

OPERATING MANUAL FOR



CLASS 33
ZIG-ZAG SEWING
MACHINE

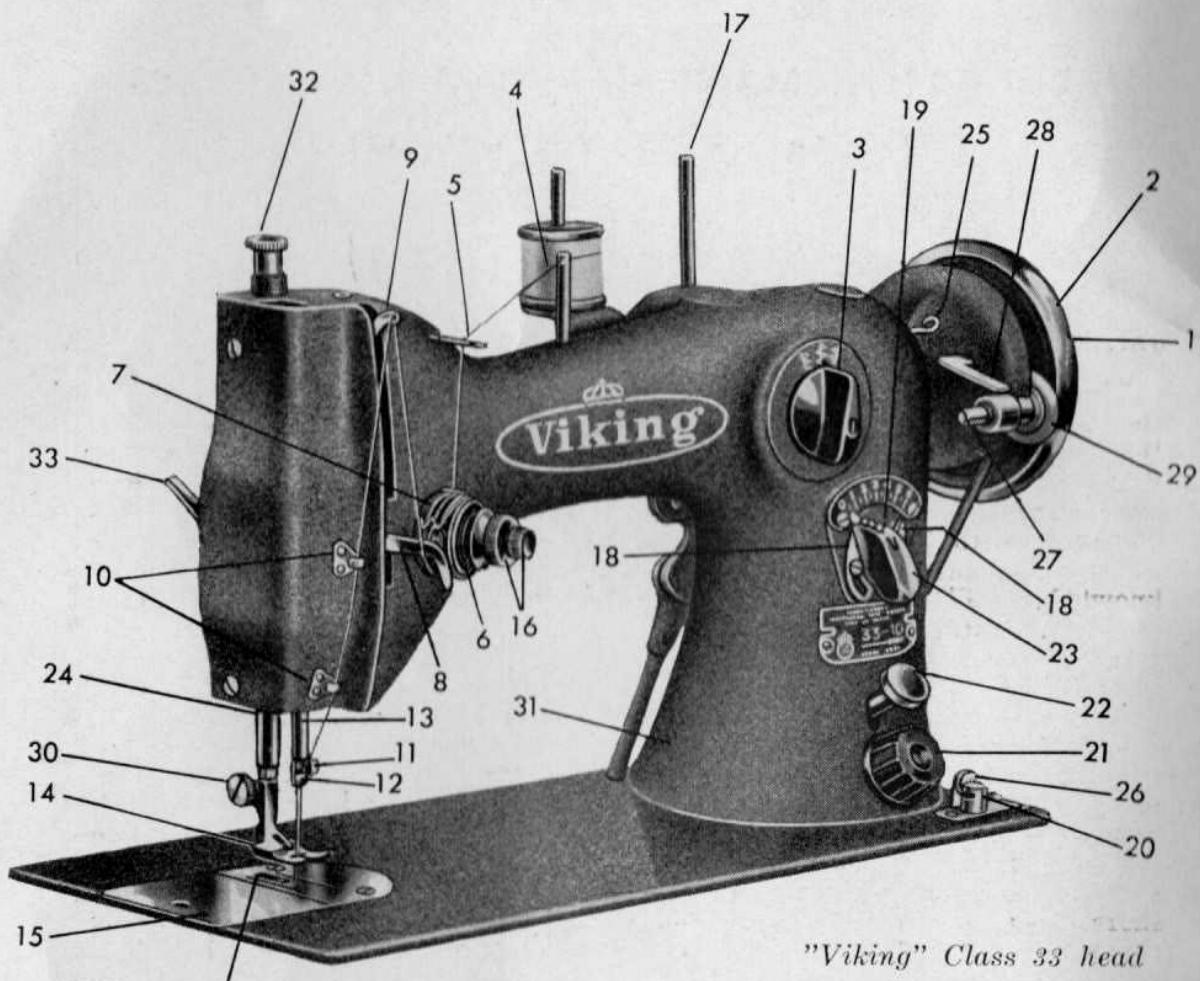
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O P E R A T I N G
M A N U A L F O R

Viking

CLASS 33
ZIG-ZAG SEWING
MACHINE



"Viking" Class 33 head

FIG 1 34

- | | |
|--|-------------------------------|
| 1 Stop Motion Knob
(at center of handwheel — hidden
from view) | 17 Spool Pin |
| 2 Handwheel | 18 Adjustable Stops |
| 3 Starting Position Knob | 19 Knurled Catch |
| 4 Guide Pin | 20 Drop Feed Button |
| 5 Thread Guide | 21 Stitch Regulator Knob |
| 6 Tension Discs | 22 Reverse Stitch Push Button |
| 7 Take-up Spring | 23 Zig-zag Regulating Knob |
| 8 Slack Thread Regulator | 24 Presser Bar® |
| 9 Take-up Lever | 25 Wire Guide |
| 10 Thread Guides | 26 Tension Device |
| 11 Needle Set Screw | 27 Bobbin Winder Spindle |
| 12 Needle Clamp | 28 Bobbin Winder Latch |
| 13 Needle Bar | 29 Bobbin Winder Pulley |
| 14 Presser Foot | 30 Thumb Screw |
| 15 Slide Plate | 31 Arm |
| 16 Tension Regulator Knobs | 32 Presser Regulator Bushing |
| | 33 Presser Foot Lifter |
| | 34 Feed Dog |

INSTRUCTION MANUAL FOR VIKING CLASS 33

ZIG-ZAG SEWING MACHINE

Introduction

This manual has been prepared for the purpose of instructing you in the use and operation of your Viking Class 33 Zig-Zag Sewing Machine. It is suggested that you familiarize yourself with these instructions. Study them carefully, because their knowledge will enable you to take fullest advantage of the many special features your machine has to offer.

As your Viking Class 33 represents a considerable investment, treat it with the care that is due any piece of precision-made machinery. Neglect and careless handling will not only account for unsatisfactory results of your sewing, but will also shorten the service life of your machine.

The following instructions and your reference to the various illustrations will serve as a step by step guide to get you and your machine ready for sewing. Even after you have learned how to operate your Viking "33", you will find this booklet a handy help in solving future sewing problems. It is, therefore, suggested that it be preserved carefully.

Preparing the machine for sewing

Before using your new Viking "33" give it a good cleaning and put one or two drops of light-bodied sewing machine oil into each oil hole. Oil and oilcan are part of the accessories of your machine. Oiling instructions will be found on page 33.

How to turn the handwheel:
The handwheel must always be turned toward you and *never* in the opposite direction. Also do not turn handwheel once the needle has been threaded, unless there is material under the presser foot. Failure to heed this advice may result in tangled threads and jamming of the machine.

Making the electrical connection:
The Viking "33" is driven by an electric motor located in back of the machine. This motor permits operation on AC and DC current. The speed of the machine is regulated by a motor control, knee or foot operated, which is wired to the motor. Before plugging the electric cord, coming out from the rear of the sewing machine cabinet, into your electric wall outlet, make certain that your house voltage corresponds to the voltage marked on the name plate of the motor. Do not plug in unless they conform within 10 volts.
Note: When your sewing is completed, disconnect the electric cord of the sewing machine from outlet.

Selecting the correct needles and thread

The seam produced by the sewing machine should blend with the fabric as much as possible except, of course, where contrast is desired. Consequently, the correct selection of needles and thread, matching the type of material you are sewing, is of importance.

Heavy goods require a thicker needle and coarser thread while sheer fabrics call for a fine needle and thin thread.

Needles style 16×95 must be used on the Viking "33" for satisfactory

operation. Do not substitute any other style. For permanent reference the correct style of needle is also indicated on the oval brass plate attached to the front of the arm of the machine.

Needle and thread selector

Sizes & Grades of Needles	Type of Fabric and Work to be Done	Size of thread		
		Cotton	Silk	Linen
9 (Fine)	Delicate fabrics like georgette, chiffon, batiste, fine lace, fine linen and other sheer fabrics. For fine lingerie, infants' clothes and fine lace work.	100 to 150	00 and 000 twist	
11 (Medium—Fine)	Medium light-weight and summertime fabrics. For house dresses, children's dresses, cottons, aprons, curtains.	80 to 100	0 twist	
14 (Medium)	Dress silks and cottons, light weight woolens and decorator's fabrics. For dressmaking and general household sewing, men's dress shirts and light weight draperies.	60 to 80	A & B twist	
16 (Light-Heavy)	Heavy cretonne, madras, muslin, brocades and quilts. For men's work shirts and other work clothes, heavy quilting and decorators' articles.	40 to 60	C twist	
18 (Medium—Heavy)	Heavy woolens and suiting, light weight canvas, bed ticking, upholstery and awning materials, slipcover fabrics. For men's suits, work and sports clothes, awnings, slipcovers, upholstery and mattresses.	30 to 40	D twist	
19 (Heavy)	Heavy overcoating, duck, ticking, drills, canvas and sacking. For heavy washable uniforms, bedding for hospitals, hotels and camps. Extra heavy and coarse goods.	24 to 30	E twist	60 to 80
21 (Extra-Heavy)	For canvas bags and heavy canvas products.	20 to 24		40 to 60

Inserting a new needle

Turn handwheel (2), page 2, toward you until needle has reached the highest point of its course.

Loosen needle set screw (11) in needle clamp (12) and pull out old needle. Insert new needle into needle clamp (12), pushing it up as far as it will go. Make sure that long groove in needle faces you. Tighten needle set screw (11) securely. Recheck whether needle is inserted correctly. Needle's eye must face you as you sit in front of the machine.

When a two-needle holder is used, which is available as extra equipment, needles are inserted in the same manner. (See page 28.)

Winding a bobbin

It is not desirable to let the sewing machine operate while winding bobbins. Aside from the chance of ending up with tangled threads and a jammed machine, stopping the sewing mechanism during the bobbin winding operation also saves it from wear and tear.

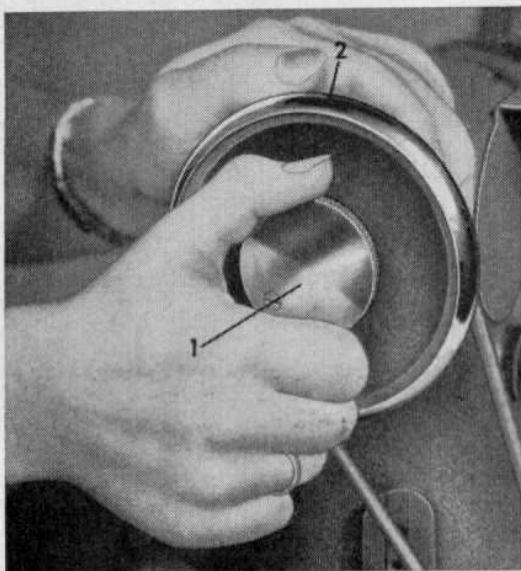


FIG. 2

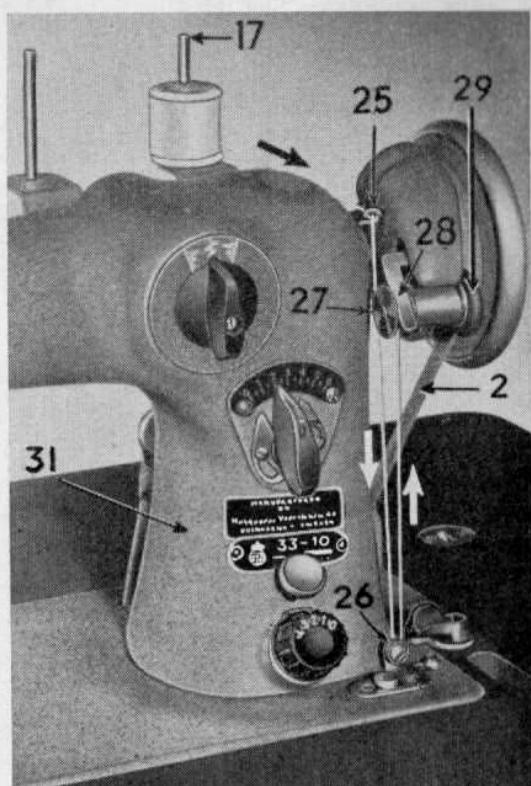


FIG. 3

a. To stop the sewing mechanism, disconnect handwheel (2) by holding its rim with your left hand and turning stop motion knob (1) toward you with your right hand. (Fig. 2.)

b. Place a spool of thread on the spool pin (17) nearest to bobbin winder. Lead end of thread through wire guide (25) downward along front of arm (31) to tension device (26) at its bottom. Pull thread from left to right between the discs of the tension device.

c. Wind the thread two or three times around the bobbin and push it onto bobbin winder spindle (27) as far as it will go. Press down bobbin winder latch (28), so that the rubber ring of bobbin winder pulley (29) comes in contact with the rim of the handwheel (2). See fig. 3.

d. Start off machine by depressing pedal of motor control and keep machine running at moderate speed until bobbin is wound fully. Bobbin winder will automatically discontinue winding. Stop machine and pull bobbin off the bobbin winder spindle (27).

e. After bobbin has been wound, again connect the sewing mechanism to the handwheel. To accomplish this, hold handwheel with your left hand. Firmly grasp stop motion knob (1) fig. 2, with your right hand and turn it clockwise until it is tightened securely.

Note: Only an evenly wound bobbin will let the machine do the best stitching. Bobbins having thread piled up on one side should, therefore, be avoided.



To correct poor and uneven winding such as pictured on sample I, loosen screw holding tension device (26) and move it slightly to the left. Tighten screw and continue winding which now will be found improved. Piled up threads as seen on sample II can be avoided by moving tension device (26) to the right. Sample III shows a bobbin wound correctly.

