircles open end of scroll. Test stitching to be sure it is on the edge adjust if necessary.

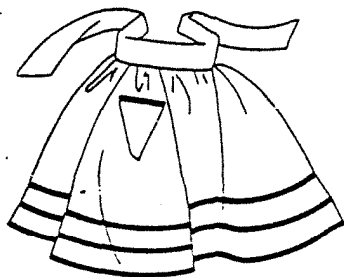


Fig. 78



Fig. 79

- 46 -

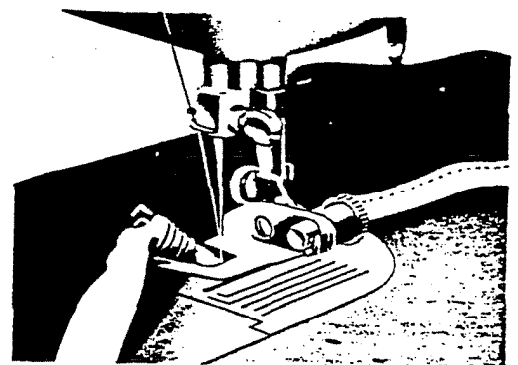


Fig. 77

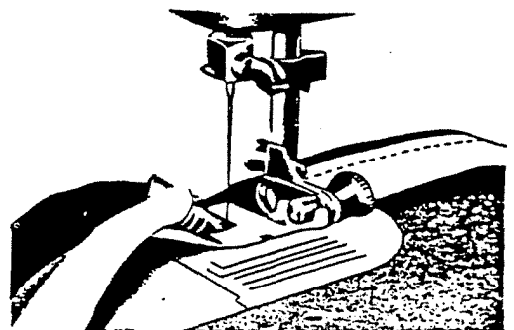


Fig. 80

THE SET OF HEMMERS

Before attaching any of the hemmers be sure bobbin thread is pulled up. Then, with hemmer in place, hold top thread loosely and turn handwheel one full turn toward you, making a loop under hemmer. Grasp bobbin thread with both hands and slip horizontally under hemmer toward back. Bobbin thread will catch loop and carry upper thread to back of hemmer.

Fold material to suit for two inches along edge, hold at each end of fold. Slip fold into guide and up over spoon (Fig. 81). Fold hem in material back of hemmer. Draw forward to end of hem and fasten with point of needle. Pull on threads gently as you start stitching.

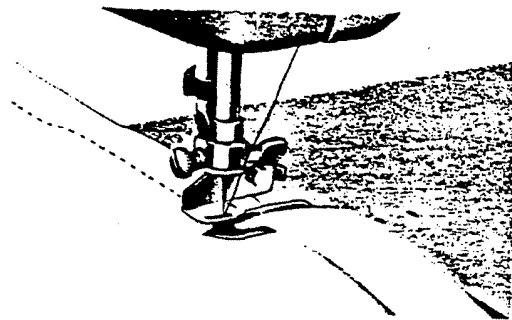


Fig. 81

HEMMER SET

You can make a hem 1/4", 3/8", 5/8", or 7/8" in width, depending upon which hemmer you use.

RUFFLER

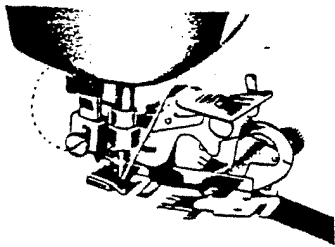


Fig. 82

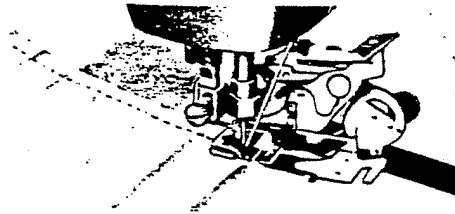


Fig. 83

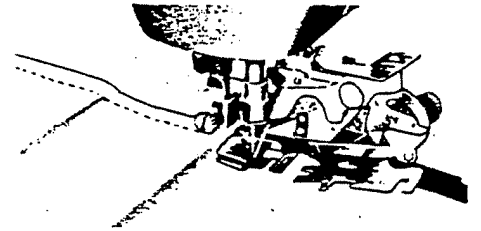


Fig. 84

The ruffler will produce yards of delicate ruffling or precision pleating.

