



BERNINA

Record 
930 Electronic

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Triple zig-zag seam	Wide stitched edges		
	26 Buttonhole,		

Important!

Safety Regulations

Subject to BEAB and OSHA safety regulations (official testing centres in Great Britain and the U.S.A.).

The following safety regulations must be observed without fail:

- The moving needle is a source of danger (risk of injury to fingers). The sewing position must therefore be kept under constant observation.
- Manipulations within the area of movement of the needle, such as changing the needle, the presser foot or stitch plate, must only be performed with the machine switched off (main switch set to \bigcirc position). The same applies when removing and replacing the lower thread bobbin or hook.
- During maintenance work (cleaning or lubricating) or changing the light bulb and interruptions in sewing or after completion of work, the machine must be disconnected from the power supply by pulling out the mains plug.
- Repairs to the electronic section, especially the changing of the lead wire to the foot control unit, may only be carried out by one of our service agencies.

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View of Machine

Model 8



- | | |
|----|---|
| 1 | Hinged cover on free-arm |
| 2 | Free-arm cover |
| 3 | Needle plate |
| 4 | Presser foot |
| 5 | Needle holder clamp |
| 6 | Thread regulator |
| 7 | Automatic long stitch & basting device switch |
| 8 | Thread take-up lever |
| 9 | Thread tension slot |
| 10 | Thread tension disc |
| 11 | Top frame cover |
| 12 | Thread tension indicator |
| 13 | Adjusting wheel for thread tension |
| 14 | Pattern indicator |
| 15 | Lamp indications |
| 16 | Red stitches |
| 17 | Green stitches |
| 18 | Selector lever |
| 19 | Changeover lever |
| 20 | Reel holder pins |
| 21 | Cover of bobbin winding device |
| 22 | Bobbin spindle |
| 23 | Thread cutter |
| 24 | Hand-wheel |
| 25 | Stitch width knob |
| 26 | Needle position knob |
| 27 | Main switch |
| 28 | Buttonhole knob |
| 29 | Stitch length knob |
| 30 | Symbol for sewing/darning |
| 31 | Connection for foot control unit |
| 32 | Sewing/darning knob |
| 33 | Red/green stitch knob |
| 34 | Lamp indications |
| 35 | Opening for knee lifter |



Dear Bernina Customer,

We would like to congratulate you on the purchase of your new Bernina sewing machine and thank you for the confidence shown in our products.

You have acquired a top-quality Swiss product, manufactured with the utmost skill and care at our Bernina factory in Steckborn / Switzerland.

«My Bernina Guide» provides you with all the necessary information about your Bernina and its countless applications for sewing work.

If you should require further details or advice about your sewing machine or sewing problems, please contact your Bernina stockist.

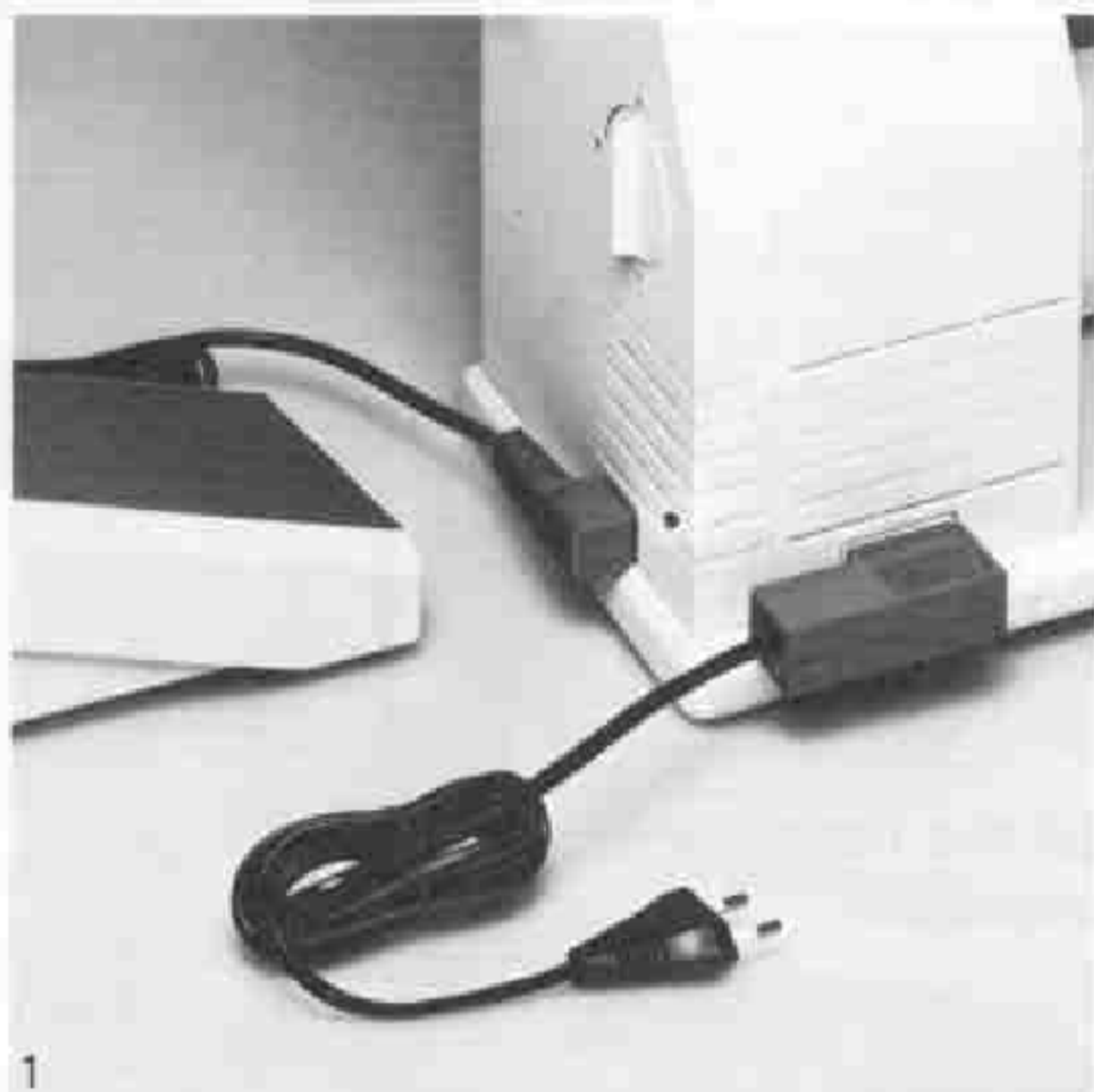
We hope you are successful and happy with your sewing and dressmaking work.