Removing the bobbin case from the sewing hook

Turn handwheel (2) fig. 1, toward you until the needle bar (13) reaches its highest point. Draw open slide plate (15) in bed of machine. From beneath the table with the thumb and forefinger of your left hand

open the latch of the bobbin case and pull it from the sewing hook. (Fig. 4).

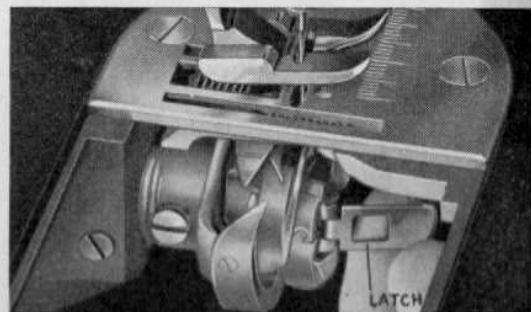


FIG. 4

As long as the latch is held open, the bobbin is retained in its case. On releasing the latch and turning the bobbin case downward, the bobbin will drop out.

Threading the bobbin case

a. Hold bobbin case in your left hand with slot in edge of shell facing you (fig. 5). Grasp the bobbin with your right hand, so that the thread on top leads from left to right. Drop bobbin into bobbin case.

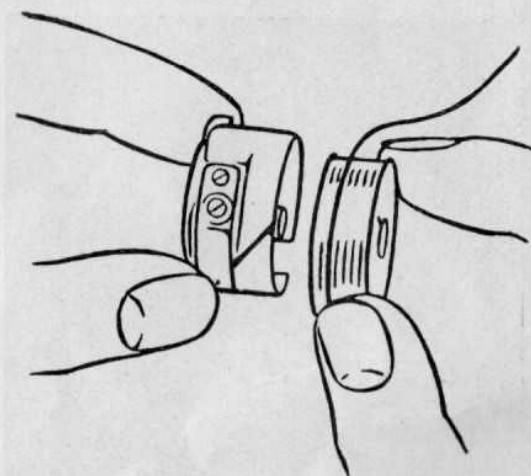


FIG. 5

b. Using the right hand, draw the thread into the slot in the edge of the bobbin case, as shown in fig. 6.

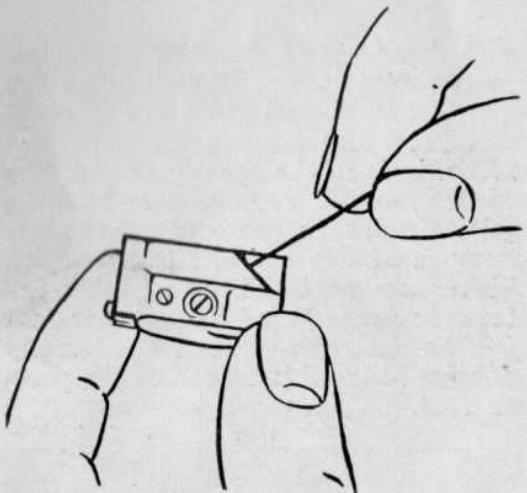


FIG. 6

c. Now pull the thread to the right under the tension spring and let it come out where the bent tab at the tip of the spring fits into the small round hole in the bobbin case. (Fig. 7.)

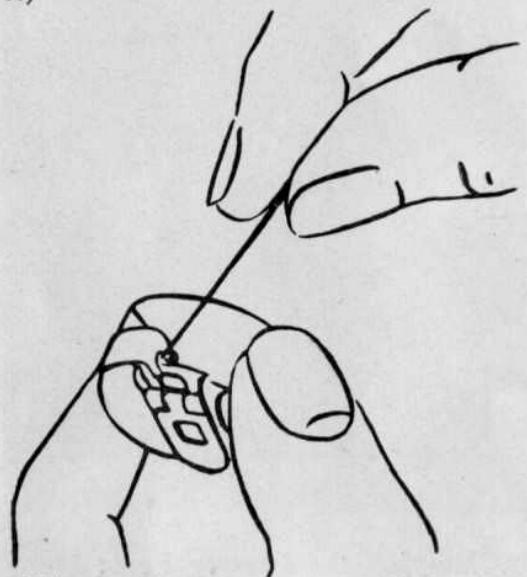


FIG. 7

Inserting the bobbin case with bobbin

Turn handwheel toward you until needle reaches its highest point. Pull open slide plate (15), fig. 1, in bed

of machine. Take bobbin case by the latch with same grip as employed in removing it and place it on the centerpost (34) of the bobbin case holder with the semi-circular notch (35) facing upward. (Fig. 8.) Release latch and press bobbin case into the bobbin case holder until the latch catches the groove under the tip of the centerpost with a click that can be heard. Pull bobbin thread permitting 3—4 inches to hang down freely.

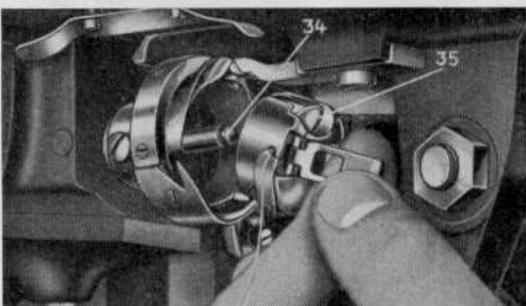


FIG. 8

Threading the machine

Bring thread take-up lever (9), fig. 9, to its highest position by turning handwheel toward you. Place a spool of thread on the left hand spool pin of the spool holder. Pass the thread through the guide holes in pin (4) and thread guide (5) from right to left. Pull it downward to white tension discs (6) and around them from right to left. Guide it upward and to the left over the crotch of the thread take-up spring (7), then down again and from right to left around the underside of slack thread regulator (8). From there lead the thread upward to the eye at the tip of the thread take-up lever (9) and through same from right to left, downward through thread guides (10) and the thread guide in the needle clamp (12). The thread is then passed through the eye of the needle from front to back. Pull about 3—4 inches of thread past the eye of the needle.

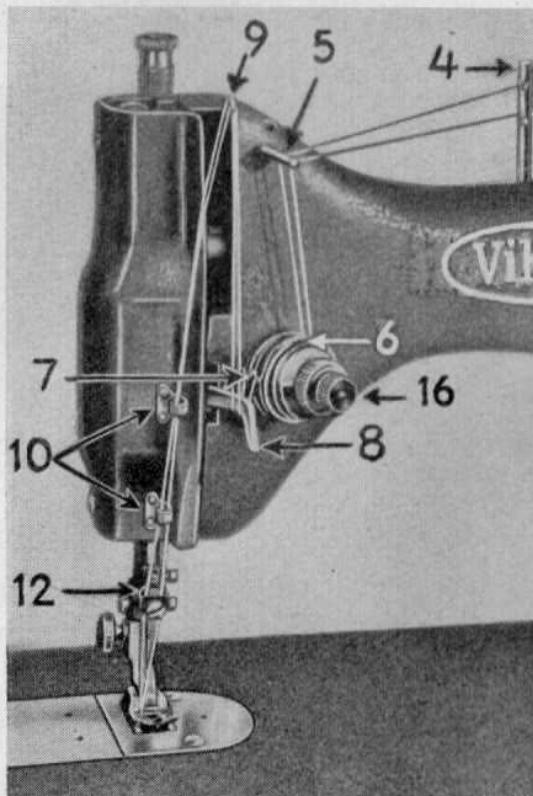


FIG. 9

Fig. 9 shows Viking "33" equipped with a 2-needle holder (page 28). When using this special equipment, machine is likewise threaded as described above with the second thread passing between the black set of tension discs.

Note: Once threaded, do not run machine unless there is cloth between the presser foot and the needle plate and the presser foot is let down. Otherwise, the threads may get tangled underneath the needle plate and jam the sewing hook or break the needle.

The presser foot

To permit the machine to stitch properly and to feed the material past the needle, the presser foot (14)

must bear down on the material. Presser foot lifter (33) controls the raising and lowering of the presser foot. (Fig. 10.)

Regulating the pressure of the presser foot: Turn regulator bushing (32), fig. 10 to the right for more pressure and to the left to reduce it. When sewing heavier material, stronger pressure of the presser foot is often desirable. Thin cloth usually requires reduced pressure of the presser foot.

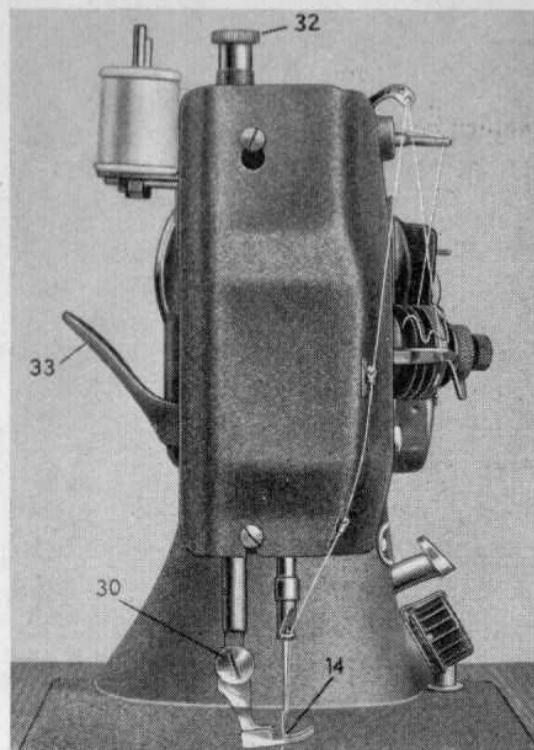


FIG. 10

Changing the Presser Foot: Many of the various operations possible with the Viking "33" require the use of the special presser feet included in the attachments of the machine.

To exchange presser foot:

- Turn handwheel toward you until needle is at its highest point.

- b. Lift presser foot as described above.
- c. Loosen thumb screw (30), fig. 10 about three turns. Push presser foot downward from its seat on the presser bar. Tilt the bottom of the foot to the left and remove the foot.
- d. To install a different presser foot, slide its channel-like portion at the top upward against the presser bar and tighten thumb screw (30).

Getting ready for sewing

a. Hold end of needle thread with left hand, so that thread remains slack and with right hand turn the handwheel slowly toward you until the needle goes down and comes up again to its highest position. In so doing, the upper thread (needle thread) will catch the lower thread (bobbin thread).

b. Now draw up the upper thread and at the same time the lower thread will be pulled up through the stitch hole in the needle plate. (See fig. 11.)

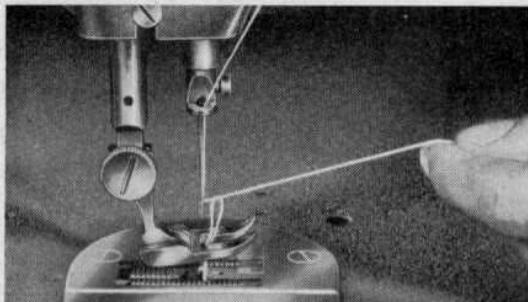


FIG. 11

c. Both thread ends must then be placed away from you underneath the presser foot. Now your machine is ready for sewing.

Commencing to sew

Take some material, place it between presser foot and needle plate

and lower the presser foot. Move foot control in convenient position when machine is so equipped. Turn handwheel toward you and at the same time apply slight pressure with your foot on the pedal of the foot control. On console models equipped with knee controls give slight pressure with your knee against the lever of the knee control. Once the machine is in motion, proceed with sewing as desired.

Note: Do not try to help feeding action of machine by pulling goods from behind needle nor hold back material to slow up the speed of the machine. Both actions may bend or break the needle and may also result in damage to other working parts of your machine.

Turning a corner

To turn a corner, stop machine where corner is desired, leaving needle in material. Lift presser foot and revolve material around needle as required. Lower presser foot and continue sewing.

Regulating the length of stitches

The length of the stitches is regulated by turning the stitch regulator knob (21) fig. 12. The small pointer above this numbered knob indicates the length of stitch to which the machine is set.

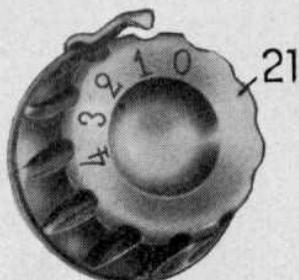


FIG. 12

Sewing forward and reverse

Sewing forward or reverse is regulated by push button (22), fig. 13.

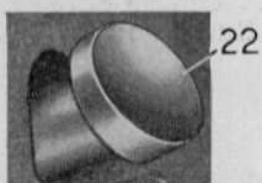


FIG. 13

The machine will sew in reverse when this button is pushed in and will continue to do so as long as the button is not released. Pressing the button and pushing it downward at the same time will lock it in depressed position. The machine will then sew backward until the pushbutton is unlocked by applying upward pressure. Sewing in reverse is possible regardless of the length of stitch selected. The rapid reversal of the direction of sewing is particularly valuable when tacking at the end of seams.

Removing the work from the machine

Stop machine. Turn handwheel toward you until needle is at its highest point. Raise presser foot by means of presser foot lifter. Draw the material directly back from the needle (away from you). Pull out about 4—5 inches and cut threads. The thread cutting notch in the rear of the presser bar above the top of the presser foot will be found a convenient help. Just slide threads downward along presser bar until caught by this notch and yank to cut.

Adjusting the thread tension

Correct Tension of Needle Thread

(upper thread) and bobbin thread (lower thread) can easily be determined as follows:

When the tensions of upper and lower thread are properly adjusted, the stitches will look alike on both side of the material, as shown in fig. 14 and no correction is necessary.

