

**INSTRUCTION - BOOK**

# **BERNINA**

*Favorit*

**Model 540**  
Automatic Sewing Machine  
and  
**Model 542**  
Zigzag Sewing Machine



## TABLE OF CONTENTS

Guarantee . . . . .	1
Bobbin Case and Bobbin . . . . .	10
Removal of bobbin case / Winding bottom thread	10
Inserting bobbin in case / Threading bottom thread / Insertion of case . . . . .	12
Needle and Thread	
Insertion of needle / Selection of needle and thread	13
Treading top thread / Bringing up bottom thread	
Thread tension . . . . .	16
Cleaning and Oiling . . . . .	17
Plain Stitch . . . . .	20
Changing presser feet . . . . .	20
Forward and backward stitching . . . . .	23
Removal of work from machine . . . . .	23
Plain and cross-wise darning . . . . .	24
Darning linen . . . . .	24
Darning stockings . . . . .	26
Lap Hemmer (Feller) . . . . .	28
Hemmer . . . . .	29
Edger . . . . .	30
Zigzag . . . . .	31
Left, middle and right-hand stitch . . . . .	32
Elastic mending of knitted goods . . . . .	34
Roll hemmer . . . . .	36
Braiding . . . . .	37
Buttonholes . . . . .	38
Buttons . . . . .	41
Darning with wool . . . . .	42
Appliqué Work . . . . .	44
Hand-controlled Ornamental Stitches . . . . .	45
Satin Stitch Stop . . . . .	53
Automatic Fancy Stitches (applicable only to Model 540) . . . . .	53
Pin-tucking . . . . .	58
Embroidering around Holes . . . . .	62
Motor . . . . .	65
Useful Hints . . . . .	66
Standard Accessories . . . . .	inside back cover

## Guarantee



The Certificate of Guarantee  
will be sent to the Buyer by the  
Manufacturers direct.

Please let us have the completed  
card supplied with the machine  
so that we can send you  
the Certificate of  
Guarantee.

FRITZ GEGAUF LTD.  
Manufacturers of Bernina Sewing Machines  
STECKBORN (Switzerland)

## Terms of Guarantee

We engage to repair, free of charge, any defects due to faulty material or workmanship arising within two years in the Sewing Machine Model 540 and Model 542. All other claims are excluded from this Guarantee, which is valid only towards the first buyer of the machine.

This Guarantee becomes valid on the day of delivery of the machine. A buyer wishing to claim under the Guarantee should send the machine to the nearest Bernina Dealer. Transport charges to the Dealer and back as well as any damage caused by faulty packing are at the buyer's expense.

This Guarantee does not cover normal wear and any damage ensuing therefrom, such as cable breakage, burning out of electric bulb, wear of motor carbon brushes and the like.

This Guarantee does not apply if the Instructions for Use are disregarded, if the machine is not properly cleaned and lubricated, if third persons not appointed by us are allowed to effect alterations or repairs. Damage due to faulty manipulation is not covered by this Guarantee.

This Guarantee is valid only if high-grade sewing machine oil and needles System 130 (or Standard 15×1) are used.

FR. GEGAUF LIMITED

Manufacturers of Bernina Sewing Machines

STECKBORN

Switzerland

**Buyer  
of  
machine**

Name: .....

Address: .....

City: .....

Delivery date: .....

.....  
(signature of buyer)

**Supplier  
of  
machine**

.....  
(signature of supplier)

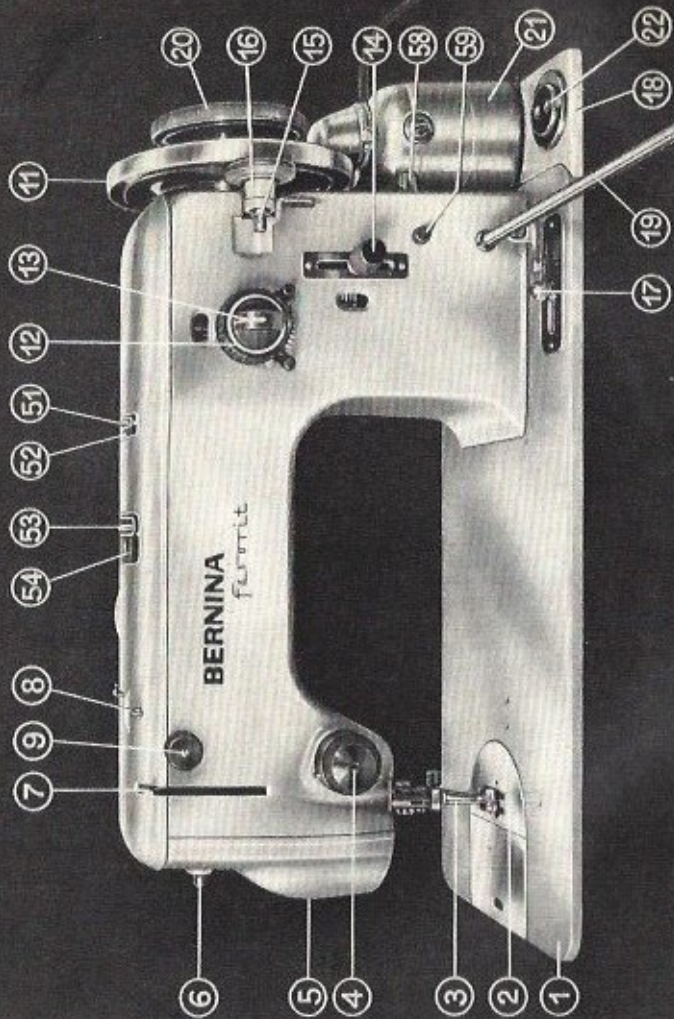


Fig. 1 on the preceding page shows a Bernina Class 540 with vertical motor, the controls referred to in the Operating Instructions being marked and identified.

<b>1</b>	Baseplate	<b>12</b>	Plain stitch and zigzag control knob	<b>20</b>	Fly-wheel release
<b>2</b>	Throat plate	<b>13</b>	Needle displacement lever	<b>21</b>	Vertical motor
<b>3</b>	Needle holder	<b>14</b>	Stitch length regulator and stop	<b>22</b>	Starter pedal socket
<b>4</b>	Thread tension	<b>15</b>	Winder shaft	<b>51</b>	Lever for zigzag or ornamental stitches
<b>5</b>	Face plate	<b>16</b>	Winder	<b>52</b>	Plate for zigzag or ornamental stitches
<b>6</b>	Light switch	<b>17</b>	Drop feed knob	<b>53</b>	Ornamental stitch selecting lever
<b>7</b>	Take-up lever	<b>18</b>	Extension plate	<b>54</b>	Plate bearing the ornamental stitches symbols
<b>8</b>	Thread guide eye	<b>19</b>	Knee control lever	<b>58</b>	The straight-sided satin stitch stop
<b>9</b>	Supplementary thread tension			<b>59</b>	

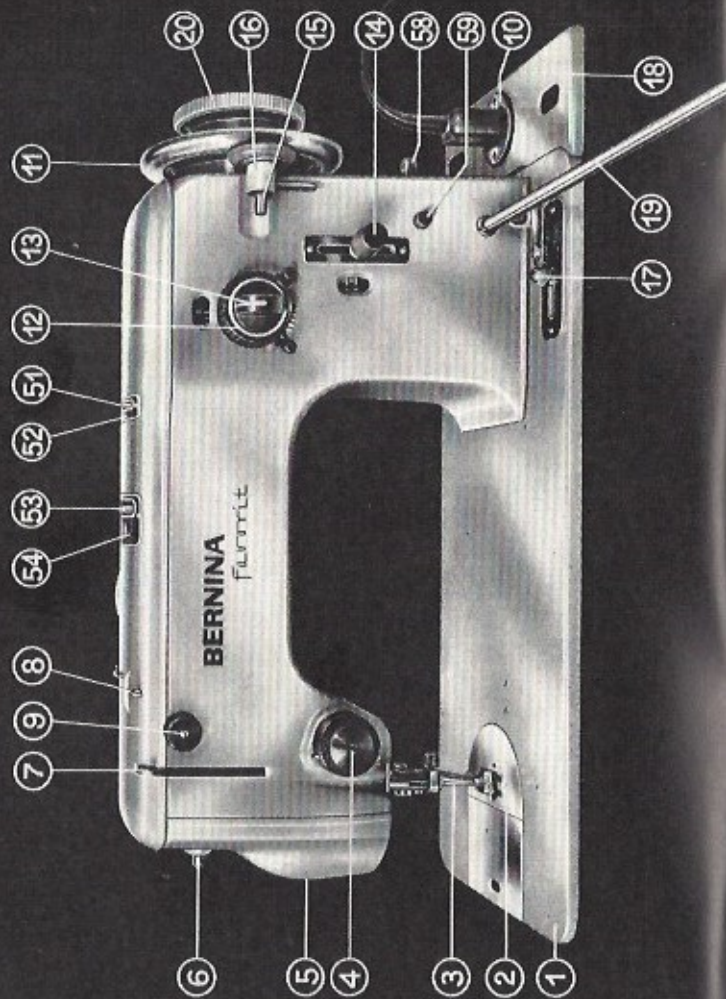




Fig. 2 on the preceding page shows Bernina Class 540 with foot pedal, the controls referred to in the Operating Instructions being marked and identified.

<b>1</b>	Baseplate	<b>10</b>	Socket for light	<b>18</b>	Extension plate
<b>2</b>	Throat plate	<b>11</b>	Fly-wheel	<b>19</b>	Knee control lever
<b>3</b>	Needle holder	<b>12</b>	Plain stitch and zigzag control knob	<b>20</b>	Fly-wheel release
<b>4</b>	Thread tension	<b>13</b>	Needle displacement lever	<b>51</b>	Lever for zigzag or ornamental stitches
<b>5</b>	Face plate	<b>14</b>	Stitch length regulator and stop	<b>52</b>	Plate for zigzag or ornamental stitches
<b>6</b>	Light switch	<b>15</b>	Winder shaft	<b>53</b>	Ornamental stitch selecting lever
<b>7</b>	Take-up lever	<b>16</b>	Winder	<b>54</b>	Plate bearing the ornamental stitches symbols
<b>8</b>	Thread guide eye	<b>17</b>	Drop feed knob	<b>58</b>	The straight-sided satin stitch stop
<b>9</b>	Supplementary thread tension			<b>59</b>	

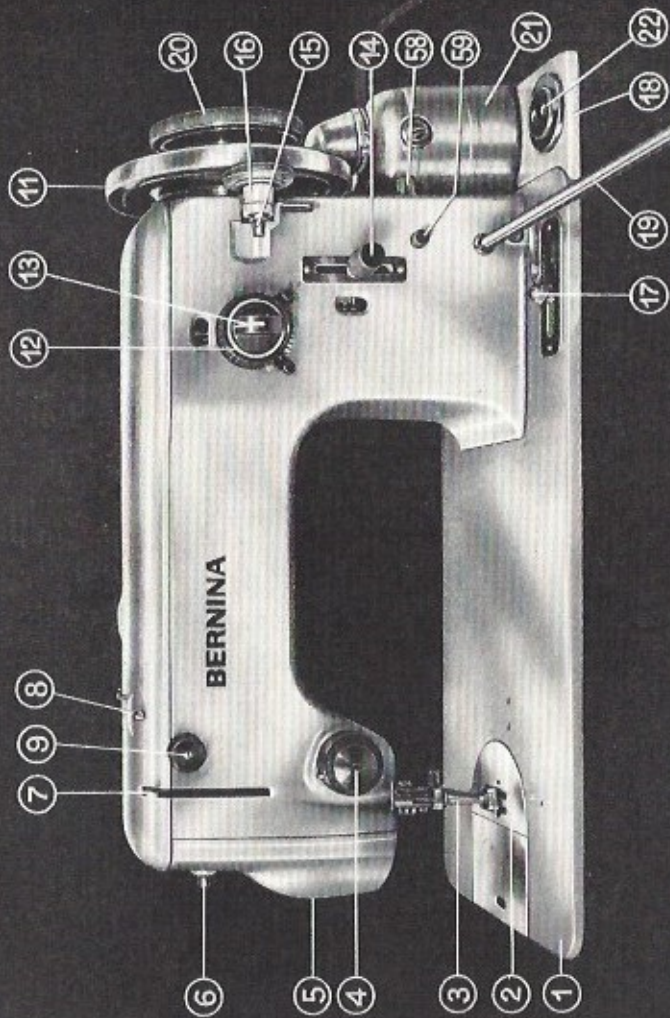


Fig. 3 on the preceding page shows Bernina Class 542, the controls referred to in the Operating Instructions being marked and identified.