Ruffling can also be done and sewn to another piece of fabric at the same time.

This highly versatile attachment despite its wide range of use, is simple to use.

Use the ruffler for making aprons, curtains, pleating a skirt, adding fullness to the bodice of a dress and etc.

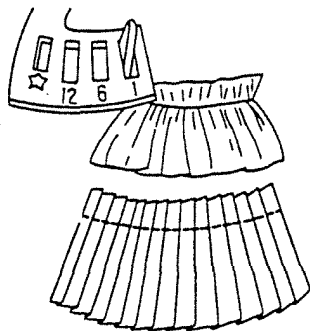


Fig. 82-A

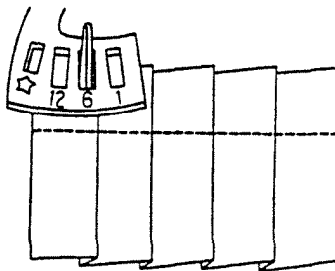


Fig. 83-A

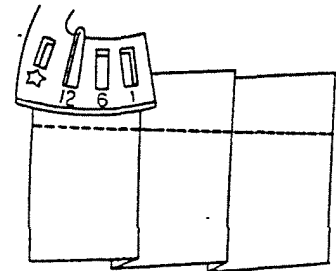


Fig. 84-A

Installing Sewing Head in Portable Case

Please read these important instructions which were written to aid you in placing your new sewing machine on its portable base.

First, remove the nail which holds the foot control inside the base to avoid damage in shipping. If a small plastic clamp is fastened to the back and not to the top of the partition at one end of the base, remove it, too.

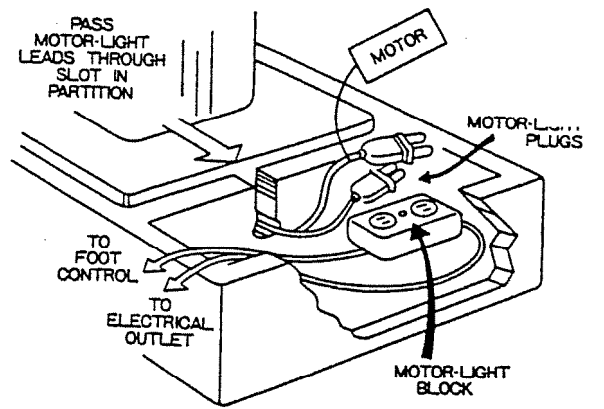
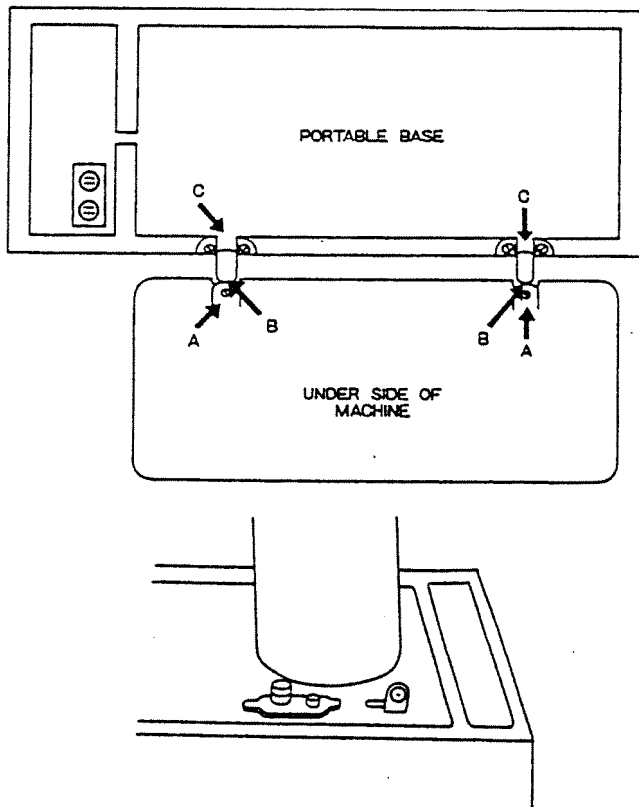
After unpacking the sewing machine unit, being certain to take out the instruction book, guarantee and accessory box, lay the unit face down on a table. You will see two clamping screws "A" entering head hinge holes "B" on the underside of the back.