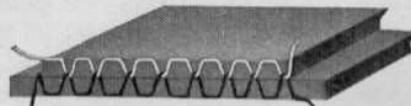


FIG. 14

If tension of upper thread is too tight or tension of lower thread too loose, the upper thread will lie stretched out on top of the material and the lower thread will be drawn up to the top, appearing there in form of small knots. (See fig. 15.)

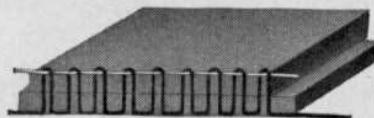


FIG. 15

To correct this, first make certain that the presser foot is let down. Then turn tension regulator knob (16), fig. 1, to the left.

Note: Before turning tension regulator knob, check whether the sewing thread passes between the "BLACK" or the "WHITE" set of tension discs. Turn only that knob having the same color as the set of tension discs used. The red dots on the respective tension regulator knobs will be found helpful in adjusting the tensions, as they will indicate the initial positions of the knobs.

Make several stitches to see if the upper thread tension is correct. If not, adjust further by turning regulator knob to the left.

If tension of upper thread is too loose or tension of lower thread too tight, the lower thread will lie stretched out along the underside of the

material and the upper thread will be drawn down to the underside, appearing there in the form of small knots or loops (fig. 16).

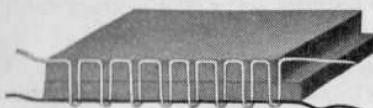


FIG. 16

To correct this, first make sure that the presser foot is let down, then turn tension regulator knob (16) fig. 9, to the right.

Make a few stitches to see whether tension is correct. If not, make further adjustment by turning the regulator knob to the right.

If at all possible, always regulate tension by adjusting upper tension. The lower tension should not be regulated unless absolutely essential,

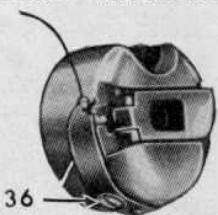


FIG. 17

as this adjustment is more delicate. In case you consider it necessary to adjust the lower tension, remove bobbin case from the machine. Turn bobbin case spring screw (36), fig. 17, to the right to tighten lower thread tension. If the tension is to be lessened, turn this screw to the left.

Note: Do not turn bobbin case spring screw (36) more than about $\frac{1}{4}$ turn at a time in either direction. Then try and check for results.

Lowering the feed dog (Drop feed for darning and embroidery.)

For the purpose of darning and embroidering the feed dog (34) fig. 1, can be lowered, so that the work can be fed by hand in any desired direction.

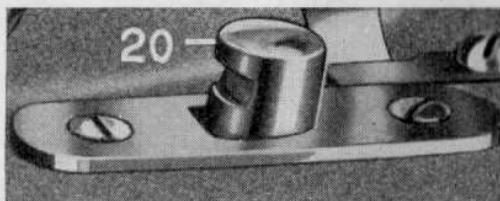


FIG. 18

To effect this, depress drop feed button (20), fig. 18, located on the bed of the machine right in front of the arm. By pushing this button to the left while depressing it, the feed can be locked in dropped position. Pushing the button to the right will put the feeding mechanism back into operation.

Straight sewing

The machine will make a plain straight stitch when the zig-zag regulator knob (23), fig. 19, points at marking "0" at extreme left of dial.

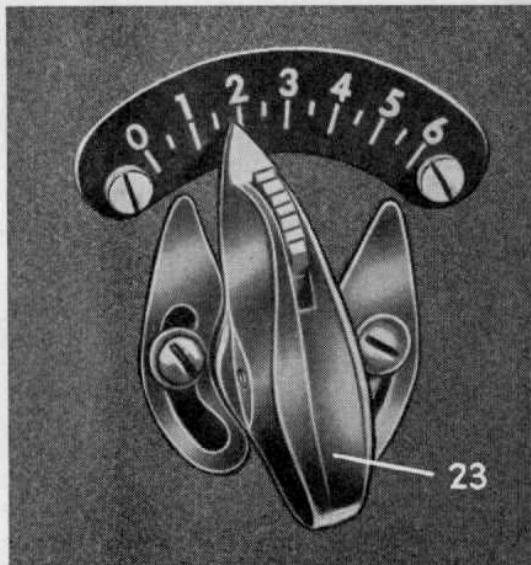


FIG. 19

Should it be required to sew considerable lengths of straight seams, especially on thin material, it is suggested that you use the plain sewing needle plate with the circular stitch hole and the plain sewing presser foot pictured in fig. 20.

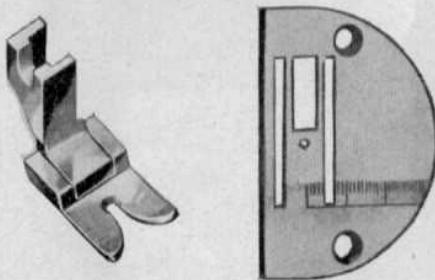


FIG. 20

The needle plate is attached to the bed plate of the machine with two screws, one in front of the presser foot and the second behind it.

Important Note: When using the plain sewing needle plate, the starting position knob (3), fig. 1 and fig. 22, must be at the "central" position as shown in that picture. For further details concerning the starting position knob, refer to page 13.

Basting stitches

Turn stitch regulator knob (21), fig. 12, clockwise until indicator points at marking "4". Slightly loosen needle thread tension by turning tension regulator knob (16) to the left. The machine will produce a long, loose stitch which can be pulled out readily.

Zig-zag sewing

Setting the zig-zag regulating knob (23), fig. 21, to any other dial marking but "0", will produce a zig-zag stitch. The width of this zig-zag

stitch can be varied at will up to a maximum of $\frac{1}{4}$ " when the regulator knob is set at dial marking "6".

Whenever it is desirable or necessary to duplicate an exact width of zig-zag stitch, such as in sewing buttonholes or buttons, the movement of the zig-zag regulating knob (23) can be limited by the two adjustable stops (18) shown on fig. 21.

By loosening the respective screws in these stops, they can be adjusted to any required setting. Tighten screws when these stops are set. By flipping downward the knurled catch (19) near the tip of the regulating knob, the movement of the latter will be limited by these stops. When this knurled catch is flipped upward, the regulating knob can be moved to any spot on the dial, thereby allowing zig-zag seams of any width to be sewn.

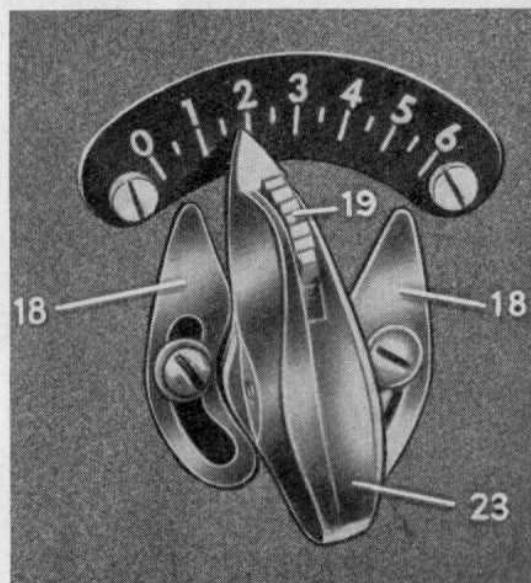


FIG. 21

Note: The zig-zag regulating knob (23) can be moved into any desired position while the machine is operating. Do not turn zig-zag regulating

knob when machine is at rest and needle is in material. Disregard of this advice may have bent or broken needles as a consequence. Raise needle from material before operating knob.

Starting Position for Zig-Zag Sewing: Ordinarily the starting po-

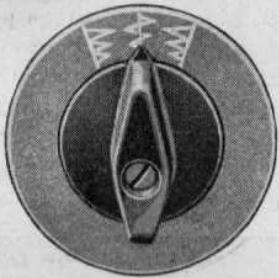


FIG. 22

sition knob, fig. 22, is set in the "central" position of the dial as seen on the illustration. With the knob in this position, the machine will make zig-zag stitches which are central relative to the straight seam. See fig. 23.

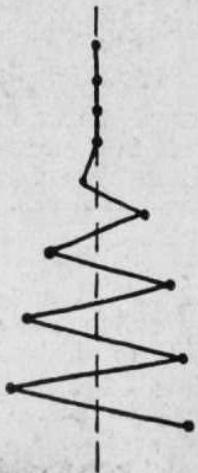


FIG. 23

With the starting position knob in the "left" position, the machine will produce zig-zag stitches which are to the right of the straight seam, as shown in fig. 24.

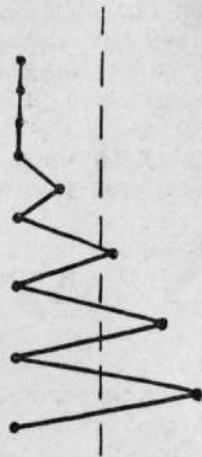


FIG. 24

Zig-zag stitches which are to the left of the straight seam, as pictured in fig. 25, will be sewn when the starting position knob is in the "right" position.

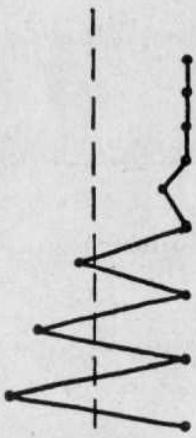


FIG. 25

Ornamental seams

A wide variety of ornamental seams (fig. 26) can be made by suitable choice of the width and length of the zig-zag stitch combined with an appropriately selected starting position of the needle. The appearance of such seams can be further enhanced by using colored thread.

In addition to the ornamental seams described in the preceding chapter, your own imagination will help you to produce many other pleasing patterns. They lend themselves admirably to decorating garments, furnishings, pillows, doilies, etc.

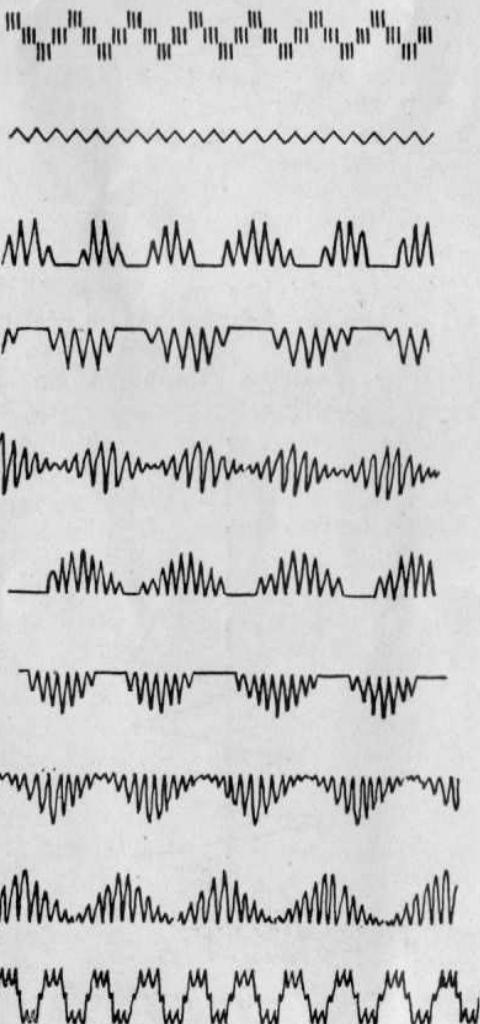


FIG. 26

Embroidery and monograms

Remove presser foot from presser bar (see page 9). Lower feed dog by depressing drop feed button (20)

in accordance with instructions on page 11. Thread machine with embroidery thread of a type intended for sewing machines (silk or mercerized thread). Stretch design to be embroidered or monogrammed over an embroidery hoop and place under needle. Let down presser foot lifter. Get machine started slowly, turning handwheel by hand for the first stitch or so to bring up the bobbin (lower) thread. Holding both bobbin and needle thread, start outlining contour of design with fine stitches. (See fig. 27a.)

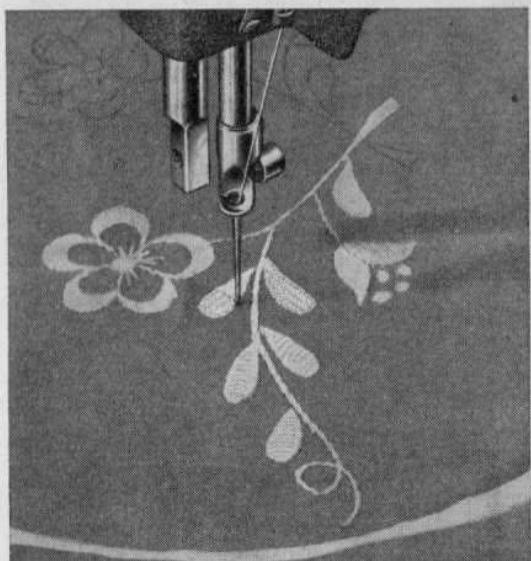


FIG. 27a

Set zig-zag stitch regulator knob (23), page 12, to desired width of stitch and start filling in the design with rows of stitches. Guide hoop needle and operate machine at an easily controllable speed. After an even padding has been obtained, cover with a straight satin stitch to give the appearance of hand work.

Another kind of embroidery can be made rapidly by following the contour of the design with narrow stitches (turn zig-zag regulating knob to marking "1" on dial). Fill

in design by quickly guiding hoop back and forth under the needle and operate machine at a rather slow speed to obtain long stitches. (Fig. 27b.)