<b>1</b> Baseplate	<b>9</b> Supplementary thread tension	<b>18</b> Extension plate
<b>2</b> Throat plate	<b>11</b> Fly-wheel	<b>19</b> Knee control lever
<b>3</b> Needle holder	<b>12</b> Plain stitch and zigzag control knob	<b>20</b> Fly-wheel release
<b>4</b> Thread tension	<b>13</b> Needle displacement lever	<b>21</b> Vertical motor
<b>5</b> Face plate	<b>14</b> Stitch length regulator and stop	<b>22</b> Starter pedal socket
<b>6</b> Light switch	<b>15</b> Winder shaft	<b>58</b> } The straight-sided <b>59</b> } satin stitch stop
<b>7</b> Take-up lever	<b>16</b> Winder	
<b>8</b> Thread guide eye	<b>17</b> Drop feed knob	

## Bobbin Case and Bobbin

### Removal of Bobbin Case

Place take-up lever approximately in its extreme raised position. With the index finger of your left hand, open the hinged latch A (Fig. 4) and, holding it with thumb and index finger, withdraw case complete with bobbin. By releasing latch, bobbin is freed and will drop out of the case.

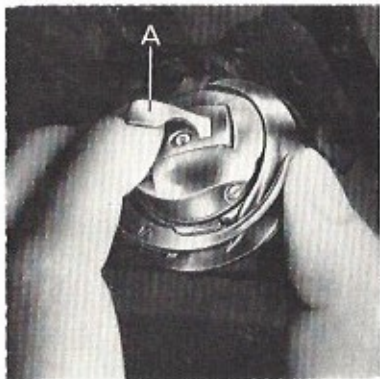


Fig. 4

### Winding Bottom Thread

The quality of the stitch is improved if the bottom thread is somewhat thinner than the top one. The thread roll from which thread is to be taken is placed on one of the two pins 22 (Fig. 5).

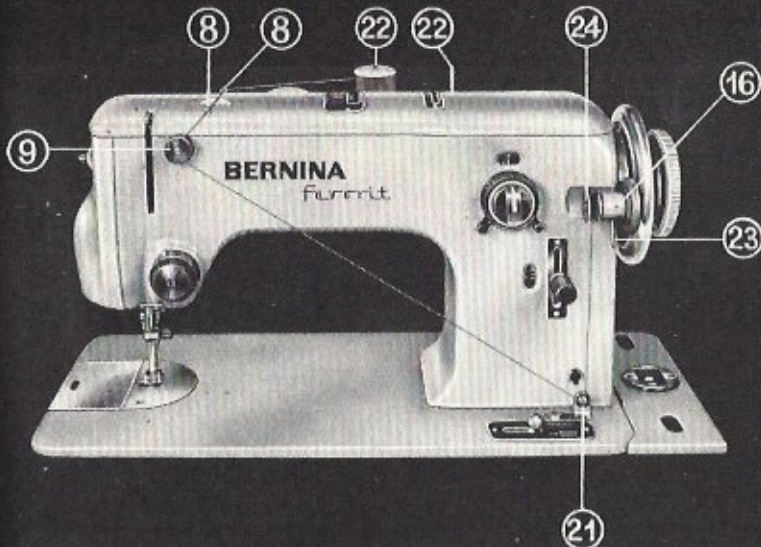


Fig. 5

In order that the entire machine will not unnecessarily operate during winding, turn the fly-wheel releasing knob 20 (Fig. 1) as far towards you as it will go with your right hand, holding the fly-wheel 11 (Fig. 1) with your left hand. The thread from the thread roll on one of pins 22 is passed through eyelets 8 (Fig. 5) between the discs of the additional tension device 9 and between the winding pre-tension discs 21 on the baseplate. Hence bring the thread to the metal bobbin 24. This bobbin is placed on the winding shaft so that the driving pin of the shaft engages the slot in the bobbin. Lifting the winding lever 23 will start the winding mechanism.

When the bobbin is loaded, depress the winding shaft bearing 16, thereby lifting the driving rubber from the fly-wheel. It will remain in this position and the bobbin can easily be removed. It is recommended not to wind bobbin to capacity.

### Inserting Bobbin in Case and Threading Bobbin Thread

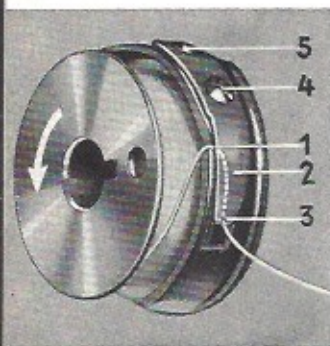


Fig. 6

When replacing bobbin in case, make sure that bobbin turns in the direction of the arrow when the thread is pulled.

After insertion of bobbin, pass thread through slot 1, below tension spring 2 and allow it to come out at the end of tension spring 3. Screw 5 holds the thread tension spring. Screw 4 serves to adjust tension.

### Replacing Case with Bobbin in Shuttle

Insertion of the bobbin case is possible only when the take-up lever is approximately in its extreme raised position.

As for removal, hold case with index finger and thumb of the left hand by the opened latch A so that the opening of the case faces up. Then slide case on shuttle pin as far as it will go. Now release latch and make sure that case is fast and cannot fall out.

# Needle and Thread

## Setting the Needle

Use only System 130 grooved needles. Needles with blunted points or bent needles should not be used. Turn the fly-wheel towards you until the needle bar is at its highest. Hold needle between thumb and index finger of the left hand so that the long groove *faces you*. The *flattened face* of the needle shank must, therefore, be *at the rear*. Now loosen the needle holder screw by turning it in anticlockwise direction and insert needle as far as it will go. Then tighten needle holder screw by turning it in opposite direction. It is important that the needle should be pushed right up and firmly clamped by the needle holder screw.

## Needle and Thread Selection

System 130 grooved needles are used exclusively on Bernina Class 540 and 542. In order to obtain satisfactory results, use only first-quality needles and high-grade thread.

First select the thread suitable for the work; then the needle to accommodate the thread, using the table over-leaf as guide.

The relation between needle and thread is correct if the thread, when placed in the long needle groove, fills the latter well and can be freely moved up and down.

For sewing, the usual numbers are 80, 90 and 100; for crosswise darning, use numbers 70 and 80.

## Needle and Thread Table

Needle System 130	Sewing Thread		Darning Thread
	No.	six-ply (unglazed)	three-ply (glazed)
60	—	170-200	80-100
70	70-100	70-140	50- 80
80	50- 60	50- 70	30- 40
90	40- 50	30- 40	—
100	20- 30	—	—

### Thread suitable for Sewing and Darning

- For plain sewing: Nos. 60-90, three- and six-ply, unglazed  
For darning: Nos. 50-80, two-ply  
For zigzag sewing: Nos. 60-90, three-ply only  
For ornamental stitches: Nos. 30 and 40, two-ply

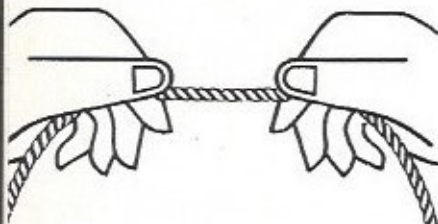


Fig. 7

It is best to buy sewing and darning threads at the Bernina Dealer's. He will sell you products only that are suitable for the machine.

### Left-hand and right-hand Twist Thread

For darning, use *left-hand twist thread* as top thread exclusively. The bottom thread may be right or left-hand twist. The twist is determined as shown in Fig. 7. Hold a thread end in your two hands, roll thread towards you with the thumb. Left-hand twist thread will tighten, right-hand thread will loosen.

Fig. 8





## **Threading the Top Thread**      Fig. 8

The thread spool is placed on one of the two pins 22 placed at the rear of the top arm. From there pass thread through the rear eyelet 8, through front eyelet 8 down to thread tension 4 between the tension discs in the box 31, up to the eyelet of take-up lever 7 and down again between the thread guide pin 32 and through the needle holder eyelet 33, and finally through the needle eye from front to rear. Make sure that take-up lever 7 and needle are in the raised position when threading the machine. Thread tension 4 is formed as a double tension. When only one thread is inserted, it is immaterial whether it is passed between the front or rear tension disc.

## **Bringing up the Bobbin Thread**

The end of the top thread projecting from the needle eye is loosely held between thumb and index finger of the left hand, while the fly-wheel 11 is turned towards the operator by one revolution, until the take-up lever is approximately in its extreme raised position. The upper thread end is now slightly pulled, which causes the bobbin thread to come up. Top and bottom threads are slightly tautened and placed rearwardly under the presser foot.

## **Thread Tension Box**      Fig. 9

The thread tension is designed to operate without special adjustment for all normal sewing and mending work.

A sight hole is provided in the upper portion of the thread tension box 31, which is equipped with a reference line 34 on either side. Below this reference line is situated a white ring 35 on the adjusting nut, marking the normal adjustment of the thread tension.

For special work, such as ornamental stitches, embroidering, bead-yarn work etc., the tension may be adjusted by rotating the adjusting nut 36. Clockwise rotation will

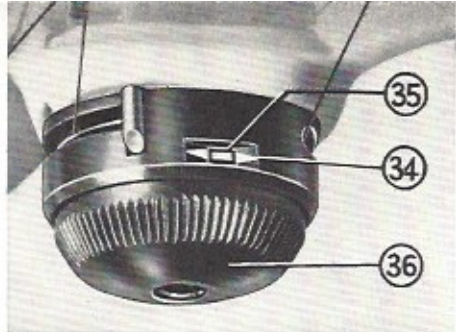


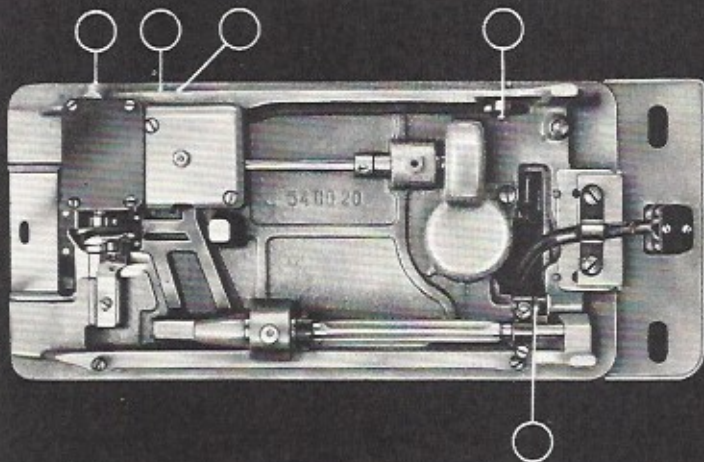
Fig. 9

move the white ring backwards and tension is increased. Rotation in the opposite direction will reduce the tension and shift the white ring forward.

For normal work, the reference line 34 and the ring 35 should be in line.