With kind regards

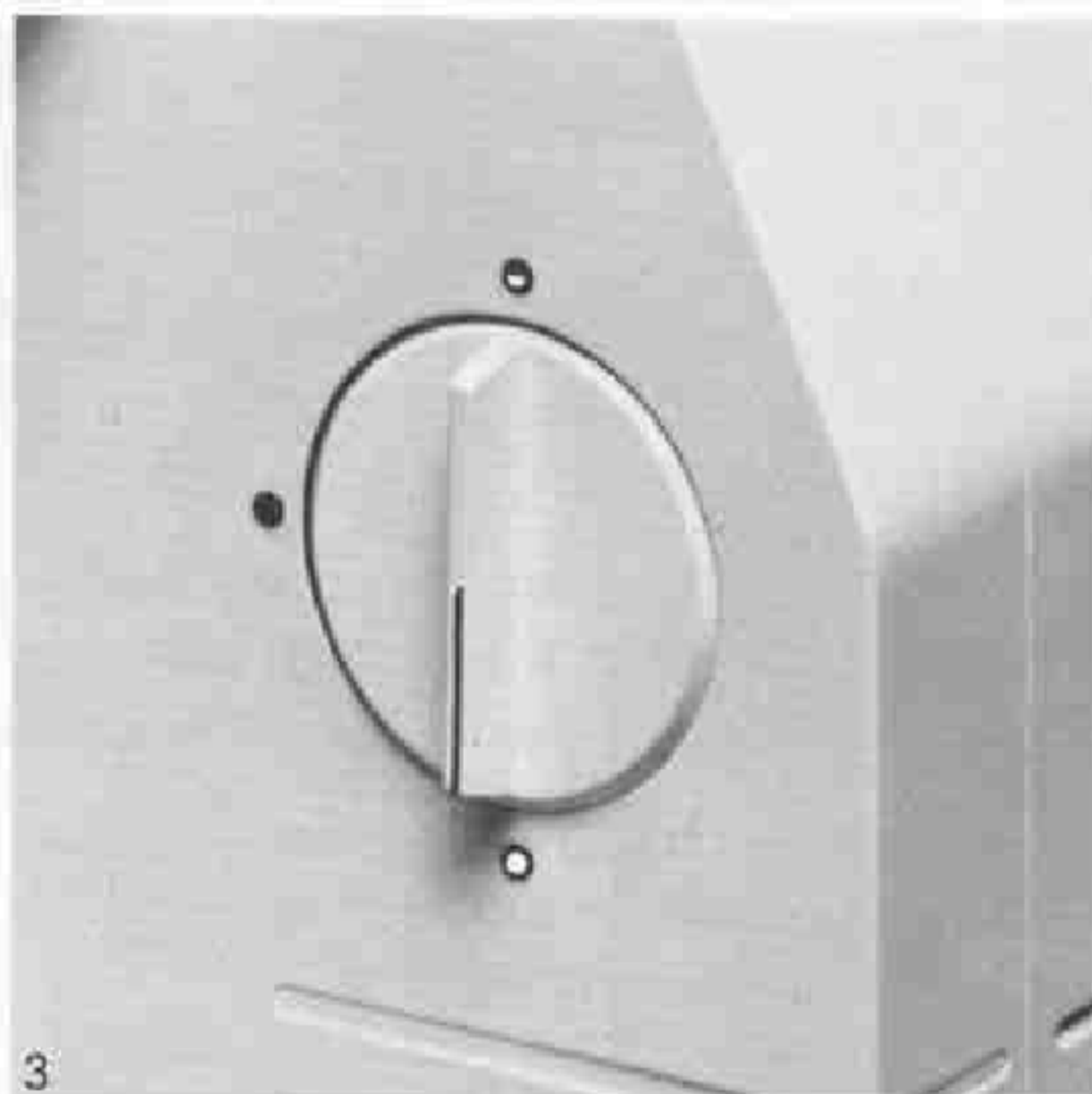
Odette Ueltschi

Odette Ueltschi-Gegauf, Chairman of the Board
FRITZ GEGAUF LTD.