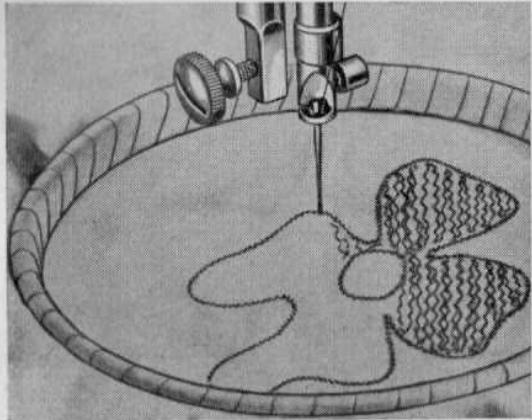


FIG. 27b

Darning and mending

Prepare machine for this work by removing the presser foot from the presser bar (24), attaching instead the darning presser foot (fig. 28).

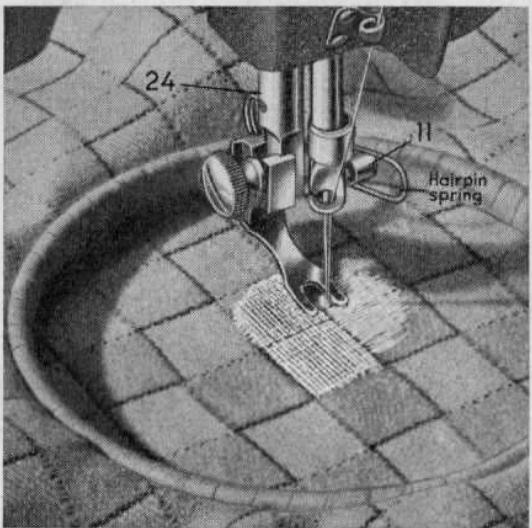


FIG. 28

At the same time make sure that the hairpin shaped wire spring, ex-

tending forward from the darning presser foot, straddles the cylindrical body of the needle set screw (11).

Drop feed dog by pressing drop feed button. Set starting position knob at "central" needle position and move zig-zag regulating knob to "0".

Use suitable thread of a type intended for sewing machines. Stretch article to be darned over an embroidery hoop and place under darning foot. Lower foot upon the material close to the spot where torn and begin sewing. Cover tear with successive rows of stitches, moving article back and forth slowly. Turn article and sew further rows of stitches across those first made. Continue sewing until hole is covered completely.

While small holes may be darned by holding down the fabric with one's fingers, the use of an embroidery hoop is recommended for closing larger holes.

Sewing buttonholes

1. For the making of all types of buttonholes the machine requires the following preparation:

- A. Remove regular presser foot and install buttonhole presser foot (fig. 29).
- B. Turn starting position knob (3) to "left" needle position (page 2).

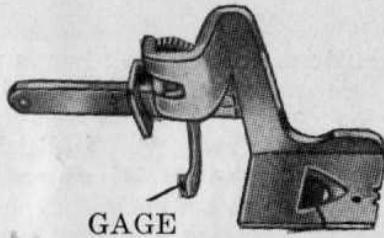


FIG. 29

- C. Move zig-zag regulating knob (23) to marking "2" on dial.
- D. Set left adjustable stop (18) to

same dial marking and tighten screw. Right adjustable stop should be set at marking "4". Flip downward knurled catch (19) on zig-zag regulating knob. (Refer to page 12.)

- E. Adjust stitch regulator knob, so that indicator finger above it points to a spot between dial marking "0" and "1" but closer to "0". (With stitch regulator in this setting, machine should produce closely spaced purl stitches).
- F. Adjust gage on buttonhole presser foot (fig. 30) to indicate required length of buttonhole. To determine this adjustment, measure size of button and add approximately $\frac{3}{16}$ " to $\frac{1}{4}$ ". The distance from the needle of the machine to the front of the gage should equal this measurement.
- G. Thread machine same as for ordinary sewing (page 7), but use *black* pair of tension discs. Tighten thread tension by turning *black* tension regulating knob about $\frac{1}{4}$ to $\frac{1}{2}$ turn to the right (page 8) to obtain the desired purl stitch effect. To determine the appearance of the buttonhole stitch, sew a row of purl stitches on a scrap of the material which is to have the buttonholes.

Note: Once the "black" tension is set for buttonholes, try to always use it for this purpose. Following this suggestion will prove time-saving, as, once set, very little additional adjustment will be found necessary as you switch from another type of sewing to buttonholes and vice versa.

2. The actual sewing of the button-hole calls for this sequence:

- A. Mark off length of buttonhole on garment.

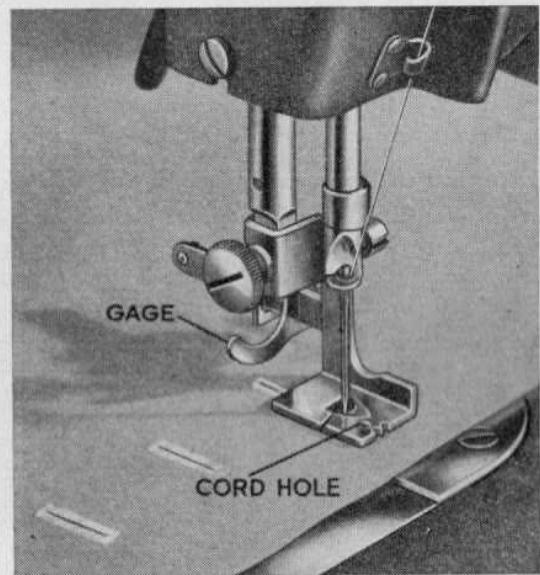
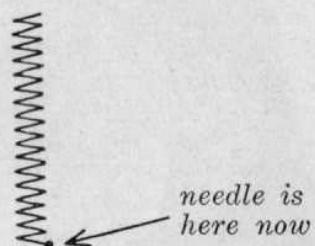


FIG. 30

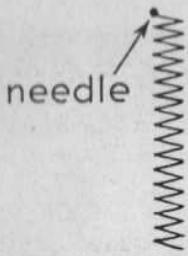
B. Place start of buttonhole under needle and have its end face you. Let down presser foot and begin sewing. Stop when first row of stitches reaches the gage.

C. Turn handwheel toward you until needle makes another right hand stitch. Leave needle in material. What you have sewn up to now should look like this diagram:



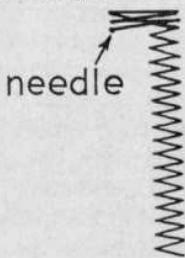
D. Raise presser foot slightly and turn garment clockwise around the needle. The following diagram represents what you should see now:

Lower presser foot and turn

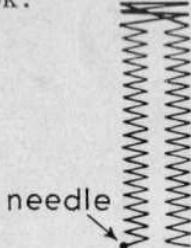


handwheel toward you until needle is above material.

- E. Turn zig-zag regulating knob (23) to marking "4" on dial until it hits the adjustable stop (see page 12). Make 3 to 4 stitches to sew first closing bar and stop machine with needle out of material. The half finished buttonhole will have an appearance as illustrated on this diagram:



- F. While needle is out of fabric, return zig-zag regulating knob to dial marking "2". Make sure that first sewn row of purl stitches passes through right hand groove on underside of buttonhole presser foot. This will automatically provide the correct cutting space between the two rows. Now sew second line of purl stitches. Stop machine with needle out of material. Here is how the almost finished buttonhole will look:



- G. Move zig-zag regulating knob to dial marking "4" and sew 3—4 stitches to complete second closing bar.

The diagram below pictures what the finished buttonhole will be like:



- H. Turn handwheel toward you until needle is out of material. Flick upward knurled catch on zig-zag regulating knob and move same to "0" on dial. Press drop feed button and sew 2 or 3 straight stitches to lock threads.

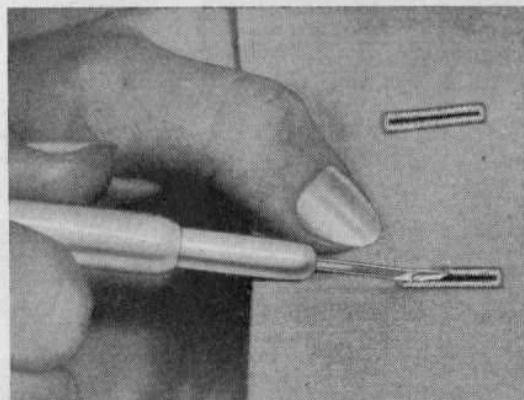


FIG. 31

- I. Insert the cutter at one end of the buttonhole and carefully cut material between the two rows of purl stitches. (See fig. 31).

Note: It is advisable to make one or two sample buttonholes on a scrap of material, same as your garment. If required, make necessary adjustments to obtain desired results.

Corded buttonholes

In soft woolens and, more generally, in all garments where the buttonholes are subjected to extensive wear, a corded buttonhole with gimp inserted is preferable.

Insert gimp from top through small hole in front of half-moon shaped stitch hole in buttonhole presser foot (fig. 30). Draw about 2—3" of gimp toward back of machine. The method of making corded buttonholes is the same as employed in making plain buttonholes, except that there is no need for a particularly tight upper (needle) thread tension.

It is recommended that corded buttonholes be started from the inside of the garment, working toward the edge. The inserted gimp will then round that end of the buttonhole where the stress is greatest and will increase its durability.

Sewing on buttons

Raise needle to highest position by turning handwheel toward you. Remove regular presser foot and attach button sewing foot to presser bar (fig. 32).

Drop feed dog by pressing drop feed button (20) and locking same (page 11). Set starting position knob

(3) for "left" needle position (page 2). Turn zig-zag regulating knob to marking "3½" on dial.

Place garment with button under button sewing foot. Line up holes in button with oblong stitch hole in foot and lower same. Carefully and slowly turn handwheel toward you and check whether needle passes through center of left hole in button. Continue turning handwheel and watch needle enter the right hole in button. If needle does not pass through center of hole, but to the left, turn zig-zag regulating knob until it points to marking "4" or beyond, if required. Conversely, if needle should stitch to the right of the hole, turn zig-zag regulating knob to marking "3".

Having made certain that the needle clears the respective holes in the button, sew 5—6 stitches at an easily controllable speed.

Stop machine with needle out of the button and return zig-zag regulating knob to dial setting "0". Make an additional 3 or 4 straight stitches in left hole of button to lock threads.

When attaching four-hole buttons, first sew one set of holes as described above. Lift presser foot and shift garment to get second set of holes lined up for sewing. Lock threads with 3 plain stitches, same as done with two-hole buttons.

On buttons with four holes decorative designs, such as pictured, can easily be sewn by suitably placing the button under the button sewing foot and by proper adjustment of the zig-zag stitch.



FIG. 32



Overcasting edges

The edges of the material can easily be secured against fraying by

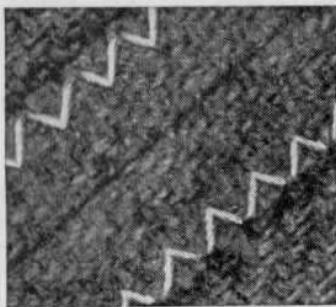


FIG. 33

overcasting them with a zig-zag stitch (fig. 33). Use hinged zig-zag presser foot and set zig-zag regulating knob to marking "2" on dial. Adjust length of stitch by setting stitch regulator knob on marking "2". However, the length and width of the zig-zag stitch should be changed to suit the weight and the weave of the fabric.

Place edge to be overcast under presser foot, so that needle on its right stroke just clears the material.

When overcasting loosely woven material, set both zig-zag and stitch regulators on respective markings "3½" or larger.

Making bar tacks

Bar tacks (fig. 34), such as used for reinforcing the ends of pockets, etc., can be made after adjusting the machine as follows:

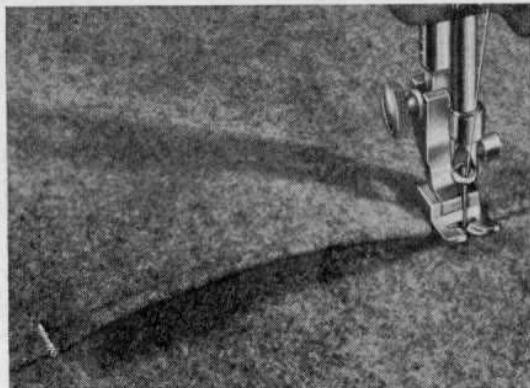


FIG. 34

Set zig-zag regulating knob on "1½" and turn length of stitch regulator to "½". Sew tacks, having an appearance similar to a buttonhole purl stitch, about $\frac{1}{2}$ inch long, across seams at either end of pocket. When tack is completed and needle above the material, return zig-zag regulating knob to "0" and, pressing down drop feed button, sew 2-3 stitches to lock threads.

Narrow hemming — rolled edges

Remove presser foot from presser bar and attach narrow hemmer foot (part no. 15132 marked on shank). See fig. 35.

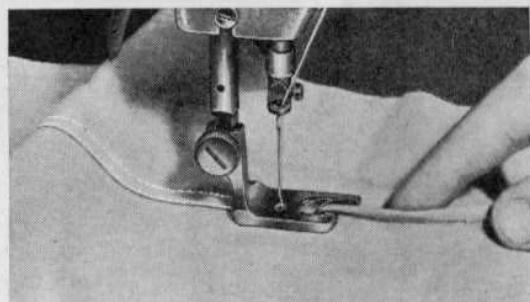


FIG. 35

Set needle position regulator in "central" position and zig-zag regulating knob on dial marking "0". Regulate length of stitch to correspond to the weight of the fabric used.

- a. Prepare fabric by clipping off corner where hemming is to start. Fold over edge about $\frac{1}{8}$ " for a length of 2" and insert this fold from underneath into the spiral shaped opening (scroll) at the tip of the foot.
- b. Carefully move material back and forth in scroll until hem forms itself. Then pull material toward you until start of hem is just below needle.
- c. Lower presser foot and begin sewing. Guide material into

scroll on hemmer foot as the sewing progresses.