## Cleaning and Oiling

Fig. 10



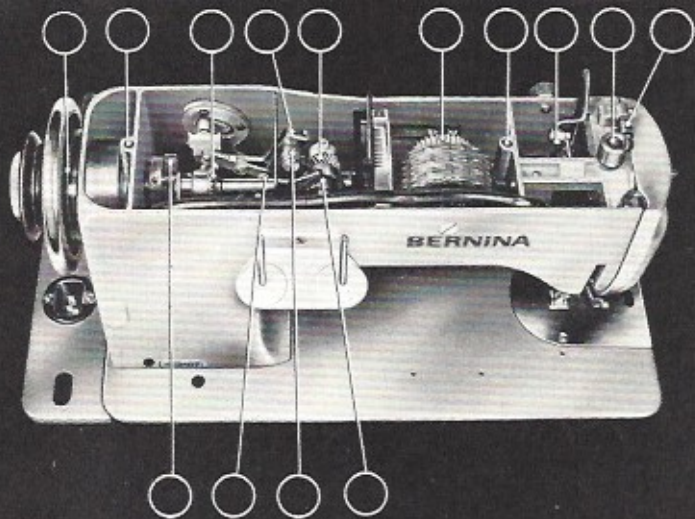
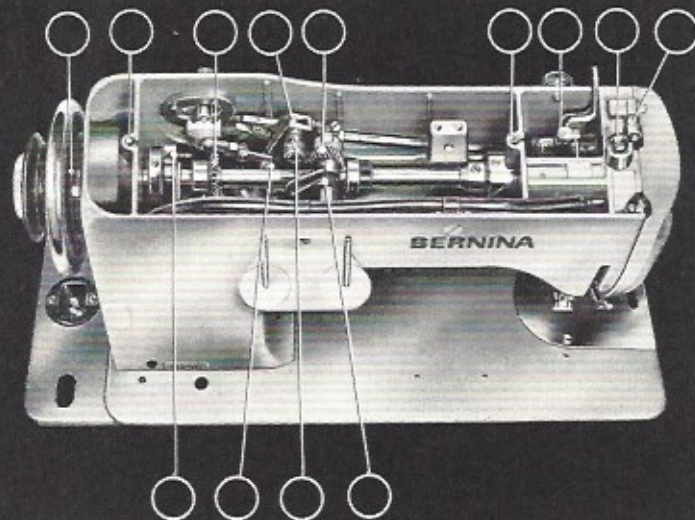


Fig. 11 a (Model 540)

Fig. 11 b (Model 542)



## Cleaning the Machine

Thread ends collect during sewing particularly around the shuttle, and also between the throat plate and the feed dog. Such ends may detrimentally affect the proper function of the machine and it is absolutely necessary to remove them frequently. From time to time, unscrew throat plate 2 (Fig. 1) so that the fluff forming under it can be removed.

## Oiling

The sewing machine should be oiled frequently, but not too liberally. A few drops suffice to keep the machine running freely. Excess oil will drain off unused and soil the fabric. Always oil the machine *before* sewing, not afterwards. Use clear oil free from resin and acid, such as is supplied by the Bernina Dealers. Use of inferior oils may cause the machine to jam when the oil dries. Figs. 10 and 11 show the oiling points indicated by white lines. Opening the slide on the baseplate gives access to the shuttle of which the race should be oiled lightly from time to time at the point indicated by the arrow.

*Adequate oiling ensures quiet operation of the machine and lengthens its life.* The oiling points not visible in Figs. 10, 11a and 11b are marked in red on the machine.

When the machine has been kept in a cold room, it should be opened and placed in a warm room about one hour before use so that it can assume room temperature and the oil in the bearings will become liquid again.

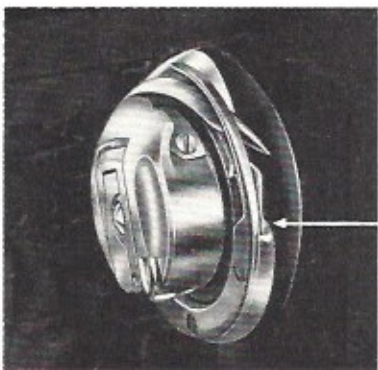


Fig. 12

## Plain Stitch

*Plain Stitching with Standard and Special Presser Foot*

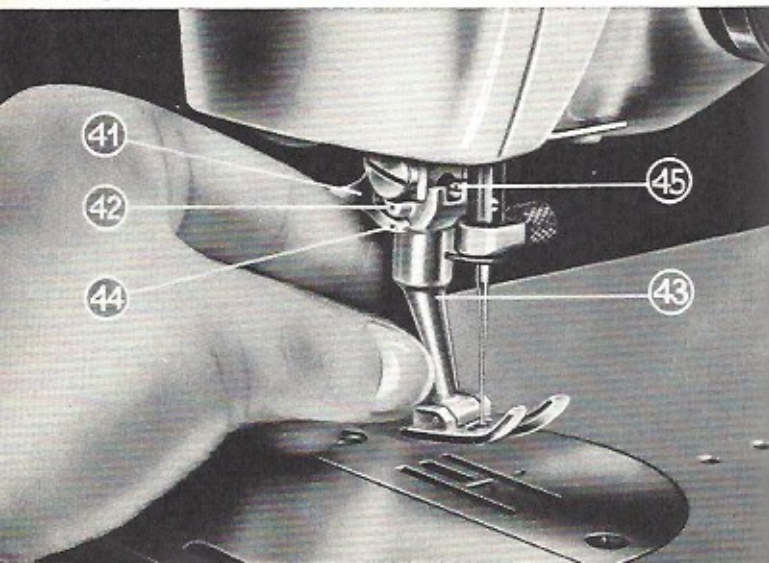
### Exchanging Presser Foot

Different sewing work requires more or less frequent exchange of the presser foot. This is why the BERNINA Class 540 and 542 has been equipped with a presser foot holding device which does not require the aid of a screw-driver but still ensures reliable fixation of the presser foot.

#### *a) Removal of Presser Foot*      Fig. 13

The cloth presser bar with presser foot is lifted by the lifting lever placed on the rear of the head. Now raise clamping lever 41, which engages below the clamping

Fig. 13



boss 42 of the presser foot 43, far enough for the hook 44 of the clamping lever to release the clamping boss 42 completely. The presser foot will drop automatically or with a little help from the cloth presser bar cone and can easily be removed.

b) *When replacing the Presser Foot* proceed in the opposite order: After raising the cloth presser bar by means of the lifting lever, hold the shank of the presser foot between thumb and index finger of your right hand, and place the presser foot below the cone of the cloth presser bar while the needle is raised. Now lift the clamping lever 41 with your left hand and slide the presser foot into the cloth presser bar cone making sure that the screw 45 engages the guide of the presser foot. Then depress clamping lever so that it will engage below the clamping boss of the presser foot. Slight pressure exerted on the lever will suffice to secure the presser foot firmly on the cloth presser bar cone.

#### **Lowering the Feed Dog**      Fig. 14

The right-hand bottom portion of the machine carries a control knob 17 designed to lower or raise the feed dog into inoperative or operative position. According to whether the knob is turned to the right or the left, i. e. in one of the directions of the arrows towards the symbols for sewing or darning indicated on the scale plate, the feed dog is in operative position, i. e. sewing can be effected, or in inoperative position, i. e. in the position required for darning.

#### **Plain Stitch**

For plain stitching, adjust the machine as follows:

1. Raise take-up lever approximately to its highest point.
2. Insert plain stitch presser foot (for ordinary plain stitch work, the zigzag presser foot may be used as

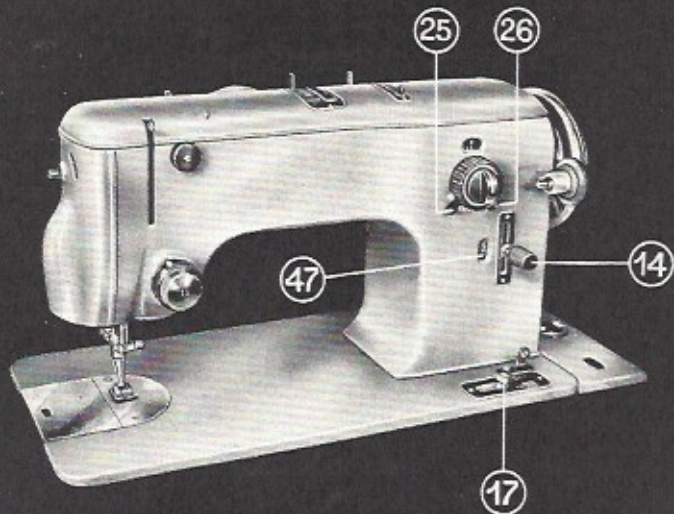


Fig. 14

well). Thread needle from front to back. Pass top and bottom threads together back under the presser foot.

3. Turn feed-dog control knob in clockwise direction.
4. Adjust stitch regulator 14 with knurled stop nut 14 so that the zero mark of the stitch length dial is somewhat below the line mark on the right-hand side. This is possible only if the nut 14 (Fig. 14) is not quite screwed in.
5. Set zigzag knob to zero. In this position, the machine will do plain sewing. As soon as the knob is turned to the right, a zigzag stitch will result.

Make sure that the fly wheel is always turned towards the operator.



## **Forward and Backward Sewing and Adjustment of Stitch Lengths**

According to the position of the stitch regulator 14 the machine will sew forwards or backwards making long or short stitches. If the stitch regulator lever 14 is depressed so that the zero line of the stitch length dial 47 is below the line mark on the side, the machine will sew forward. When the regulator lever is raised so that the zero line is above the line mark, the machine will sew backward. Forward and backward sewing serves to strengthen certain sewing areas and to secure the ends of the threads.

The more the stitch regulator lever is displaced upward or downward, the longer the forward or backward stitch will become. In order to ensure that the forward and backward stitches are of the same length, the knurled nut 14, which limits the upward and downward movement of the stitch regulator lever 14, is turned in or out more or less. If the nut is turned outward, the displacement of the lever is increased; inward movement of the nut will reduce the displacement.

## **Removal of Work from the Machine**

Raise the take-up lever into its extreme position and lift the presser foot by means of the liftig lever. This releases the top thread tension so that the work can easily be removed without prior thread feeding.

In particular, make sure that the work is always pulled from under the presser foot towards the rear to prevent the needle from becoming bent and causing thread breakage and faulty stitches.

## Darning and Mending

Figs. 15 a b c

When setting the machine for darning and mending, proceed as follows:

1. Insert darning plate.
2. Raise take-up lever.
3. Remove presser foot and replace by hopper foot.
4. Lower feed dog by turning knob 17, Fig. 14, to the left to produce darning symbol.
5. Set stitch regulator lever to zero so that the lowered feed dog is not unnecessarily operated.
6. Set zigzag knob to zero.

Fig. 15 a

### **Cross-wise Darning of Linen, etc.**

Cross-wise darning is child's play with the Ber-nina, thanks to the patented hopper darning foot.

Start by sewing stitch rows from left to right



and vice-versa (Fig. 15a). These rows should be parallel and as close to one another as possible. Do not extend the rows beyond the edge of the damaged area farther than absolutely necessary to secure the stitches. It is advantageous to make rows of different lengths in order to prevent the material from tearing at the edge of the area darned.

Then cover the parallel rows with new parallel rows at right angles running front to back and vice-versa.

The first covering rows are sewn somewhat beyond the outermost first rows (Fig. 15 b) in order to obtain a regular and strong darned area. The covering rows should also be parallel and as close to one another as possible.

Finally fill the small gaps in the darned area by a number of additional covering rows limited to the exact area originally damaged (Fig. 15 c).

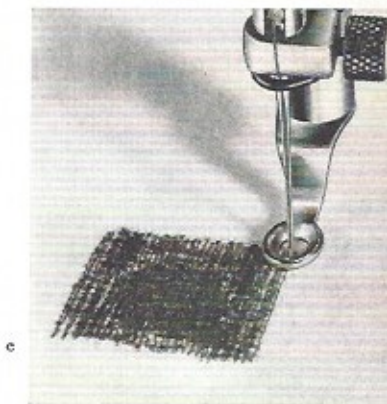
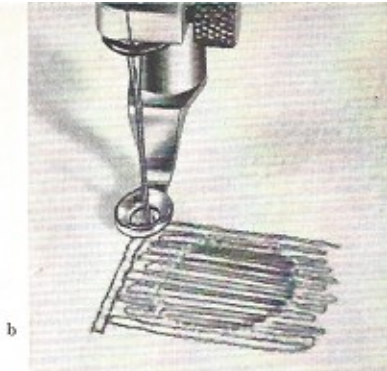
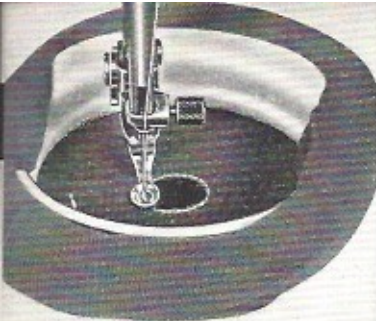
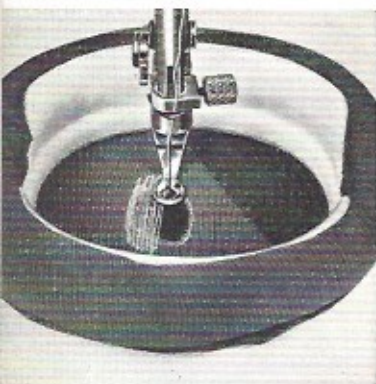


Fig. 16



a



b



c

### Darning Stockings

To darn stockings, use the darning attachment on which the stocking is rolled in such a manner that the damaged area is centered in the attachment.