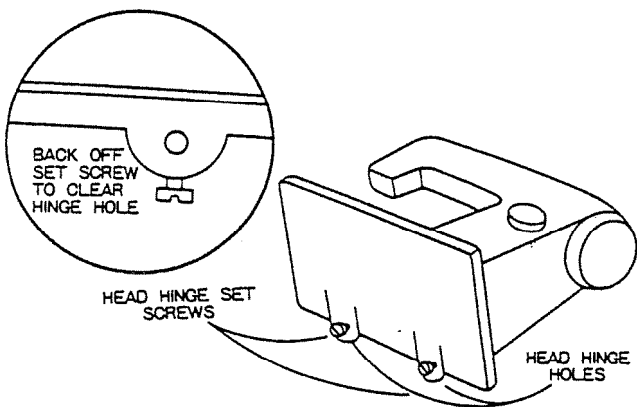
On the base you will find two head hinges "C" which will fit into holes "B". Lower the base onto the sewing machine fitting hinges "C" into holes B. Tighten screws "A" securely with a screw driver.

With machine in sewing position attach plastic clamp "D" to top of partition with screw provided so that it may be turned across the bed of the machine, to hold it down. (On some bases the clamp may be positioned in the proper spot).

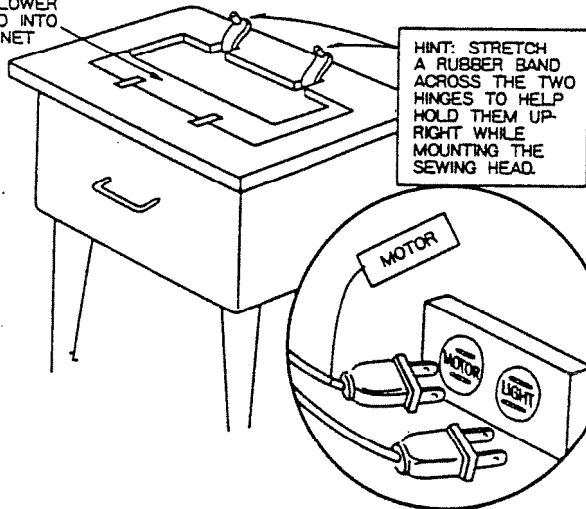
To make the electrical connection draw the two wires through the slot in the partition of the base. Plug the cord labeled "Motor" into the receptacle marked "Motor" on the block attached to the outer section of the base. Then insert the other cord into the "Light" receptacle.

Place the foot control on the floor, insert plug into a wall outlet (110-115 volts) and you are ready to sew. But first read the instruction book to become familiar with the threading of the machine, tension adjustments and all the other features designed to make sewing a pleasure.





LIFT FLAP TO LOWER HEAD INTO CABINET



INSTALLING SEWING HEAD IN CABINET

1. Loosen both head hinge set screws until head hinge hole is clear.
2. Tilt head hinge fingers up and back as far as they will go.
3. Carefully slip head onto head hinges – making sure fingers are inserted as far as they can go into head hinge holes.
4. Allow the head to rest in its tilted back position.
5. Tighten both set screws securely with screw driver.
6. Plug electrical leads into sockets located inside cabinet. Cord attached "motor" tag must be plugged into socket marked "motor". Untagged cord goes to "light" socket.

To Assemble Legs on Cabinets

1. Place cabinet body upside down on smooth level surface (use packing material as cushion to prevent marking top.)
2. Select each leg by its corresponding number on cabinet body corner to insure proper match and fit.
3. Slip leg into position between corner blocks and down as far as it will go with stud fitting into slot or hole in metal bracket.
4. Add wing nut and tighten securely.