During the hemming operation make sure that the material completely fills the scroll on the hemmer foot. Should the edge of the material show a tendency to leave the scroll, guide it more to the right. If too much material is fed into the scroll, it must be guided to the left to avoid crowding or doubling over.

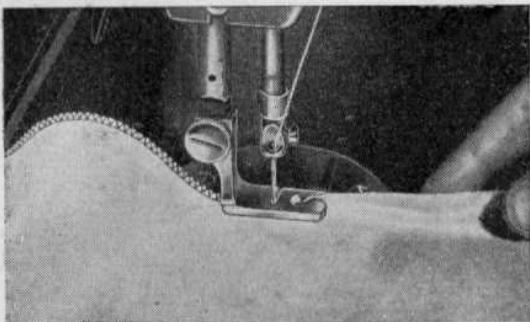


FIG. 36

Instead of straight stitches a zig-zag stitch can also be used to obtain narrow rolled edges (fig. 36). Turn zig-zag regulating knob to "3" and proceed as outlined above.

Shell stitching

Install hemmer foot no. 15134 (fig. 37) on presser bar of machine to produce this kind of stitch. Shell-

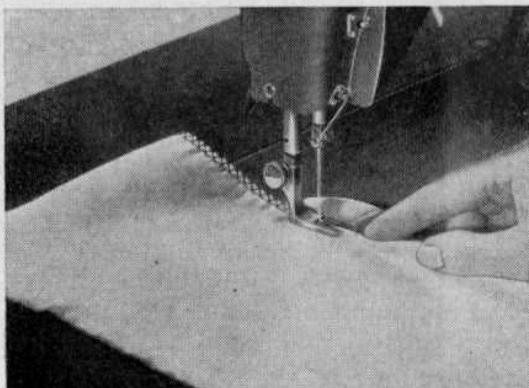


FIG. 37

stitch is most appropriate for use on light weight fabrics, such as silk, rayon or nylon. The instructions given for narrow hemming, page 19, should be followed with the exception that zig-zag regulating knob is to be set at dial marking "4" and the tension of the tension of the upper (needle) thread is to be increased to obtain the shell stitch effect. Also use a rather long stitch to give the individual "shells" a wide spacing.

Zig-zag hemming

For sewing a hem, as shown on fig. 38, hemmer foot no. 15138 is used.

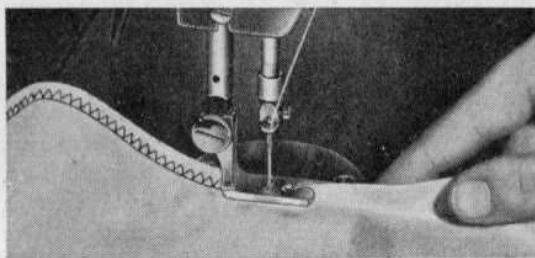


FIG. 38

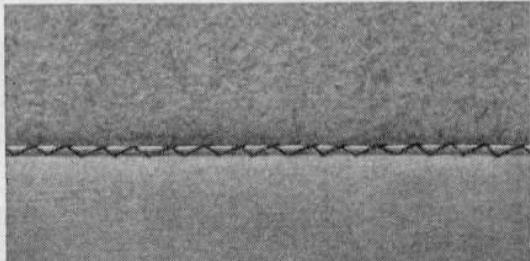
Install this foot on presser bar of machine and make all adjustments as outlined under the heading "narrow hemming". Set zig-zag regulating knob on "2". The appearance of the zig-zag seam can be enhanced by using thread of a different color. Incidentally, this hemmer can also be used for straight stitch hemming.

Blindstitching

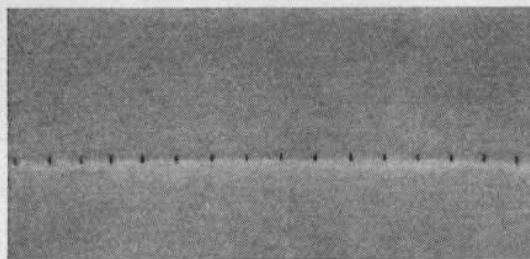
By folding the material and adjusting the machine as described below, a blind hem can be produced without the use of any attachment.

- a. Prepare and baste hem in same way as for hand hemming and turn garment inside out.

- b. Again fold over hem with right sides of material facing each other. Let seam binding project $\frac{1}{4}$ " beyond the edge of fold.
- c. Set zig-zag regulating knob at dial marking 4 or 5 and set length of stitch likewise between markings 4 and 5. Loosen upper thread tension.
- d. Place material under presser foot of machine, so that needle stitches alternately into edge of fold and into seam binding. Be sure that when stitching into edge of fold needle barely catches material (1 or 2 threads), so as to make the stitch as invisible as possible.



"FIG. 39 shows appearance of blind-stitched hem from inside of garment."



"FIG. 40 showing how finished blind-stitched hem appears."

Felled seams

The hemmer feet can also be used for doing felling. Proceed in the following manner:

1. Lay two pieces of cloth one on top of the other with their *right* sides facing each other. The right edge of the bottom piece must extend about $\frac{1}{8}$ " beyond the right edge of the top piece. See fig. 41.

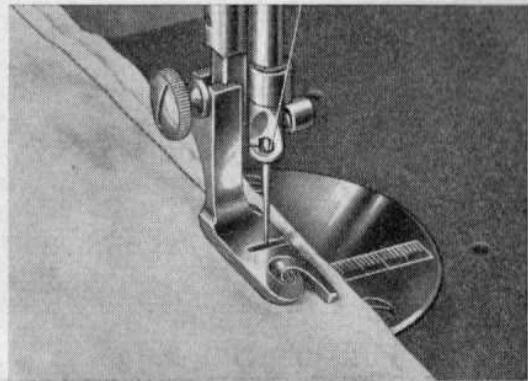


FIG. 41

2. Sew both pieces of cloth together, using the hemmer foot like a regular presser foot. Use the right edge of long toe of hemmer foot to guide the bottom piece of material, while the left edge of the same toe serves as a guide for the top piece of material. Fig. 41 shows this detail.

3. Open and spread out material and put back on machine right sides downward. Make sewn edges of material stand up.

4. Fold over the edges to the left and insert them into the scroll of the hemmer foot. Sew as you would do ordinary hemming. Use left edge of long toe of hemmer foot as guide, having original seam run alongside of it. (Fig. 42.)

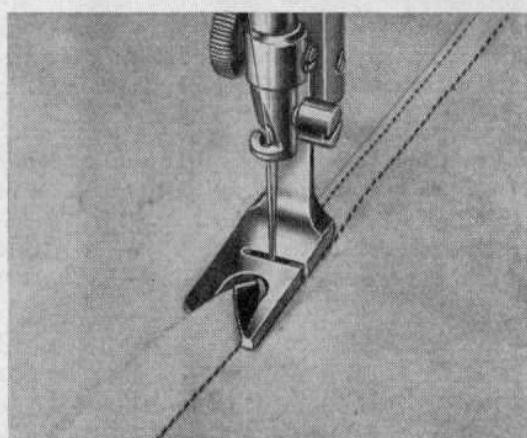


FIG. 42

Quilting

a. with quilting guide for wide spacing: Insert quilting guide from right to left or from left to right through hole in presser bar just above shank of presser foot. From the rear turn knurled thumb screw into screw hole in presser bar. Slide quilting guide in or out and set it to the desired distance from the needle.

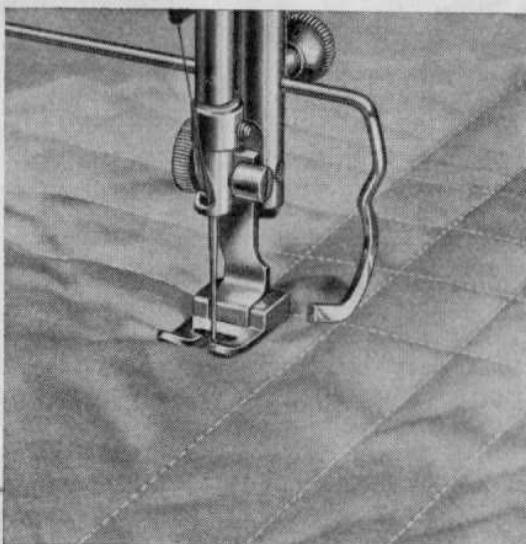


FIG. 43

Using either straight or zig-zag stitch, sew first line. To sew subsequent parallel lines, move fabric to right until curved bottom of quilting guide is right above preceding row of stitches. (Fig. 43.)

b. with adjustable guide presser foot for narrow spacing: Remove hinged zig-zag presser foot and install narrow presser foot with guide attachment seen in fig. 44. Leave presser foot in raised position.

Loosen thumb screw in back of presser foot and slide guide in or outward to desired distance from needle. Tighten thumb screw to lock guide in place.

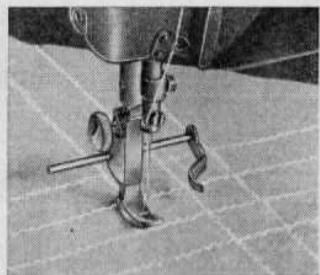


FIG. 44

To produce parallel rows of stitching, follow procedure outlined under paragraph a.

Cloth guide

Passing of the material along the adjustable guide of the presser foot with guide attachment will permit stitching parallel to an edge, such as pictured on fig. 45.

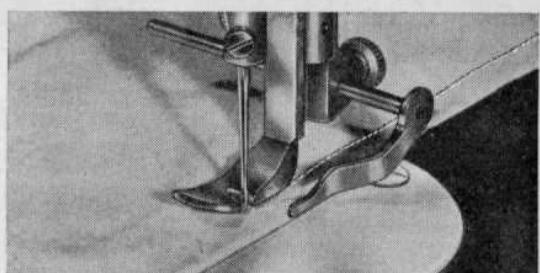


FIG. 45

Note: To use this presser foot for attaching zippers, remove the adjustable guide.

Cording and braiding

Remove zig-zag presser foot from machine and attach presser foot with cord hole shown on fig. 46.

Introduce cord or gimp from front in cord hole and draw about 2—3 inches past foot. Set starting position knob (3), page 2, in central position. Adjust zig-zag regulating

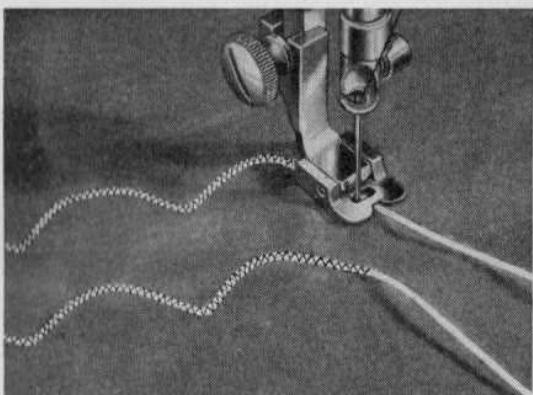


FIG. 46

knob, so that needle stitches into material at either side of cord. Regulate length of stitches, so that they become closely spaced. When braiding make widely spaced stitches to leave the cord visible.

Attaching lace edging

Set starting position knob (3), page 2, in "central" position. Regulate width of zig-zag and length of stitch to suit the particular kind of fabric on which you are sewing.

Turn cut edge of material under a trifle more than $\frac{1}{8}$ ". Place edge of lace closely against fold of material which should be centered under presser foot. Lower presser foot and start sewing, making sure that needle stitches alternately into material and lace.

Trim turned-under edge close to zig-zag stitches.

Lace insertions

Prepare machine in same way as for attaching lace. Baste lace insertion into right side of material. Using fine needle and thin thread, follow edge of insertions with short and narrow zig-zag stitches. Be sure that needle stitches alternately into material and into lace insertion.

After insertion is completely attached, turn material over and trim to about $\frac{1}{8}$ " from edge. Roll back trimmed edge and stitch it down with short, straight stitches.

Applique

Flowers, initials and other decorations can effectively be appliqued onto tablecloths, pillows, bedthrows and garments by first basting onto the article a piece of material on which the desired design has been outlined.

Adjust machine to sew closely spaced zig-zag stitches of about $\frac{1}{16}$ " to $\frac{3}{32}$ " width and place article under the presser foot. Align edge of design with center of presser foot. Start sewing, following the contour of the design. (See fig. 47.)

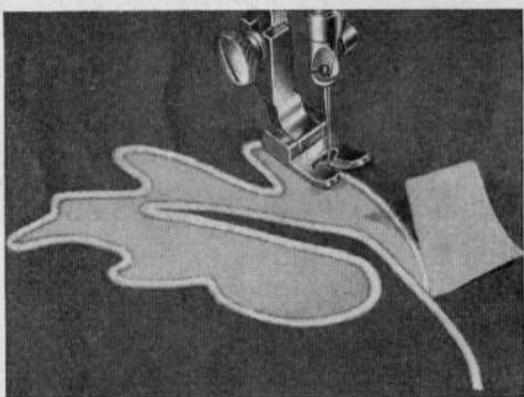


FIG. 47

After the design has been attached all round, trim excess of material with embroidery scissors. Follow closely the contour of the design, but guard against cutting the stitching. To obtain a still more beautiful edge of the applique, start the work by sewing the contour of the design with narrow short zig-zag stitches obtained by setting zig-zag regulating knob to marking "2" on dial. Trim excess of material with care and stitch along trimmed edge with clo-

sely spaced zig-zag stitches, turning zig-zag regulating knob to dial marking "3". Designs to be appliqued can also be cut out before being attached with zig-zag stitches.