Now place the stretched stocking beneath the darning foot and sew plain stitches around the area. This will prevent laddering (Fig. 16 a). Then sew stitch rows front to back across the direction of the loops (Fig. 16 b). The darning stitch rows should extend about 2 inches beyond the damaged area, and should be of unequal length. Then turn the darning attachment by

90° in the direction of the arrow (Fig. 16b) and start sewing covering stitch rows. In order to render them less visible, orient them in the direction of the loops beginning somewhat outside the edge of the first stitch layer (Fig. 16c). The covering rows, also of unequal lengths, should be parallel.

Now fill the small gaps in the darning area by a number of additional covering rows limited to the exact area originally damaged (Fig. 16d).



## Lap Hemmer

Lap hems are used to produce very firm joints. They are obtained in two operations, viz. :

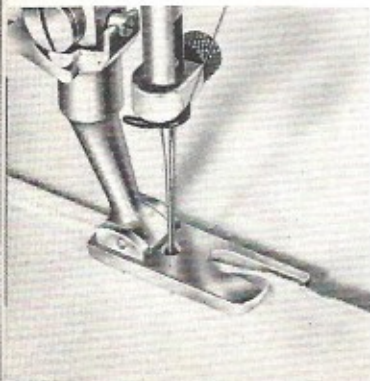
*1st Operation* (Fig. 17a): Arrange the fabric sections to be joined on top of each other in such a manner that the bottom section slightly projects from the top one and pass both under the lap hemmer as when hemming so that they are folded over. Make sure that the same width of material always enters the feller.

*2nd Operation* (Fig. 17b): The two sections are now unfolded and laid flat so that the seam formed stands up like a pleat. This pleat is again passed into the feller in the same direction so that it is folded over and sewn down.

a

Fig. 17

b



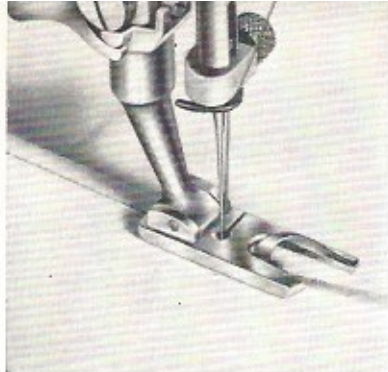


Fig. 18

## Hemmer

*(Hem with approx.  $\frac{5}{16}$ " )*

Attach the hemmer in place of the ordinary presser foot, raising the presser foot bar for the purpose.

Fold the edge of the material over to the desired hem width and pass the fabric into the spiral-type guide tongue of the raised hemmer as far as the needle, then lower the hemmer. When sewing, lightly guide the pre-folded edge (Fig. 18). If too much fabric enters the hemmer, the seam will become bulgy and uneven; if too little the hem will not be folded in sufficiently.

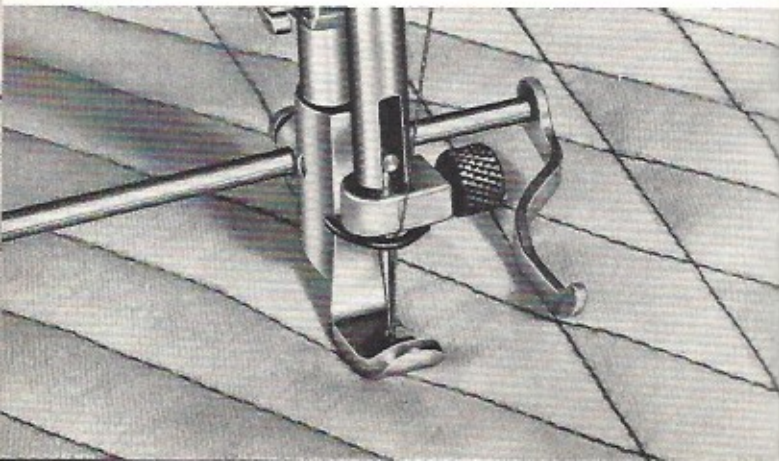
## Edger

As shown by the illustration, the stitch hole is placed adjacent to the right presser foot edge. This renders the foot particularly suitable for hems along the fabric edge without the aid of the lateral quilter guide.

When the lateral quilter is attached to the edger, the latter can be used for quilting work as shown in Fig. 19 below.

The guide is first fixed at the desired distance from the edger. Then make a seam and shift the material to the right so that the seam just made is in line with the guide. Then sew a new seam following the direction of the first seam with the leg of the guide, and so on. Afterwards, the same operations are effected in the transverse direction.

Fig. 19





# Zigzag

## Adjustment of Stitch Width

At the right-hand top of the stand of the machine is placed the Control Knob 12 (Fig. 1) which serves to adjust the seam width. Above the knob is a sight hole in which the width of the seam is indicated in figures. For plain sewing, the knob is turned to show the numeral 0, i. e. that a straight seam can be produced. When turning the knob to the right, the numerals 1-4 will appear. The higher the numeral, the wider the zigzag stitch will be. When sewing zigzag, this knob may be operated as desired. When the machine is not running, do not turn the knob unless the needle is raised from the material in its extreme position.

## Stops and their Use

Below knob 12 are disposed two stops, 25 and 26 Fig. 14, engaging the rests of the stand. They are designed to limit the zigzag amplitude and can be displaced by slight lateral pressure. The control knob is set for the desired zigzag width (numeral in sight hole) and the stop slid to the left or right until it is stopped. By way of example, the zigzag width is set at 2 and the right stop slid to the left until it is engaged. Now zigzag seams from 2 to 4 can be sewn. If the right-hand stop is left in zero position and the left-hand stop shifted to the right until engaged, seams of 0 to 2 only can be sewn. Combination of the two stop positions permits any desired limitation of the seam width to be obtained. Limitation of the seam width is advantageous for many types of zigzag work.

### Left-centre-right Adjustment

On top the width control knob 12 (Fig. 1) is arranged a further lever 13 (Fig. 1) marked with an arrow. If the arrow points straight up, the needle will be deflected evenly to the left and the right (Fig. 20 a). Rotation to the right to point the arrow obliquely to the right will cause the needle to be deflected from the right to the left (Fig. 20 b). Rotation to point the arrow obliquely to the left will cause the needle to be deflected from the left to the right (Fig. 20 c).

This control, too, can be turned to centre, left or right during operation, but it should again not be rotated when the machine is not running unless the needle is in its raised position above the material.

a) Needle deflection evenly from centre to right and left

b) Needle deflection from right to left only

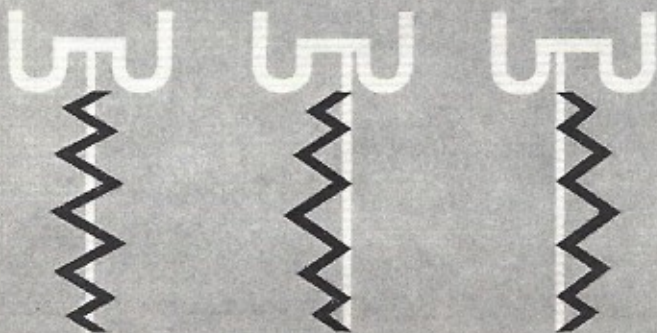
c) Needle deflection from left to right only

Fig. 20

a

b

c



The majority of zigzag work is performed with centre stitch, while left-hand stitch is employed for button-holes, sewing on buttons, ornamental stitches.

The right-hand stitch is employed for other ornamental stitches, and a combination of the left and right hand stitches is very often used as well.

### **Zigzag Sewing**

(Use 2- or 3-ply yarns, never 6-ply)

For zigzag sewing, set the machine as follows:

1. Raise take-up lever 7 (Fig. 1) to approximately its extreme position.
2. Insert zigzag foot, which should not be confused with embroidering foot (Fig. 30). It is identified by one red line. Top and bottom threads should be pulled backwards under zigzag foot.
3. Turn feed dog control lever 17 to the right.
4. Adjust stitch regulator lever 14 so that the zero mark of the stitch length scale is somewhat below the line mark on the right. This is possible only if the screw 14 is not turned in completely.
5. Turn zigzag control knob 12 to the right according to the desired width (0-4). The more it is turned to the right, the wider will the zigzag seam be. The zigzag knob should never be operated when the needle is in the material while the machine is idle. But the zigzag knob can be operated in either direction when the machine is running.

## Elastic Sewing of Knitted Goods

Knitted goods can be mended in a variety of ways of which the two most usual are described below:

*Alternative 1:* The mending patch is cut to the desired shape and size and then placed on top of the damaged part of the fabric in line with the direction of the loops. The wrong side of both sections must face up. The pieces are fixed by provisional stitches. Then sew over the cut edge of the patch with zigzag stitches (stitch length 1 and width 3 or 4). A second zigzag seam is sewn inside this seam, at a distance of approx.  $\frac{1}{4}$ " and the damaged area then cut out along the inner seam and the provisional stitches removed.

Fig. 21 a

*Alternative 2:* The mending patch is placed *under* the damaged portion with the loops in line (Fig. 21 a), the wrong side of both sections facing up, and the patch sewn on (Fig. 21 b).

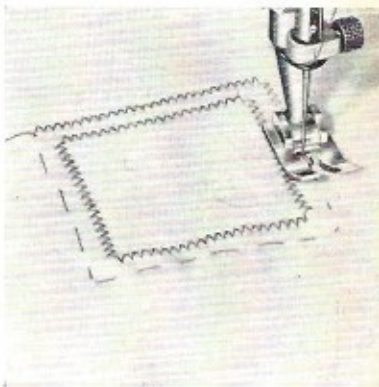




Now sew a zigzag seam along the basting stitches (Fig. 21 c) using stitch length 1 and width 3 or 4, and a second seam at a distance of approx.  $\frac{1}{4}$ ".

b

Then cut the damaged area out along the inner stitches and trim the free edge of the patch below along the outer seam. Finally remove basting.



c

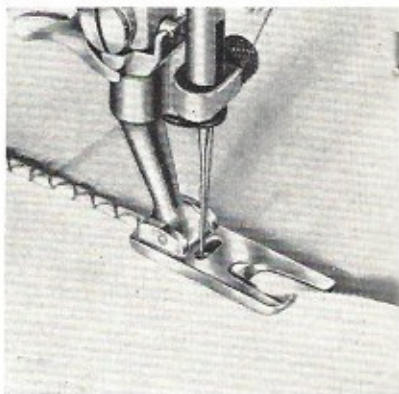
### Sewing on Lace

To sew on lace use short stitch lengths and narrow stitch width as a rule. Normally the stitch length regulator 14 (Fig. 1) is set at 1 and the zigzag knob 12 at 1-2. Place lace on the material, so as to overlap by about 1", thus facilitating sewing on. Now attach the lace by zigzag stitches and then cut off the free edge of the material along the zigzag seam.

## Roll Hemmer

The roll hemmer (2 red lines) is similar in shape to the ordinary hemmer but is provided with an elongated stitch hole so that zigzag seams can be sewn. The roll hemmer is operated in the same manner as the ordinary hemmer. The zigzag control knob 12 (Fig. 1) is set at approx. 3-4. Roll hems are used particularly for edging fine material.

Fig. 22



### Shell Roll Hem

For shell roll hems, use the roll hemmer as well. The material with knitted fabric is inserted in the worm as for roll hemming. The zigzag stitch bridges the entire seam. High top thread tension and large stitch length produce the shell-type effect. This shell roll hem is used mainly for edging knitted goods.

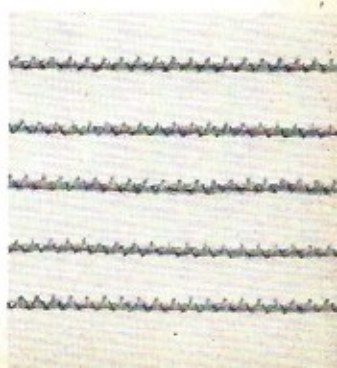
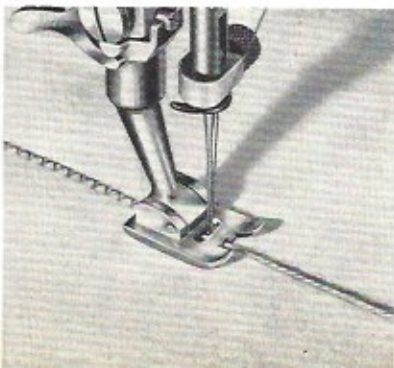
## Braiding

Insert a soft cord in the guide hole of the zigzag embroidering foot (1 red line) and stitch or embroider over with zigzag stitches. Use mercerized thread 50/2 or 60/2. A variety of effects can be obtained with this type of stitch. - Coloured thread, coloured cord, a number of adjacent seams etc. will enhance the effect.

a

Fig. 23

b



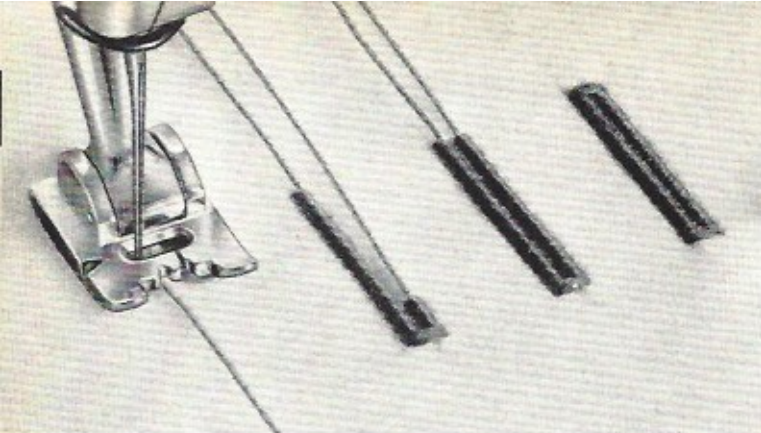


Fig. 24

## Buttonhole Sewing

There are three types of buttonholes:

- a) Ordinary buttonholes,
- b) Braided buttonholes, and
- c) Raised buttonholes.

Types a) and b) are obtained with normal thread tension.

For braided buttonholes, use a soft cord and insert it in the guide of the buttonhole foot. The procedure is the same as with the ordinary type.

The raised buttonhole is obtained by employing slack bottom thread. In order to ascertain whether the tension is adequate, operate the threaded bobbin case, pull the thread out and let case swing freely. If the case causes



the thread to unwind by its own weight, i. e. if the case drops freely, the tension is correct. Conversely, the top thread tension must be so high that the bottom thread lies flush on the top of the material. For this type of buttonhole, the top thread must be unglazed 6-ply No. 40 thread while a very thin thread is required for the bobbin (60/2). In color work, the colored two-ply thread must be wound on the bobbin.

### Sewing Buttonholes

1. Insert buttonhole presser foot (3 black lines).
2. Set needle to the *left* by turning handle 13 to the left (Fig. 1).
3. Set zigzag control knob 12 (Fig. 1) to No. 2; when sewing a buttonhole in knit material, select stitch width  $2\frac{1}{2}$ .
4. Set stitch regulator 14 so as to place the zero line somewhat below the line mark on its right. This can only be done if the screw 14 (Fig. 1) is not fully turned in.
5. Set drop feed knob 17 (Fig. 1) to the right.
6. Now sew the first bead to the length of the buttonhole. The last needle hole of the finished bead must be *on the right*, and the needle inserted only  $\frac{1}{16}$ " into the material.



Last  
stitch  
on  
right

7. Raise presser foot and turn cloth through  $180^\circ$  in clockwise direction. Then lower presser foot and allow the needle to enter cloth towards the left. Allow needle to penetrate cloth only to depth of  $\frac{1}{8}$ ".



Allow  
needle  
to  
enter  
on  
left

8. Set zigzag control knob 12 to twice the bead width and sew a few end stitches Pull material lightly towards you to shorten the feed. Last needle hole should be on the left. Allow needle to penetrate cloth only to depth of approx.  $\frac{1}{8}$ ".
9. Set zigzag knob 12 again to No. 2 and sew the second bead over a length somewhat shorter than the first bead. Last needle hole on the left.
10. Set zigzag knob 12 again at twice the bead width and sew the end stitches. Again pull material back somewhat to shorten the feed. Last needle hole on the left.
11. Set zigzag knob 12 at zero and sew a few fastening stitches again pulling the cloth lightly towards you to shorten the feed.
12. Finally place work on the wooden block and pierce material between the two beads by means of the buttonhole cutter.



Last  
stitch  
on  
left



Last  
stitch  
on  
left



Last  
stitch  
on  
left

Fig. 25

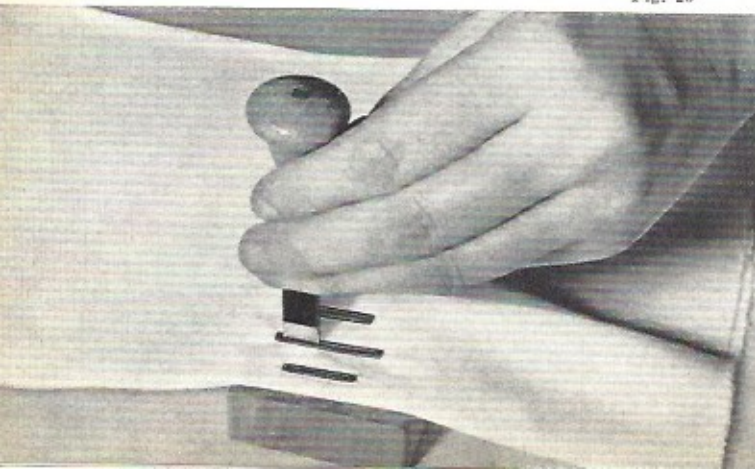




Fig. 26

## Sewing on Buttons

1. Position needle to stitch on left.
2. Lower feed dog by turning knob 17 (Fig. 1) to the left.
3. Attach button presser foot (2 black lines) and place button under foot according to Fig. 26.
4. Adjust zigzag stitch width according to the distance between the stitch holes in the button and sew button on with 6-8 stitches.
5. To fasten the stitches, leave needle in the hole of the button. Lift the presser foot, turn zigzag knob 12 (Fig. 1) to zero, lower foot and fasten with several stitches.

With four-hole buttons, shift the cloth with the button and make 6-8 stitches in the second pair of holes. Press-studs and hooks are sewn on in like manner.

## Darning with wool

Fig. 27a



b



When darning with wool, use the patented wool-darning foot. Proceed as follows:

1. Lower feed dog by turning knob 17 (Fig. 1) to the left.
2. Set stitch regulator 14 (Fig. 1) to zero to prevent lowered feed dog from being operated unnecessarily.
3. Set zigzag knob 12 (Fig. 1) to 3-4.

For top and bottom thread, use darning cotton. Wool is employed to cover the damaged area. Use top and bottom threads and darning wool of a colour corresponding to the piece to be mended so that the darn will

be as invisible as possible. Thread tension is the same as in ordinary darning.

Darning with wool is performed in two stages:

1. The damaged area is covered with wool rows.
2. The rows are sewn down.



c

Figs. 27 a, b and c clearly illustrate the operation. As shown by Fig. 27 a, the wool is inserted in the slot of the foot, and the thread end allowed to project over the rear edge of the foot by about  $\frac{1}{2}$  inch. Now span the hole with wool as shown in Fig. 27b. Start at the left hand top corner of the damaged area and stretch wool sideways, i. e. from left to right and vice-versa, run by run, by shifting the fabric accordingly. At the end of each run a zigzag stitch will tack the wool to the fabric when direction of movement is changed. Make sure that these runs are as close as possible, because later on no wool will be used. As soon as the damaged area is entirely covered with wool, the wool thread is cut at the darning foot. Now fasten the wool rows with zigzag stitches across them as shown in Fig. 27c, by shifting fabric forward and backward. Zigzag stitch is employed to ensure that the mend remains elastic, and care should be taken not to place the individual zigzag runs too closely together.



Fig. 28

## Applique Work

(Needle in position for left-hand stitch)

An attractive decorative effect is obtained by sewing cut-outs of materials of different colors or tulle to the cloth. Appliqué work is employed mainly on collars, ladies' and children's dresses, linen, and the like.

The buttonhole presser foot (3 black lines) is advantageously employed for this type of work.

First apply the contours to the *wrong side* of the material. The fabric from which the designs are cut should be of a pleasant contrast colour. Cut piece slightly larger than required and baste on the *right side* of the material. Then sew a narrow ( $1-1\frac{1}{2}$ ) zigzag stitch row (not too short) along the contours. The sewing thread should be of the same color as the fabric applied. Then remove basting and trim along sewing line on right side. Now finish work by sewing a wider ( $2\frac{1}{2}$ ), short zigzag line over the edges of the cut-out on the right side of the material.

# Ornamental stitches, hand-operated

## The Zigzag Ornamental Stitch

With the Bernina Zigzag Sewing Machine Cl. 540 and 542 a variety of ornamental stitches can be produced in the simplest possible manner. According to the ornamental stitch desired, the stitch regulator 14 (Fig. 1) is more or less depressed and the zigzag knob 12 turned in both directions during sewing. After a few experimental stitches, the sewing of ornamental stitches is child's play.

For ornamental stitches of normal stitch length (sample a in Fig. 31), use the zigzag sewing foot (Fig. 29). For stitches of very short length (sample b in Fig. 31), use the zigzag *embroidering* foot (Fig. 30). The latter has a recessed lower face.

Zigzag Sewing Foot

Zigzag Embroidering Foot

Fig. 29

Fig. 30



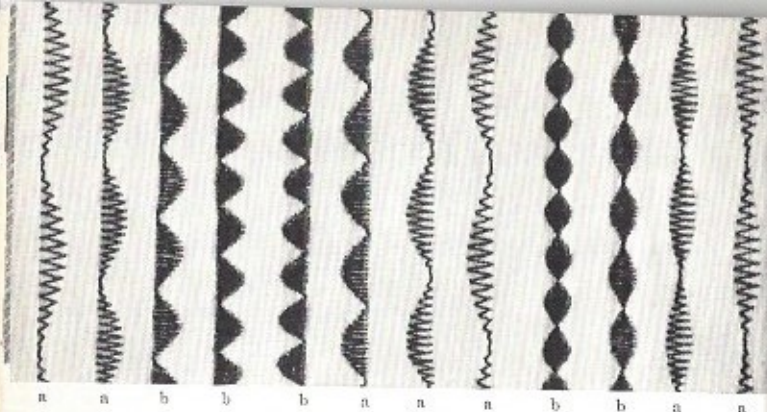


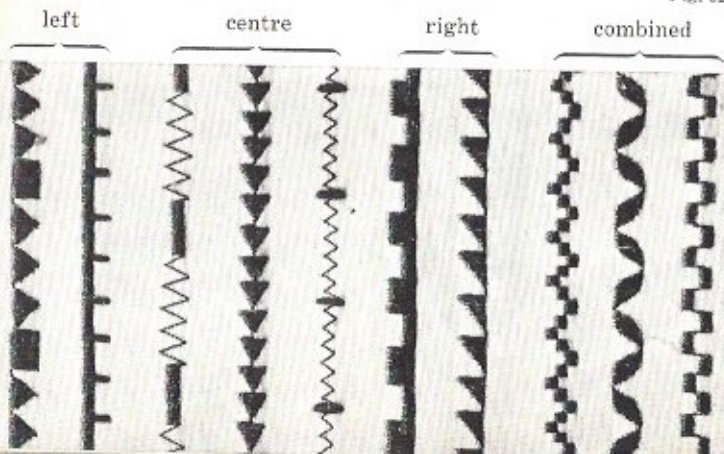
Fig. 31

a = normal stitch length, zigzag sewing foot

b = short stitch length, zigzag embroidering foot

*Needle Position*

Fig. 32





## Zigzag Ornamental Stitches and their Combinations

As seen from the various descriptions, zigzag stitches are the result of the combination of

1. Stitch length (fabric feed) from zero to  $\frac{1}{4}$  inch.
2. Stitch width (needle amplitude) from zero to  $\frac{1}{4}$  inch.
3. Stitch location (adjustment left-centre-right).