Operation of the ruffler

The ruffler, included with the attachments of the machine, will be found a convenient device for doing all kinds of ruffling, plaiting and gathering. To operate the ruffler, follow this procedure:

a. Attaching the ruffler: Turn handwheel toward you until needle is at highest position. Remove presser foot and also presser foot thumb screw. Slip fork arm "B" of ruffler (fig. 48) over needle set screw (11) extending from the needle clamp (12) to the right. See fig. 1. At the same time enter foot "A" on presser bar. Reinsert presser foot thumb screw and tighten. Ascertain that starting position knob is set at the "central" position and that zig-zag regulating knob is turned to "0". Carefully turn handwheel and check if needle passes through center of needle hole in ruffler foot.

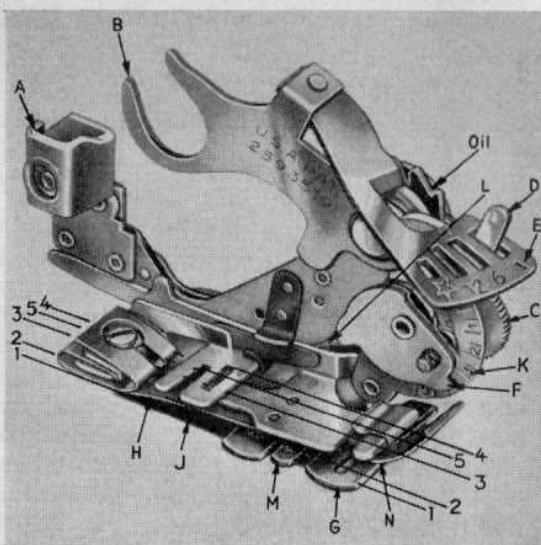


FIG. 48

b. Description of Ruffler:

- A — FOOT which is attached to presser bar.
- B — FORK ARM must be placed astride the needle clamp.
- C — ADJUSTING SCREW. Holds fullness of gathers or plaits.
- D — PROJECTION. Fits through slots in adjusting lever.
- E — ADJUSTING LEVER. Used to set the ruffler for gathers or plaits.
- F — POINTER. Determines size of plait or fullness of gathers.
- G — SEAM GUIDES. On ruffler separator.
- H — RUFFLING BLADE. The upper blue steel blade with teeth at end.
- J — SEPARATOR. The lower blue steel blade which prevents feed blade contacting feed of machine.
- K — DIAL has numbers from 1 to 8 which aid in setting fullness of ruffle.
- L — HEADING GUIDE can be adjusted for different size headings.
- M — LIP which separates seam guides.
- N — SLIDING GUIDE can be adjusted for different width seams or headings.

Line 1 — is under the ruffler and indicates the position to which ruffle is to be stitched giving a $\frac{1}{4}$ inch seam.

Line 2 — between the blue blades where the feed blade will gather or plait material with a $\frac{1}{4}$ inch seam.

Line 3 — the upper piece of material used when ruffle is enclosed between two pieces of material.

Line 4 — Guide for piping strip.

Line 5 — for edgestitching material to ruffle that is entered from right.

c. Gathering a ruffle:

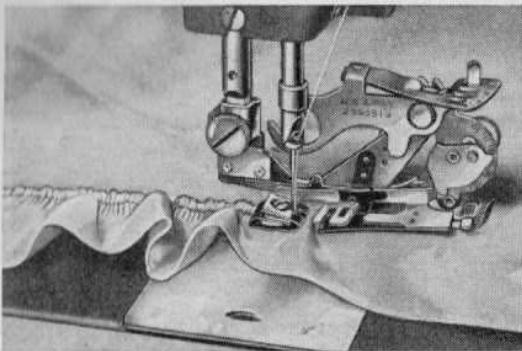


FIG. 49

The ruffle will make ruffling and plaiting in uniform fullness or, with simple adjustments, can be made to vary fullness of ruffle and accomplish grouping of plaits or gathers without removing ruffler from machine.

Slot 1 on adjusting lever "E" must always be over projection "D" for gathers, as shown in fig. 49.

Place material to be gathered between the blue blades of the ruffler following line 2. Push forward until material is under the needle, lower presser bar and be ready to stitch.

To make a scant gather, put slot 1 on adjusting lever "E" over projection "D". Loosen adjusting screw "C" and set pointer "F" at figure 1 or 2 on dial "K". Tighten the adjusting screw "C" securely and test fullness of gathers.

By setting pointer "F" at different numbers, and changing the length of machine stitch, a variation from a scant to a full ruffle will result.

d. Plaiting a Ruffle:

The widest plait is obtained when pointer "F" on dial "K" is as far forward as possible, away from you, number 8 on dial "K".

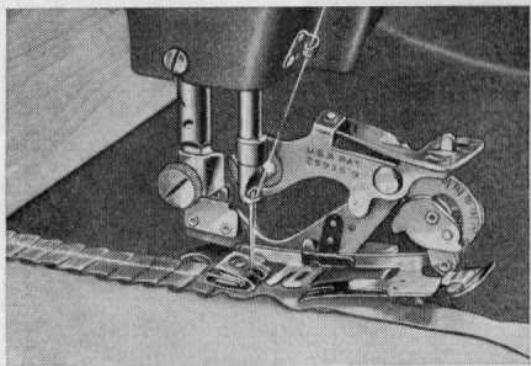


FIG. 50

To set ruffler for plaiting, loosen adjusting screw "C" and set pointer "F" at 8 on dial "K". Tighten adjusting screw "C" securely.

Plaits can be stitched close, or far apart, by placing slot 6 or 12 in adjusting lever "E" over projection "D". For plaits set close together, place slot 6 over projection "D". Place slot 12 over projection "D" for plaits stitched farther apart. Changing the stitch length on sewing machine will produce different spacings. (Fig. 50)

Plaits in groups can be accomplished with this ruffler. Set slot 6 on adjusting lever "E" over projection "D". Stitch, making the number of plaits desired in a group. Place slot with star on adjusting lever "E" over projection "D" and stitch without any action from the ruffler until desired space between groups is obtained. Place slot 6 on adjusting lever "E" over projection "D" for each successive group of plaits and place slot with star on projection "D" for each space.

e. Gathering material and sewing it to garment:

To gather and sew a ruffle to a garment in one operation, place material to be ruffled between the blued blades of the ruffler following line 2 and place garment to which ruffle is to be applied under the ruffler



FIG. 51

following line 1. To add a facing at the same time, place the facing on top of the blued blades following line 3. (Fig. 51)

To pipe and enclose ruffler in facing, place edge for facing under ruffler from left following line 1. Enter ruffle to be gathered between blue blades following line 2. Cut a decided point in piping that has been folded and cut $\frac{1}{4}$ inch wide and enter it in piping guide "H" with fold of piping toward the left. Place garment over all, guiding its seam edge along the slide of ruffler. Turn facing to the wrong side and fasten to garment.

Knee operation of presser foot lifter and zig-zag movement

The Viking Class 33, when equipped for knee operation, will permit raising and lowering of the presser foot and also adjustment of the width of zig-zag stitches without using ones hands. Thus both hands are left free to place the material either under the needle or to remove it from there or else to guide the material to be embroidered depending on how hook "H" at the rear of the arm is connected.

Figure 52 shows a view of the rear of the machine pointing out hook "H" connected with the hori-

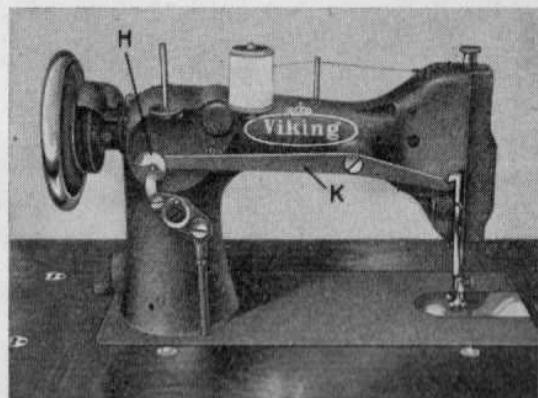


FIG. 52

zontal lifter arm "K". This arrangement permits the knee lifter to raise or lower the presser foot.

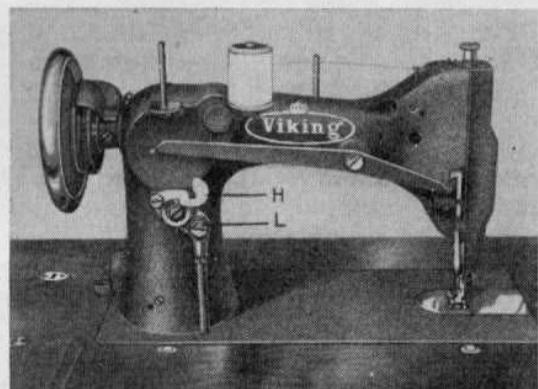


FIG. 53

For embroidery, hook "H" is turned downward in clockwise direction until it engages a small block projecting from the hub of the oval shaped link "L".

On cabinet-installed lifters hold link "L" while shifting hook "H".

Hemstitching

Draw the desired number of threads from the material, as is customary when hemstitching by hand.

Prepare machine by adjusting length of stitch to suit the weight

of the material. Use short stitches when sewing batiste, cotton etc. When hemstitching coarser material, use a correspondingly larger stitch. Set zig-zag regulating knob to dial marking "1". Starting position knob remains in the "central" position.

Place material under presser foot and sew along one edge where the threads have been drawn. Be sure that needle stitches alternately into the solid material and into the space where the threads have been pulled. Upon completion of one edge, follow the same method to stitch the other edge. (Fig. 54.)

By cutting along the center of the hemstitching, a PICOT edge can be obtained.

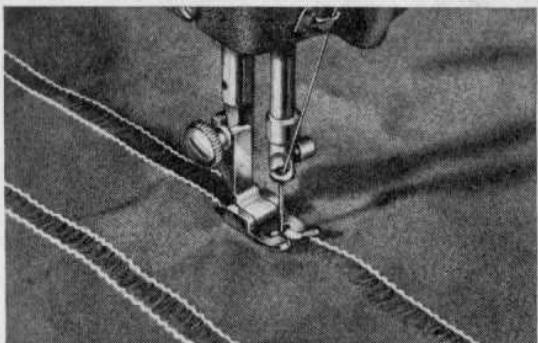


FIG. 54

Another method of producing a picot edge is to turn over the cut edge of the material and to sew along the fold with the needle stitching alternately inside and outside the goods. Set length of stitch to marking "1½" and turn zig-zag regulating knob to dial marking "2".

Special equipment for the Viking Zig-Zag machine.

(available at extra cost):

1. THE TWO-NEEDLE ATTACHMENT:

When adapted for two-needle sewing, the Viking Class 33, in addition to all possible plain and zig-zag stitching, will produce a variety of decorative seams which lend themselves magnificently to use on dresses, linens, lingerie and other items.

a. Attaching the two-needle clamp: Turn handwheel toward you until needle reaches its highest point. Remove single needle clamp (12) used for all ordinary straight and zig-zag sewing (fig. 55) by loosening screw (37).

Pull single needle clamp downward off the needle bar. Exercise care to avoid damage to the needle or other parts of the sewing mechanism. Push

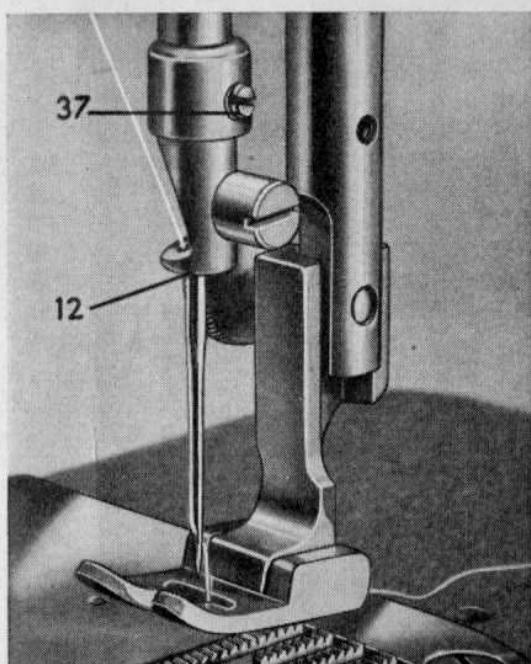


FIG. 55

two-needle clamp (fig. 56) on needle bar as far as it will go.

Tighten set crew (M) on right side of clamp, making sure that screw enters notch at side of needle bar.

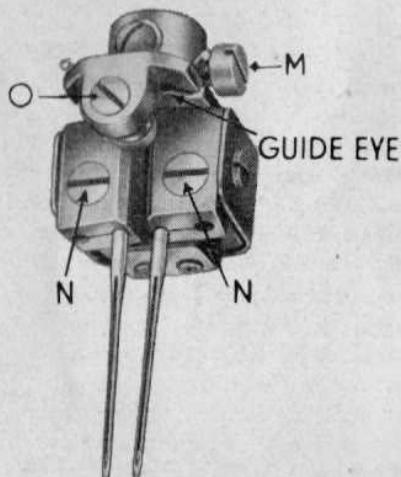


FIG. 56

b. Inserting new Needle in Two Needle Clamp: To remove old needles, loosen needle set screw (N), shown in fig. 56. New needles must be inserted with *long* groove facing the user. (The needles' eyes must be in the direction of sewing.) Push needles up into needle clamp as far as they will go. Tighten needle set screws (N) securely and convince yourself that both needle eyes are on the same level and face forward. To determine the correct size of needles and thread consult table on page 4.

c. Threading the machine for Two-Needle Sewing: To thread machine for two-needle operation follow the instructions on page 8. Note, however, that two spools of thread are required. Pass each thread through its individual guide hole in the thread guides on top and at the side of the arm and use separate pairs of tension discs.