Ornamental stitches are produced by adjustment of the control knobs during actual sewing.

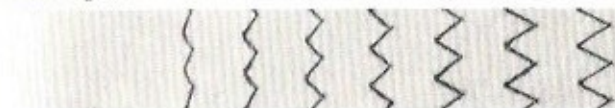
When sewing with adjusted stitch length and width, the following designs are produced:

Stitch location	centre						
Stitch width	1	1.5	2	2.5	3	3.5	4
Stitch length 1							

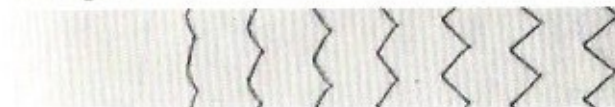
Fig. 33



Stitch length 2



Stitch length 3



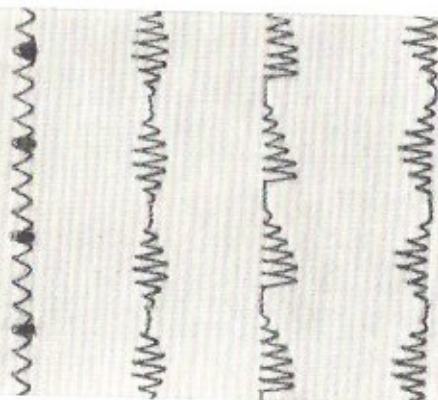
Stitch length 4



Stitch length approx. zero



Naturally, intermediate values for both stitch width and length can be employed as well. Alteration of stitch length, width and needle position, will produce the following varieties:

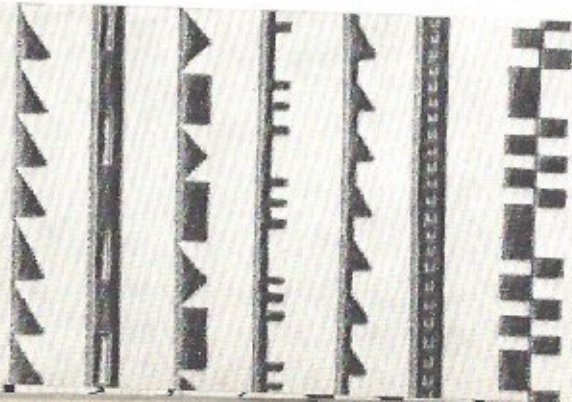


Stitch length	1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Stitch width	2	0-4	0-4	0-4
Stitch location	centre	centre	left	right

Fig. 34

Length approx. zero						
Width	0-4	$1\frac{1}{2}$ -3	0-4	$1\frac{1}{2}$ -4	$1\frac{1}{2}$ -4	$1\frac{1}{2}$ -3
Locat.	left					4

Fig. 35



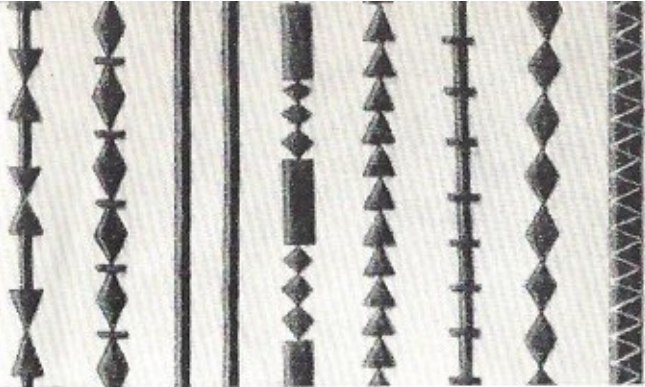


Fig. 36

Stitch length almost zero

Width	$\left\{ \begin{array}{l} 1\frac{1}{2}-4 \\ 0-4 \end{array} \right.$	0-4			4		1 $\frac{1}{2}$	0-4	
		4-0	1 $\frac{1}{2}$	1 $\frac{1}{2}$	0-4	0-4	4	4-0	4
		4			4-0				

Locat. C C C C C C C C C

Stitch length almost zero

Width	$\left\{ \begin{array}{l} 4-1\frac{1}{2} \\ 4 \\ 1\frac{1}{2}-4 \end{array} \right.$	4		0-4	0-4	4-1 $\frac{1}{2}$	4
		4	0-4	4-0	4-0	4	
		1 $\frac{1}{2}$ -4	4-0				

Stitch length R R R R R R

Fig. 37



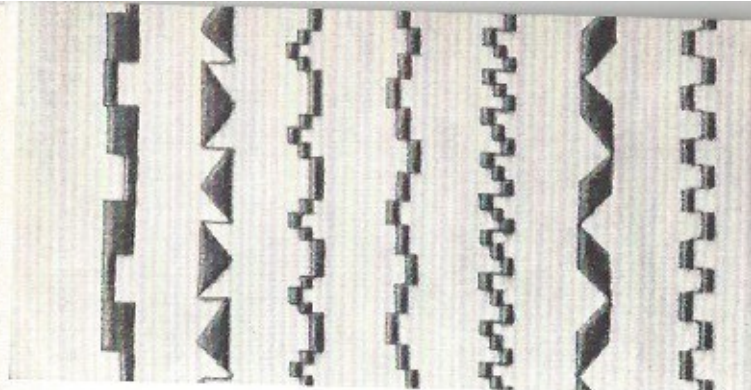


Fig. 38

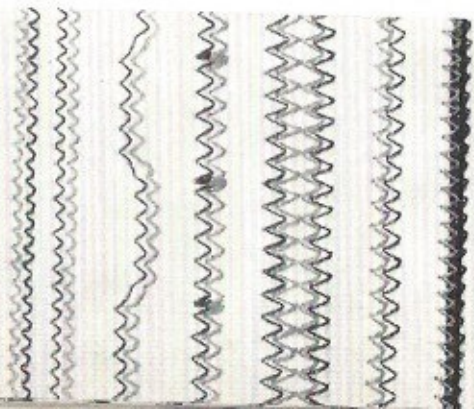
Stitch length almost zero

Width	$1\frac{1}{2}$ -4	0-4	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	0-4	$1\frac{1}{2}$
	4	4-0				4-0	
Locat.	LR	LR	LCR	LCR	LCR	LR	LR

## 2 Needles

Stitch length	1	1	1	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$
Stitch width	1	1	$1\frac{1}{2}$	$1\frac{1}{2}$	2	$1\frac{1}{2}$	$1\frac{1}{2}$
Stitch location	C	C	LR	C	C	C	C

Fig. 39



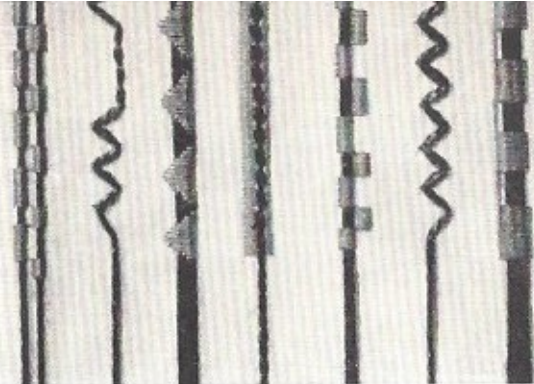
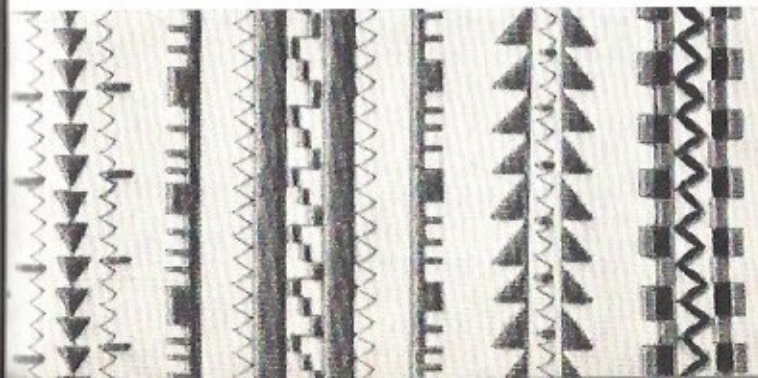


Fig. 40

Stitch length	almost zero	2	almost zero		2	almost zero		
Stitch width	1½	0,4	0-4	4-0	4	1½	4	1½-4
Stitch location	LR	R	R	C	L	L	C	

Stitch length	alm.			alm.	alm.		alm.	alm.		alm.	alm.					
	1	0	1	0	1½	0	1½	0	0	2½	0					
Stitch width	0-4			4-0	1½-4	1½-4	2-4	1½	4-2	1½-4	0-4	1½-0-4	1½	4	1½	
Stitch location	R	C	L	R	C	C	LCR	C	C	L	R	C	L	LR	C	LR

Fig. 41



# Feather Stitch

- a) with one needle
- b) with two needles

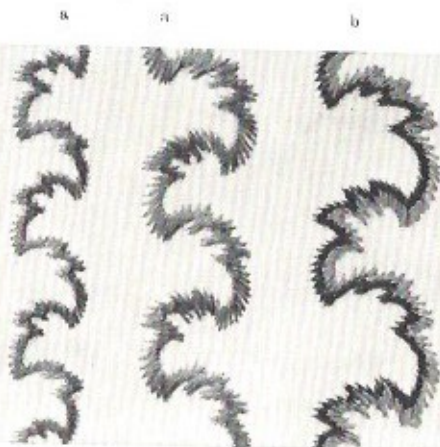


Fig. 42

Stitch length	almost zero	almost zero	almost zero
Stitch width	$2\frac{3}{4}$	$3\frac{1}{2}$	2
Stitch location	C	C	C

## Satin Stitch Stop

Setting of the right stitch length for ornamental stitches and buttonholes is now very easy on the BERNINA thanks to the patented Satin Stitch Stop.

Let us assume that the stitch adjusting lever is set on 2 and that the stitch length now shall be reset to sew a buttonhole:

- First lift the satin stitch stop lever No.58 to its highest possible position
- Then do the same with the stitch adjusting lever
- Adjusted like that, the machine sews automatically a very close zigzag stitch necessary for all ornamental work and buttonholes
- To restore normal free setting of stitch length for any kind of stitch forward or backward, the satin stitch stop lever No. 58 is moved down to its low stop.

The satin stitch stop is placed on an eccentric shaft in order to render the stitch length precisely adjustable according to the number of thread used for different work. By turning knob 59 slightly to the right, the stitch length is shortened, which is necessary when working with very fine thread. Slight turning of knob 59 to the left causes a small increase of stitch length, which is necessary to obtain a regular close stitch with a thicker thread.

## Automatic Fancy Stitches

Only available in Model 540.

Every BERNINA Class 540 is equipped with the automatic ornamental stitch device which enables ornamental stitches to be sewn without manipulation of the controls. Just select the stitch desired, set the control lever and then simply concentrate on guiding the fabric through the machine with both hands free to do so.