Then pass each thread from right

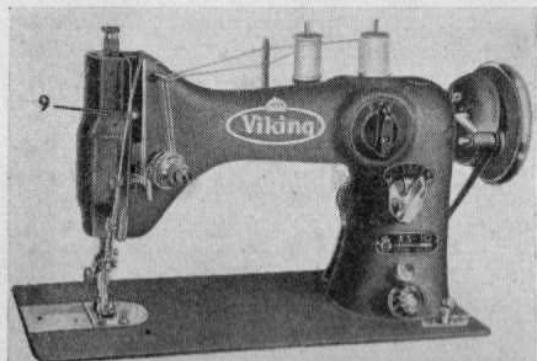


FIG. 57

to left through its own individual hole in the take-up lever. Run threads downward along the side of the face plate through the two guides thereon. Then pull threads from behind through the left and right guide eyes in front of the two-needle clamp (fig. 56) thread the needles from front to back.

d. Adjusting the Needle Distance:

The distance between the two needles can be varied from about $5/64"$ to more than $3/16"$ by turning screw (O) at the front of the needle holder (fig. 56). When sewing thin material, keep needle distance as small as possible. On heavier goods use greater needle distance.

Sewing "straw" folds with the two-needle attachment

For sewing "straw" folds or pin pleats, remove the regular zig-zag needle plate from the machine and

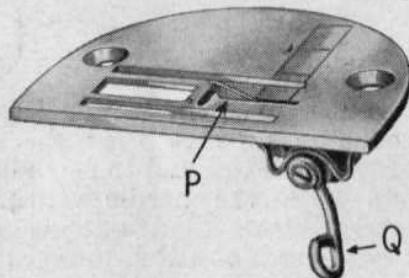


FIG. 58.

install the needle plate with the adjustable folder blade picture in fig. 58.

Depending on the kind of material used, the folder blade (P) should be raised or lowered or retracted altogether by turning lever (Q) at the underside of the needle plate.

a. *Width and Height of the "Straw" Folds* depend primarily on the material used. Of course, they are also subject to style and individual taste. It is, therefore, recommended that a sample be made on a scrap of the same fabric before working on a garment. Furthermore, if the "straw" folds are to be made in different directions, this should also be tried. The grain of some types of material will not allow the sewing of folds across or on a bias.

Thin dressgoods — use size 9 needle, closest needle distance, do not raise folder blade above surface of needle plate. Upper and lower thread tensions should be quite tight. Use presser foot with five narrow grooves at bottom shown in fig. 59.

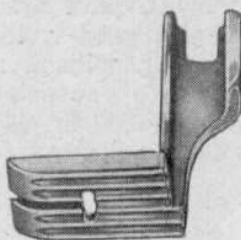


FIG. 59

Heavier dressgoods — use size 11 not raise folder blade above needle plate. Maintain normal thread tensions. Use presser foot with five narrow grooves (fig. 59).

Light Woolens — use size 11 needle, needle distance to suit weight of fabric. Raise folder blade about halfway. Maintain normal upper and lower thread tensions. Use presser foot with five narrow grooves.

Woolen Suiting and Coat Material — use size 14 needle, medium or wide needle distance. Raise folder blade completely. Maintain normal upper and lower thread tensions. Use presser foot with wide single groove at underside.

b. *Parallel "Straw" Folds*: The five grooves at the bottom of the presser foot shown in fig. 59 can be used as guides to sew a parallel fold to one already made. Let the preceding fold "ride" in one of the grooves depending on the desired spacing and a whole group of folds can be spaced exactly alike. (Fig. 60.)

Should a wider spacing of the folds be required than is possible with this presser foot, the quilting guide (fig. 43) may be used.

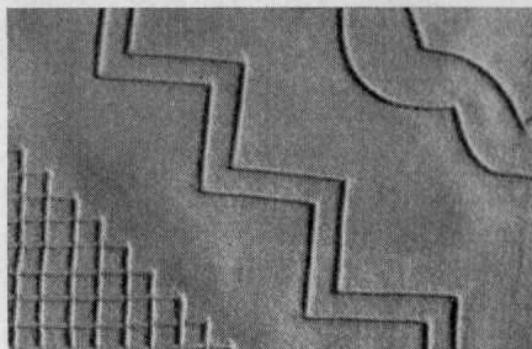


FIG. 60

This guide is inserted through a hole in the presser bar just above the presser foot shank and held in place by a knurled thumb screw which screws into the presser foot bar from the rear.

c. *Sewing Corners and Angles*: Leave the needles in the material and turn the material in the desired direction. Needles should preferably be on the upward stroke. When acute angles are to be sewn, it is advisable to first turn the material halfway, then make a single stitch and finally turn the material in the selec-

ted direction. Be sure at all times to use the needles as pivots and to leave them in the fabric.

d. Sewing Curved Seams: To sew raised double seams, pin pleats or "straw" folds in figures or curves install the presser foot pictured in fig. 61 on the presser bar of the machine.

It has recesses on the underside which facilitate the turning of the material and keep the finished folds from being flattened out.



FIG. 61

e. Sewing Raised Seams with Cord Insertion: This operation requires the use of the regular zig-zag needle plate which is normally installed on the machine. Also attach to presser bar the two needle presser foot with the five wide grooves. Furthermore the cord reel holder, shown in fig. 62, must be screwed to the underside of the sewing machine table.

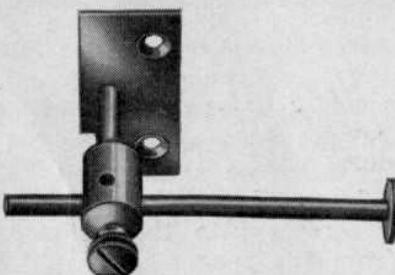


FIG. 62

Loosen the knurled head thumb screw on the cord reel holder and pull from its bracket the long rod with the button shaped head. Insert the rod through the center hole of the cord reel and replace rod on its bracket. Tighten knurled head

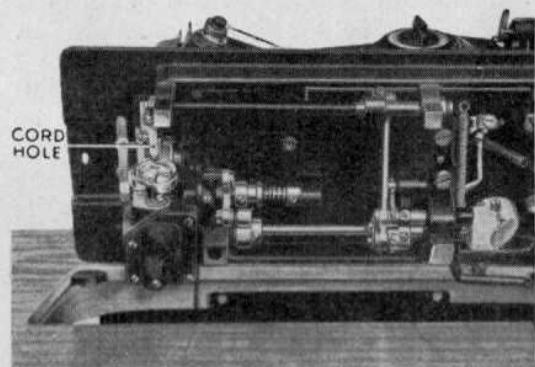


FIG. 63

thumb screw, making sure that the cord reel spins freely.

Pull cord from reel and insert it through the cord hole in the bobbin case position finger at the underside of the machine (fig. 63).

Then insert the cord from below through the cord hole in the zig-zag needle plate. (The cord hole in the needle plate is the round hole in front of the oblong needle hole.) Pull up the lower (bobbin) thread through the needle hole and draw it, the upper (needle) thread and the cord away from you under the presser foot. Adjust for widest needle distance and place material on machine. Commence with sewing and guide material as desired.

Double needle cording

To sew two cords to fabric simultaneously, attach to the presser bar the double cording foot with the two cord holes in front of the oblong needle hole (fig. 64).



FIG. 64.

Adjust needle distance to be slightly wider than the thickness of the cord which is to be attached. Set starting position knob at "central" needle position. Turn zig-zag regulating knob to dial marking "1½" or

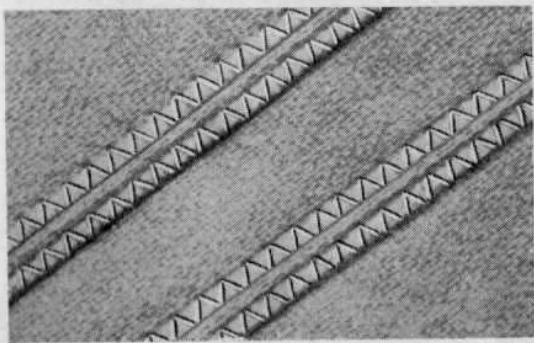


FIG. 65

"2". Make certain that both needles stitch into the material at both sides of the cords. (Fig. 65.)

For further details see "Cording and Braiding", page 23.

Caution: Do not turn zig-zag regulating knob any further than marking "3", as otherwise the needles will strike the needle plate and damage it and the needles themselves may break.

2. EYELET EMBROIDERY ATTACHMENT:

With the aid of the eyelet embroidery attachment, available at extra



FIG. 66

cost, the Viking Class 33 permits the sewing of eyelets for embroidery, belts or lacing (fig. 66).

Eyelets can be made on nearly all types of fabric, those tightly woven and not excessively heavy being preferable.

The thread for sewing eyelets should be selected corresponding to the kind of material used.



FIG. 67

For sewing eyelets prepare machine and work as follows:

- a. Remove presser foot from presser bar.
- b. Pull slide plate in bed of machine to the left as far as it will go.
- c. Select eyelet embroidery cover plate with center stud matching the desired size of eyelet ($\frac{1}{8}$ ", $\frac{3}{16}$ " or $\frac{1}{4}$ " diameter, (fig. 67). Push it from left to right as far as it will go onto needle plate on machine. Make sure that clasps at underside of cover plate hug tightly the underside of the needle plate.
- d. Set starting position knob to "left" needle position. Turn handwheel of machine toward you, making sure that needle passes through center of stud in cover plate.
- e. Adjust zig-zag regulating knob to marking "3" on dial. (Needle, on right hand stitch, should enter material well past the edge of hole.)
- f. Stretch material tightly over an embroidery hoop and punch

holes in material where marked. Holes should be punched small enough to fit snugly over the center stud of the respective cover plates, as this will produce better looking and more uniform eyelet embroidery.

Small holes with stronger edge can be obtained by piercing them with a bodkin or stiletto rather than cutting them with a punch.

Note: To keep eyelet punches (fig. 68) sharp, place a wooden block or cardboard under the material when cutting.



FIG. 68

- g. Adjust thread tensions by slightly loosening the tension of the needle (upper) thread. Increase somewhat the tension of the bobbin (lower) thread to obtain a desirable appearance of the eyelet embroidery.
- h. Place punched hole in material over center stud on cover plate. Turn handwheel toward you to pick up the bobbin thread, hold it and the needle thread down onto the cloth when making the first few stitches.
- i. Start sewing, turning the embroidery hoop two to three times slowly and uniformly clockwise around the center stud in

the cover plate. To lock the threads of the embroidery eyelet, return zig-zag regulating knob to "0" and sew once around with straight stitches.

- j. Even out the completed eyelet by turning a bodkin (stiletto) in it a few times.

3. SHIRRING AND GATHERING:

Shirring and gathering can be done conveniently with the shirring foot which is available from your dealer at extra cost.

To do shirring and gathering, remove the regular presser foot from the presser bar and install the special shirring foot (fig. 69).

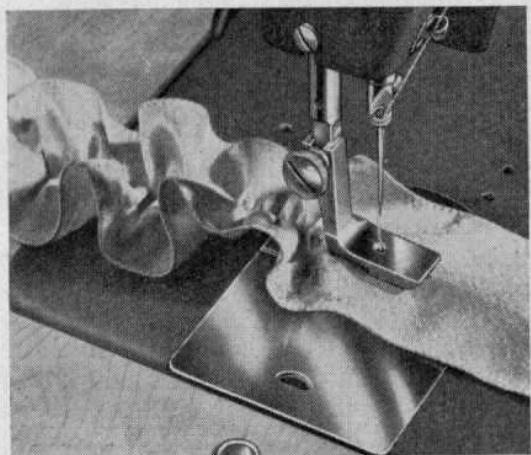


FIG. 69

Be sure to set starting position knob at "central" position and to turn zig-zag regulating knob to marking "0" on dial before starting to sew.

To obtain maximum fullness of the gathers adjust machine to make long stitches and slightly tighten the upper (needle) thread tension.

4. ATTACHING ZIPPERS AND DOING CORDING:

The special zipper and cording feet shown in figs. 70 & 71 are likewise available as extra equipment.

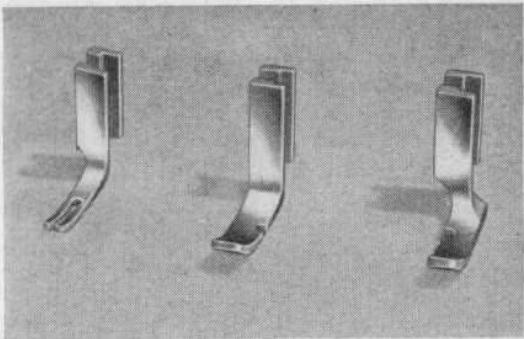


FIG. 70

These special presser feet are attached to the presser bar instead of the regular presser foot. Likewise, before sewing, be certain that the starting position knob is set at the "central" position and that zig-zag regulating knob is turned to "0".

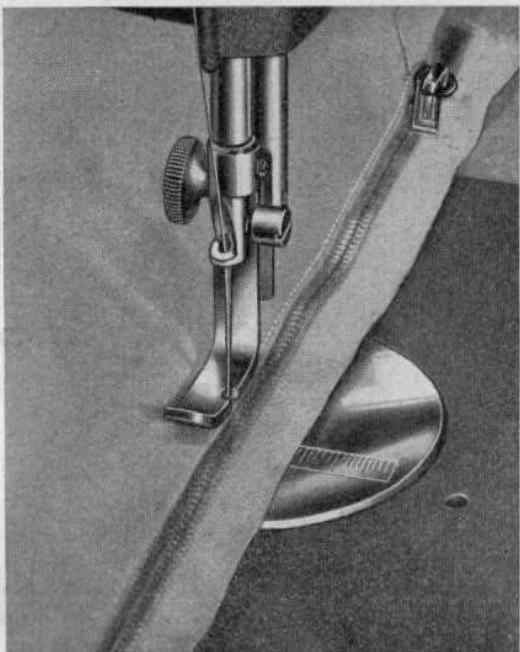


FIG. 71

Oiling and cleaning the machine

The Viking Class 33 Zig-Zag Sewing Machine, like any precision-made piece of machinery, will always re-

tain its smooth and silent operating qualities if it is properly attended to and oiled regularly.

The arrows on fig 72 indicate those oil holes on top of the machine which require one or two drops of a *good grade of sewing machine oil* every working day. Should

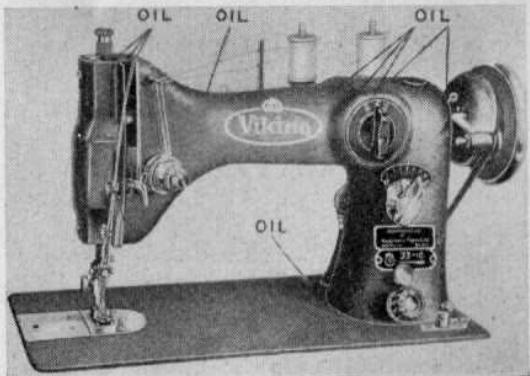


FIG. 72

the machine be used at less frequent intervals, it must be oiled *before* starting to work. Do not oil machine excessively, as the oil will run off and soil the material.

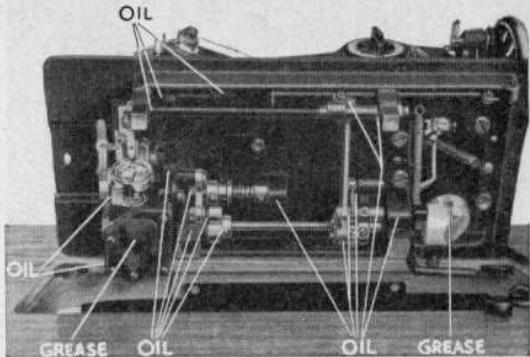


FIG. 73

Fig. 73 shows the oil holes and spots to be lubricated at the under-side of the machine bed.

When the machine is tilted back, also give one drop of oil onto flange of the bobbin case holder of the rotary hook pictured on fig. 74.

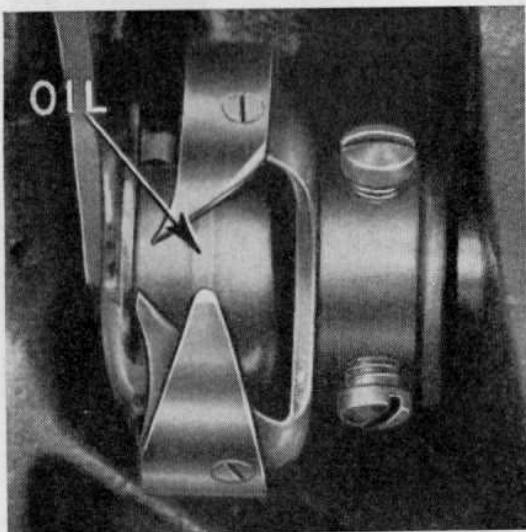


FIG. 74

To be able to apply the oil to said flange, turn the handwheel toward you until the rotary hook is in a position as illustrated in this figure.

At certain intervals when used occasionally, and daily when sewing

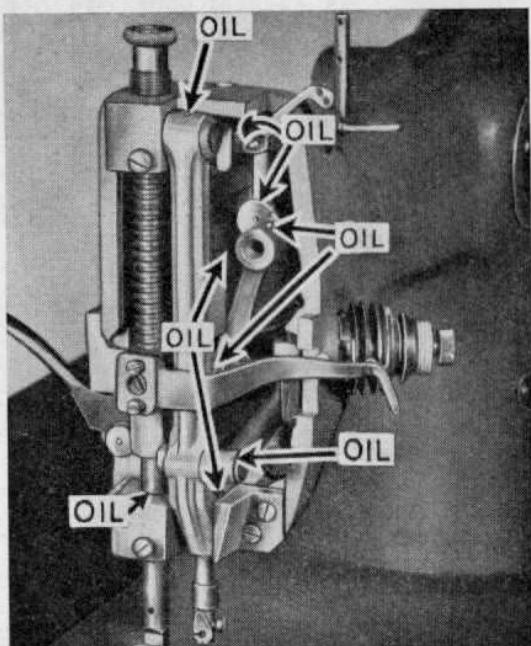


FIG. 75

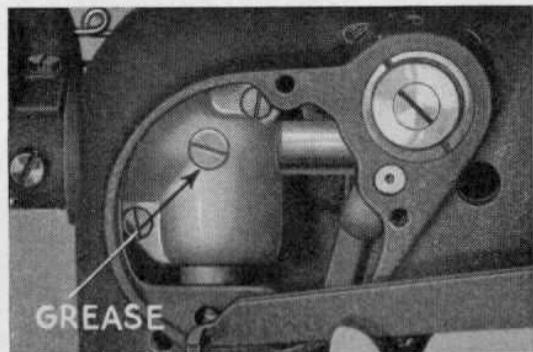


FIG. 76

continuously, the face plate should be removed from the front of the arm for the purpose of giving one or two drops of oil to the various linkages and joints of the needle bar and zig-zag mechanism visible on fig. 75.

There are three gear cases in the Viking Class 33 machine which are filled with gear grease. Two of these gear cases are shown on fig. 73, while the third one is in the upper part of the arm and is accessible upon removal of the arm back cover plate (fig. 76). Once a year unscrew the filler plugs from these gear cases and replenish the grease.

After the machine has been oiled, wipe its top surfaces and sew a length of seam on a scrap of material to make sure that the machine sews without soiling.

To clean machine, remove face plate and push the bed slide plate to the left. Using the small brush included with the set of attachments, remove all accumulations of loose threads, lint and fuzz from the exposed parts of the mechanism in the arm and underneath the bed of the machine.

In order to keep the feeding mechanism operating properly, also brush all lint and other matter from the teeth of the feed dog.

Causes of the most common sewing machine troubles and their remedies

Hard Running of Machine:

1. Motor belt too tight or has jumped off motor pulley or hand wheel.
2. Machine lubricated with unsuitable, gummy oil. Pour a few drops of kerosene into each oil hole and run machine for a few minutes. Then lubricate with proper sewing machine oil.
3. Bobbin winder not released; is running while sewing.
4. Thread caught in rotary hook. (See page 36 on how to correct).

Machine not feeding properly:

1. Make sure stitch regulator knob is not set on "0". (Refer to page 9 on "Regulating the Length of Stitches").
2. Feed dog in dropped position. Raise feed dog pursuant to instructions contained in chapter on "Lowering Feed Dog", page 11.
3. Pressure of presser foot not sufficient. Increase pressure by turning regulator bushing clockwise. Also see "Regulating the Pressure of the Presser Foot" on page 8.

Sewing Mechanism stops while sewing:

1. Stop motion knob (1) not tightened sufficiently. See page 5, fig. 2.

Irregular winding of Bobbin:

1. Machine not threaded correctly for winding.
2. Thread jumped out of tension device (26), fig. 3, page 5.
3. Tension device (26) not in correct position. Adjust following instructions on page 6.

Needle Thread breaks:

1. Needle inserted incorrectly (refer to page 5).
2. Needle not threaded properly (page 7).
3. Tension of needle thread too tight.
4. Knots in thread.
5. Needle too fine for thread used. Check chart on page 4.
6. Needle bent or needle point broken. Change needle.
7. Stitch hole in needle plate rough or sharp. Repair or replace.
8. Point of rotary sewing hook damaged. Have it repaired and repolished.

Bobbin Thread breaks:

1. Bobbin case not inserted correctly (page 7).
2. Bobbin thread tension too tight (see page 10).
3. Bobbin wound unevenly.
4. Bobbin wound too fully.
5. Poor thread.
6. Stitch hole in needle plate rough or sharp. Repair or replace needle plate.

Bobbin Thread cannot be pulled up:

1. Needle is inserted incorrectly (page 5).

Needle breaks:

1. Needle bent. Insert new needle.
2. Pulling material from behind needle while sewing. (do not help machine feeding material).

Skipping Stitches:

1. Needle bent or blunt. Insert new needle.
2. Needle inserted incorrectly. Refer to page 5.
3. Needle threaded improperly. See page 7.
4. Wrong size of needle used.
5. Thread too heavy for needle.
6. Pressure of presser foot insufficient, especially when sewing on heavy material. See page 8.

Loose Stitches — Loops on underside of Material:

1. Machine not threaded correctly.
2. Presser foot not let down completely.
3. Insufficient tension of needle thread. See page 10.
4. Thread take-up spring (7), fig. 1, bent or broken. Repair or replace.

Poor Stitches — bad looking Seam:

1. Thread wound unevenly on bobbin. See page 6.
2. Upper thread tension too tight or too loose. See page 10.
3. Bobbin thread too coarse. Should be same as needle thread or even somewhat finer. Refer to "Needle and Thread Selector", page 4.
4. Needle thread too coarse for material.
5. Needle not suited for material.
6. Needle point damaged.

Uneven Thread Tension:

1. Poor quality of thread.

Wrinkling of Material:

1. Needle thread tension too tight.
2. Needle and bobbin thread tensions too tight for material used.

3. Presser foot pressure too great. Turn regulator bushing (32) to left (fig. 10, page 8).

Stitches of varying Lengths:

1. Feed dog is clogged with lint. Clean it out.
2. Worn teeth in feed dog. Replace feed dog.

Loosely stitched Seams:

1. Upper (needle) and lower (bobbin) thread tensions too loose. See page 10.

Cloth is chewed up:

1. Pressure on presser foot too tight. See page 8.

Sewing Hook gets jammed:

1. Threads or lint caught in bearing groove of bobbin case holder. To free sewing hook, forcefully rock handwheel back and forth a few times.

Important note:

Do not try to repair the machine yourself if it fails to operate satisfactorily after having followed the aforementioned suggestions. Only your Viking dealer, by virtue of his skill and experience, is qualified to service your machine competently and is able to maintain its outstanding performance.

Standard equipment of Viking class 33 zig-zag sewing machine

With every Viking "33" Sewing Machine the following accessories and attachments are included:

Number	Description	Quantity
S 15132	Hemmer Foot $\frac{3}{32}$ " for rolled hems	1
S 15134	Hemmer Foot $\frac{1}{8}$ " for shell stitching	1
S 15138	Hemmer foot $\frac{5}{32}$ " for zig-zag seams	1
S 15173	Buttonhole Presser Foot	1
S 15399	Buttonhole Knife	1
S 15159	Cording or Zipper Foot, left hand, with adjustable guide	1
S 15165	Presser Foot for straight sewing	1
S 15172	Button Sewing Foot	1
S 15166	Zig-Zag Presser Foot, hinged (installed on machine)	1
S 15169	Zig-Zag Foot, hinged, with cord hole	1
S 10976	Needle Plate for straight sewing	1
	Presser Foot for darning and mending	1
	1—6—12 Stitch Ruffler	1
S 10743	Bobbin	5
	Needles, Style 16×95 sizes 11, 14 and 16	6
4018	Quilting Guide	1
3038	Awl	1
3045	Screw Driver, large	1
3046	Screw Driver, small	1
S 15010	Cleaning Brush	1
S 15038	Oil Can	1
S 15036	Bottle of Sewing Machine Oil	1
S 15338	Attachment Box	2
	Instruction Manual	1

Special equipment for Viking class 33 zig-zag sewing machine

The following accessories and attachments are available from "Viking" dealers and agencies at extra cost:

1. Two-Needle Attachment

Number	Description
S 15348	Needle Clamp for two Needles, compl.
S 15168	Presser Foot, fixed, for Zig-Zag sewing, with two cord holes
S 15187	Presser Foot for narrow, curved and raised seams
S 15189	Presser Foot with five grooves for medium heavy cloth
S 15190	Presser Foot with one groove for heavy cloth
S 15191	Cord Reel Holder, complete
S 15345	Needle Plate for raised seams
S 15359	Presser Foot with five grooves for thin cloth

2. Eyelet Attachments

Number	Description
S 15202	Cover Plate for $\frac{1}{8}$ " Eyelets
S 15205	Cover Plate for $\frac{3}{16}$ " Eyelets
S 15207	Cover Plate for $\frac{1}{4}$ " Eyelets
S 15209	Hole Punch for $\frac{1}{8}$ " Eyelets
S 15210	Hole Punch for $\frac{3}{16}$ " Eyelets
S 15211	Hole Punch for $\frac{1}{4}$ " Eyelets

3. Accessories — Special Presser Feet

Number	Description
S 15115	Hemmer Foot $\frac{3}{32}$ " for straight seams
S 15118	Hemmer Foot $\frac{1}{8}$ " for straight seams
S 15124	Hemmer Foot $\frac{1}{4}$ " for straight seams
S 15130	Hemmer Foot $\frac{7}{16}$ " for straight seams
S 15136	Hemmer Foot $\frac{1}{8}$ " for zig-zag seams
25985	Shirring Foot
31358	Cording Foot, left
12435	Cording Foot, right
165010	Cording Foot, left and right

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