# Feather Stitch

- a) with one needle
- b) with two needles

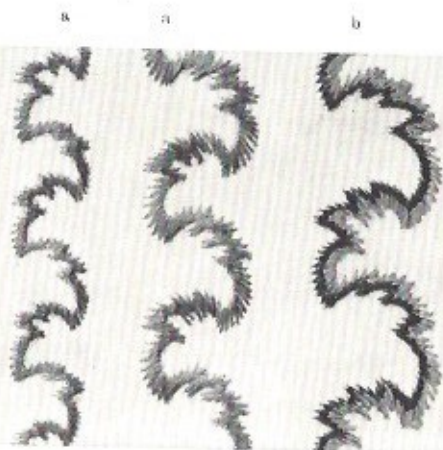


Fig. 42

Stitch length	almost zero	almost zero	almost zero
Stitch width	$2\frac{3}{4}$	$3\frac{1}{2}$	2
Stitch location	C	C	C



### Adjustment for Automatic Ornamental Stitch Sewing

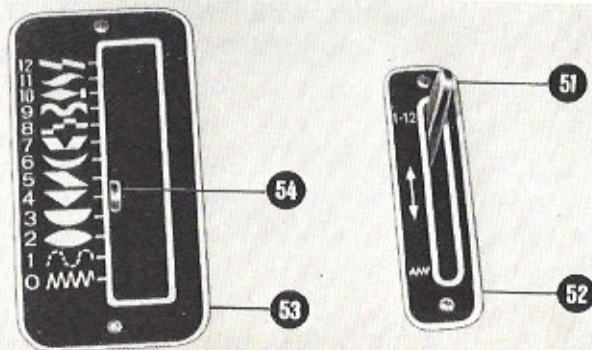
The lever 51 for zigzag or ornamental stitches is placed at the right-hand side of the top arm (Fig. 43). It projects from the slot in the plate 52. If the machine is to be set for control by the automatic ornamental stitch device, push lever 51 backwards. Reset for zigzag stitches by pulling lever forward.

At the left of the zigzag lever is placed the ornamental stitch selecting lever 54 which projects from the plate 53. This plate bears the symbols of the nine possible ornamental stitches. When sewing zigzag stitches, the lever 54 with its white line on the symbol side of the scale is set at zero, marked by a zigzag line, i. e. in front position.

Select an ornamental stitch and set lever 54 at the corresponding symbol so that the white line thereon lines up with its mark. This is effected as follows:

Pull lever 54 to the right in its guiding slot until it abuts, displace it until its line and the stitch symbol line up and then release. It will automatically be locked and stay in this position. When displacing the lever, make sure that the needle is outside the fabric, i. e. in raised position. The stitch width adjusting knob 12 should be set so as to show the numeral 4 in the sight opening, i. e. to produce the largest stitch width.

Fig. 43



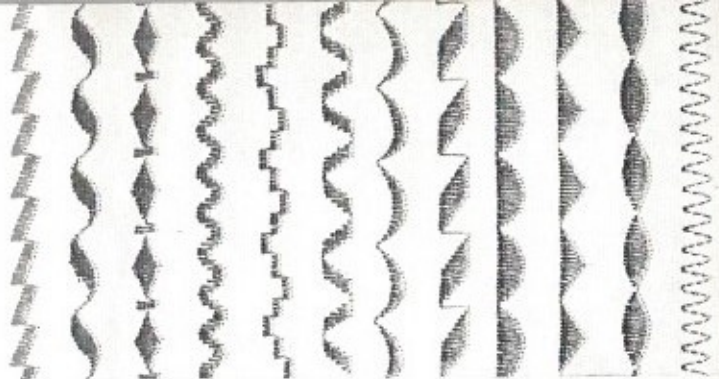


Fig. 44

After threading the machine, stitching can be started in the same manner as ordinary sewing.

When switching back to normal zigzag stitches, place control lever in zero position as described above.

#### Automatic Ornamental Stitches with one Needle

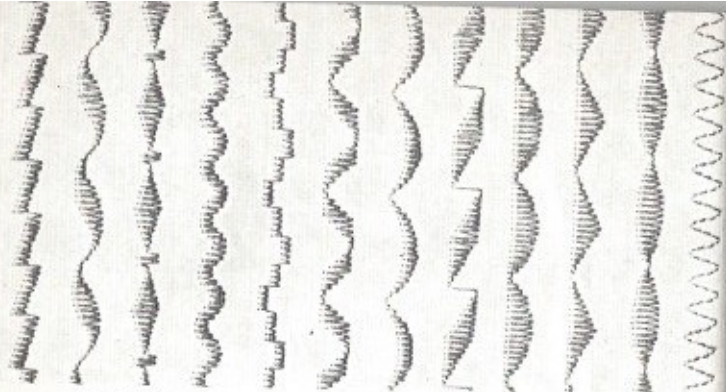
Various stitch lengths, Fig. 44.

The stitch patterns may be varied by changing the stitch length from almost 0 to 4.

Stitch length alm. 0  
Stitch width 4

Fig. 45





Stitch length  $\frac{1}{2}$   
 Stitch width 4

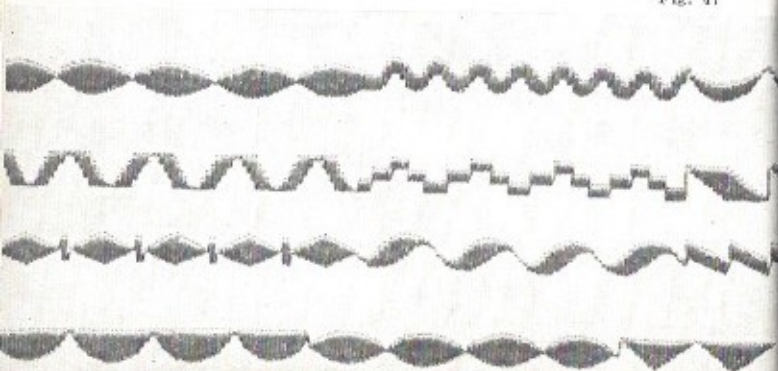
Fig. 46

A further variation is possible by combining individual ornamental stitches during sewing as seen from the example below.

Combination patterns:

- a) Stitch patterns combined Fig. 47
- b) Several stitch rows combined Fig. 48

Fig. 47



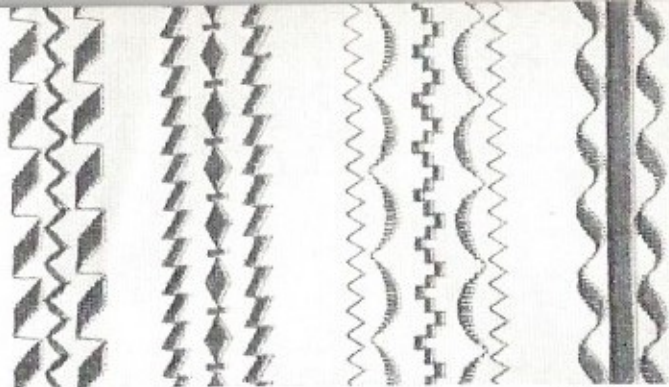


Fig. 48

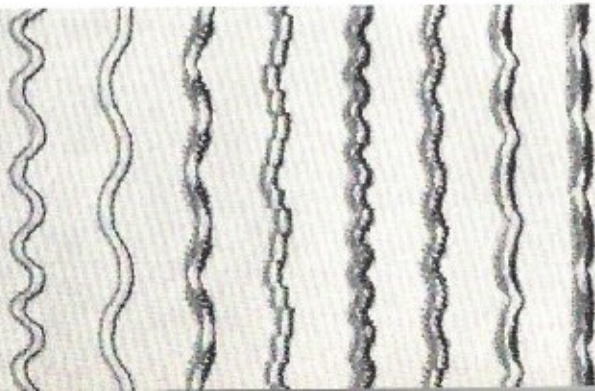
### Automatic Ornamental Stitches with two Needles

Zigzag stitches are also possible when sewing with two needles. However, make sure that the two needles are not displaced further than allowed by the elongated hole in the throat plate.

Needle amplitude plus distance between needles equals width of elongated hole. When a double needle with  $\frac{1}{12}$  inch needle distance is used, the stitch width must not exceed  $\frac{1}{12}$  inch.

Naturally ornamental stitches made with two needles may also be modified by altering the material feed and by yarn selection (2 colors).

Fig. 49



## Pintucking

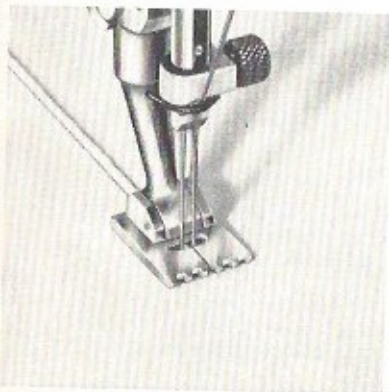


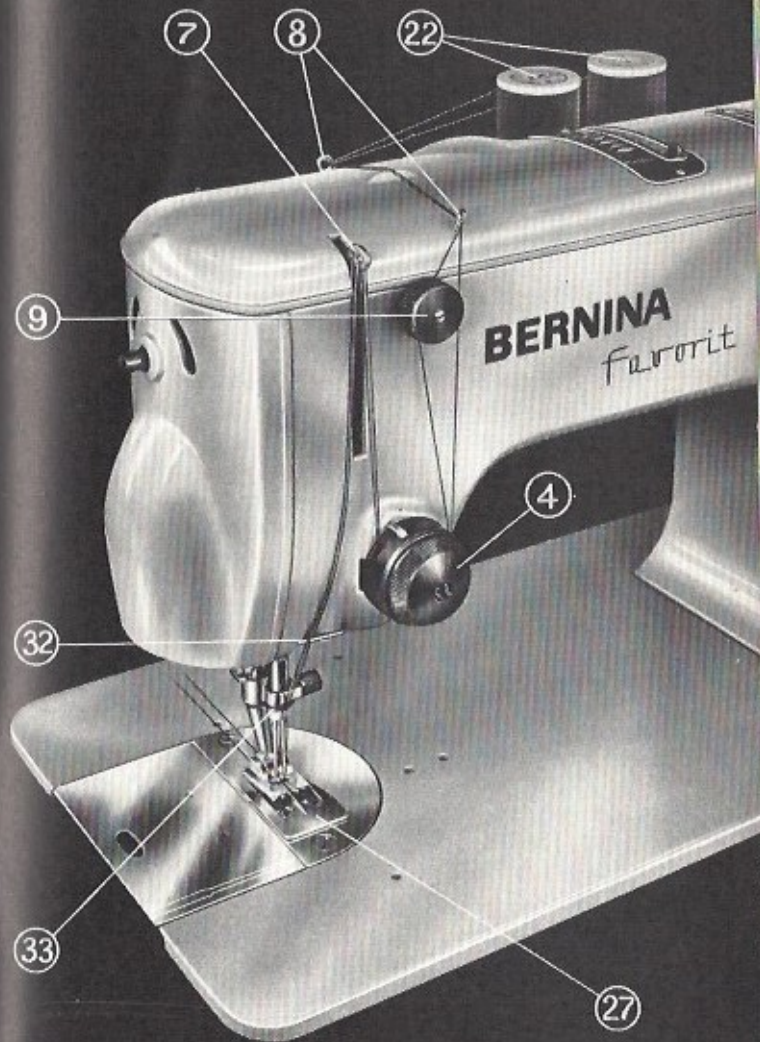
Fig. 50

The complete pin-tucking attachment comprises the following members:

- 3 double needles for pin-tucks of approx.  $\frac{1}{12}$ ,  $\frac{1}{8}$  and  $\frac{1}{6}$  inch width
- 3 pin-tuckers with 3, 5 and 7 grooves
- 1 pin-tucking tongue
- 1 pin-tucking yarn threader

When preparing the machine for pin-tucking, proceed as follows:

1. Set needle to centre position in hole by adjusting control 13 (Fig. 1) to centre.
2. Set zigzag lever 12 (Fig. 1) to zero.
3. Remove standard needle from needle bar and insert a double needle (proceed as for standard needle).
4. Attach the pin-tucking foot corresponding to the needle distance.



### Threading the two Top Threads Fig. 51

To thread the machine for pin-tucking with two top threads, proceed as for normal sewing. The thread reels are slipped on the double reel holder with the two reel pins 22 at the rear of the machine. The thread of the front reel is passed through the rear eyelet 8 on the top of the stand, hence to the eyelet 8 in front and through the rear thread tension disc which is separated from the front disc by an intermediate disc. Then pass the thread through the upper opening of the take-up lever 7, down behind the thread guide eye 32 on the stand and then into the needle holder eyelet 33 and finally through the left-hand needle eye. The second thread is threaded similarly, but passed through the front thread tension disc to the lower hole in the thread take-up lever 7, and through the right-hand needle eye. Both threads should be separate from each other in the thread tension unit since better pin-tucks are obtained that way.

### Pin-tucking Fig. 52

A pin-tuck is formed by the bottom thread which pulls the two top threads together so that the fabric between the two needles is deformed into a bead.

Additional tension is necessary so that the threads of the left-hand and right-hand needles can be adjusted separately. Thread tension is adjusted according to the type of material and the desired shape of the pin-tucks.

For pin-tucks with inserted cord, insert a cord, using threader, in the cord guide from below and pass it upwards through the small oblique hole in front of the



Fig. 52

slot in the throat plate. The cord guide is attached by the two front screws holding the gear-box cover.

In order to obtain well-defined, attractive beads when making large-size pin-tucks, use pin-tucking plate 27, which can be attached to the throat plate similarly to the darning plate.



## Embroidering around Holes

The complete equipment for embroidering around holes, which is not part of the standard accessories, comprises the following parts:

- 1 Hole embroidery plate No. 1435
- 3 Slides with guide lug for hole embroidering, 2, 3 and 5 mm diameter, Nos. 1436, 1437 and 1438
- 1 Hole embroidery foot No. 53 06 62
- 3 Punches No. 1316 with 1½, 2 and 3 mm hole diameter
- 1 Wooden block No. 1439

For hole embroidering, set up the machine as follows:

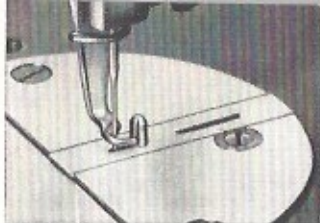
1. Set needle to the *left* by placing handle 13 (Fig. 1) to the left.
2. Lower feed dog by placing control lever 17 (Fig. 12) to the left for darning symbol.
3. Attach hole embroidery plate with the slide suitable for the work planned.

Embroidering threads No. 60-80, two-ply, are employed for top and bottom threads in order to sew around the hole evenly. Bottom thread tension should be slightly higher than that of the top thread so that the thread knots will be located on the lower face of the material. Always use the embroidery frame. We recommend winding strips of cloth round the outer ring in order to increase the tension of the workpiece and to prevent damage. Only after clamping the material in this manner, punch the holes on the wooden block, using the appropriate punch. An awl may be used in place of the punch. It is advantageous previously to mark the location of the holes on the material by means of a pencil or the like. Then place the material under the hole embroidering foot so that the guide lug of the slide projects through the hole. As mentioned above, the needle should be set to the left, as shown in Fig. 20c.

The slide in the embroidering plate should be so positioned that the needle, when effecting a right-hand stitch, enters in the recess of the guide lug just beyond the edge of the material. This setting is altered according to stitch length and should therefore be repeated. Then allow the machine to operate at uniform speed,

Fig. 53





Position of slide  
for hole embroidery

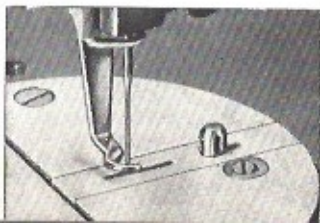
Fig. 54

at the same time turning the embroidering ring three or four times around the guide lug, again at a uniform rate, in the clockwise direction. Then set zigzag knob 12 (Fig. 1) to zero and secure the thread by a few stitches. These stitches should be parallel with the threads of the embroidery so that they remain practically invisible.

If the slide of the embroidering plate is reversed as shown in Fig. 55, the guide lug can be used as a centre in making circular round embroidery. The needle enters the elongated slot of the slide. In this case, a change of the stitch width, of the rate of rotation of the embroidering ring during stitching, or the use of threads of different colours, very attractive and varied patterns can be produced. When embroidering around holes, observe the general rule that holes of one size should be finished successively so that the slide need not be changed too frequently.

Fig. 55

Position of slide  
for circular embroidery



## Motor

The powered BERNINA 540 Favorit or the Bernina Model 542 is driven by a vertical motor with a friction wheel pulley. The motor is pivotally suspended in the extension plate 18 so that its driving pulley is resiliently forced against the fly-wheel rim 11. The front end of the extension plate 18 carries the starter-pedal socket 22, the centre supports the vertical motor 21 and the rear end the machine plug for connection of the machine to the mains.

Attached to the housing is the so-called rating plate which indicates voltage and motor output. Before connecting the machine to the mains, be sure that the voltage indicated on the plate corresponds to that of the mains. Mains voltage is given on the current meter of your home. Do not rely on voltage indications given on wall sockets or plugs.

Other rules than those given in the chapter "Cleaning and Oiling" apply to the maintenance of the motor. The following instructions should be observed:

1. Excessive oiling will cause trouble.
2. The motor of every new machine is oiled at the factory, and need not be oiled during the first year.
3. After the first year, the motor requires oiling only *every three months if the machine is in daily use*, a maximum of 4-5 drops being placed into the two oiling points marked in red. If the machine is used *once a week*, one annual oiling in the second and subsequent years is sufficient.
4. The oiling points are located on top and bottom at the rear of the machine. The top oiling point is accessible when the machine is in operative position; the bottom one becomes accessible when machine is tilted.
5. Make sure that the other points on the motor are kept free from oil.

## Useful Hints

Various causes of little troubles, which can easily be eliminated, are listed below:

### Top Thread Breakage

Needle of inferior quality, badly polished needle.

Needle not properly inserted. Long groove must face front.

Needle blunt or bent.

Needle too fine in relation to thread used.

Top thread tension too high.

Thread passages not polished.

Thread control spring broken.

Needle hole in throat plate damaged by needle, requires repolishing.

Shuttle point has become too sharp by needle action (call mechanic).

Shuttle not oiled.

Inferior thread or knotted thread.

Thread dried out in storage. Threads should never be kept in heated rooms.

### Bottom Thread Breakage

Bottom thread tension too high.

Bottom thread not properly wound on bobbin.

Bobbin deformed or jamming in case.

Needle hole in throat plate damaged by needle, requires repolishing.

### **Faulty Stitches**

Unsuitable needle. Use needles System 130 or Standard 15×1 only.

Needle blunt or bent.

Needle not properly inserted. Long groove must face front. Push needle home completely.

Inferior, badly polished needle.

Cheap needles often tear thread and break easily. This may cause costly damage to throat plate and feed dog. The best needle is the most economical in use.

Needle not in proper relation to thread number.

### **Needle Breakage**

Needle bent.

Needle too fine in relation to thread.

Needle holding screw not properly tightened.

Top thread tension excessive.

When the work is pulled towards the operator on completion, the needle often bends. When the needle performs the first stitch subsequently, it fouls the throat plate and breaks. Therefore always pull work *away from you* from under the presser foot.

During sewing, however, the work should not be pulled away from you *too hard*.

Use of cheap thread which is unevenly twisted or even knotty. A single knot on a thread reel may break the needle and even damage the throat plate so that far more expense may ensue than by securing the best possible thread.

### **Faulty, uneven Stitch Rows**

Thread ends etc. between the thread tension discs.

Thread ends under case spring.

Case deformed, jamming.

Bottom thread thinner than top thread.  
Shuttle not oiled.  
Uneven thread thickness.

### **Work Puckers**

In most cases this is caused by excessive tension in relation to type of work. When sewing Knitted Goods, never pull work away from you with your hands which will cause work to pucker. It is advantageous, on the contrary, to assist the forward movement by pushing.

### **Slow Operation of Machine**

If the machine has stood in a damp room for some time without being used, or if inferior oil becomes tacky during protracted idleness, the machine will operate slowly. In such a case, squirt petroleum into all oil holes, run machine for some time until the gummy oil residues have dissolved and then oil again. This operation should be repeated until all gummy oil has been flushed out of the bearings. In stubborn cases of resinification, the machine must be completely disassembled and cleaned by a sewing machine mechanic.

If the machine operates easily when fly-wheel is turned, but sluggishly when pedal-operated, the driving belt is too tight.

### **Thread jammed in Shuttle**

This may occur owing to inexperienced handling. Unthread needle. After tilting top portion backward, remove all visible thread ends from shuttle. Then oil shuttle race slightly and allow oil to act on jammed thread for one or two minutes. Subsequently, turn fly-wheel forward and backward several times. The jammed thread ends are severed by this movements and can be removed. Do not remove shuttle retaining screws to remove shuttle,

and do not press on shuttle by means of screwdriver or scissors, for the shuttle is hardened to glass brittleness and consequently very easily damaged.

### **Prevention of Thread Jamming in Shuttle**

Jamming of thread in the shuttle can only occur when machine is handled inexpertly, i. e. when the following rules have not been observed :

1. Movement of the fly-wheel *in the wrong direction*, will cause the top thread to catch and jam the shuttle. Always turn fly-wheel towards you.
2. Prior to sewing, bring up the bottom thread, place beneath the presser foot and pull to the rear together with the top thread. Hold between thumb and index finger of your left hand until the first stitches have been made.
3. After every sewing operation make sure that take-up lever is in its extreme raised position.
4. When sewing a corner, first raise take-up lever, then lightly prick material with the needle before turning the material to sew the corner.
5. When machine is not in use, unthread needle and place a piece of cloth under presser foot.

### **Note**

To prevent damage to presser foot, place a piece of cloth under it whenever practicable.

Place a piece of cloth under presser foot whenever machine is out of use.

In order to avoid thread jamming, make sure after every sewing operation that the take-up lever is in its raised position.

Subject to modification of construction with respect to the above text and blocks.







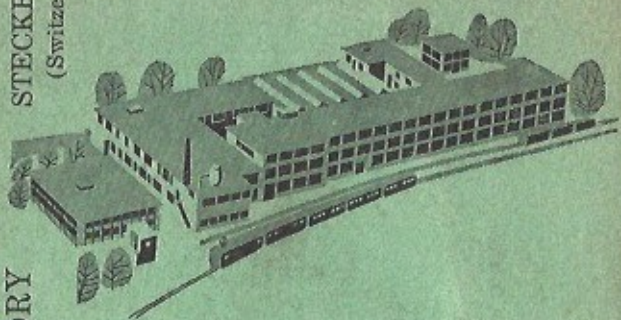


## Standard Accessories for Model 540 and Model 542

Part No.	On Machine
540030	1 Extension plate with socket (Model with foot pedal)
541000	1 Extension plate with motor, machine and pedal-starter sockets
	<i>In Accessories Kit</i>
530653	1 Zigzag presser foot with hinged base
530657	1 Zigzag embroidering foot, also used for braiding 1 red line
530611	1 Combination roll and shell-roll hemmer 2 red lines
530608	1 Hemmer
530618	1 Lap hemmer
530615	1 Edger with quilting guide
530620	1 Button foot 2 black lines
530665	1 Button-hole foot 3 black lines
1164	1 Wooden block
540670	1 Darning foot
1145-2	1 Darning plate
1143-1	6 Bobbins, of which one in machine
5361	1 Medium screwdriver
5364	1 Small screwdriver
531112	1 Oil can
	1 Pack of needles, System 130, various sizes
	<i>Further Accessories</i>
1449	1 Stocking darning
1484	1 Embroidery ring
531110	1 Connection cable
530971	1 Pedal-starter with cable and plug (Model with motor)
541100	1 Instruction booklet
	<i>Available as Extras</i>
530644	Plain-stitch presser foot with hinged base
530648	Narrow hemmer
530629	Wool darning foot
	Pin-tucking attachment
	Knee control lever, complete
	Hole Embroidery attachment
530650	Adapter for commercial feet

FRITZ GEGAUF LTD.  
BERNINA SEWING MACHINE FACTORY

STECKBORN  
(Switzerland)



BERNINA SEWING MACHINE CO.  
29 WEST 35th STREET  
NEW YORK 1, N. Y.