Manufacturer of Bernina Sewing Machines, CH-8266 Steckborn TG, Switzerland

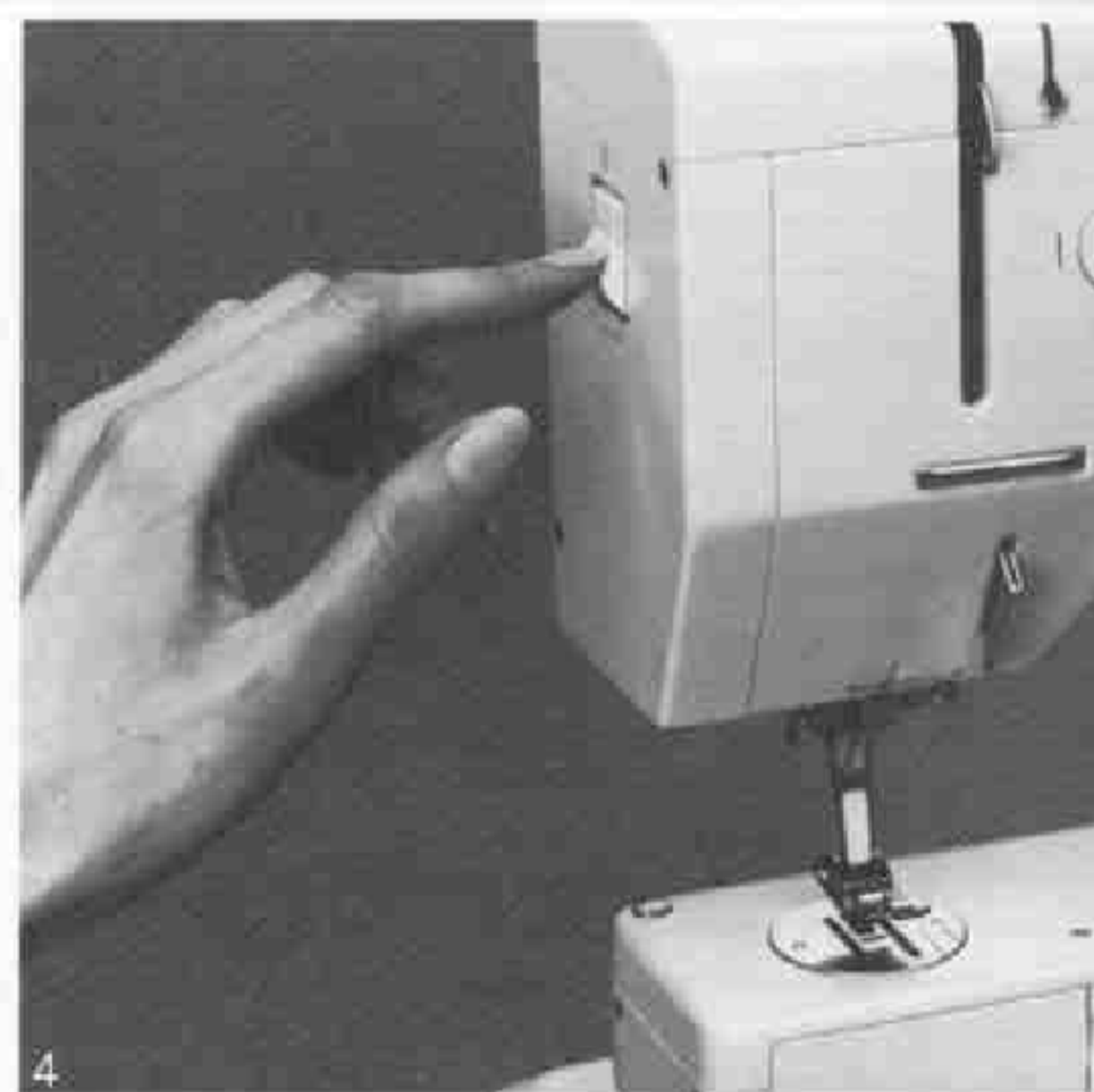
Electrical Section



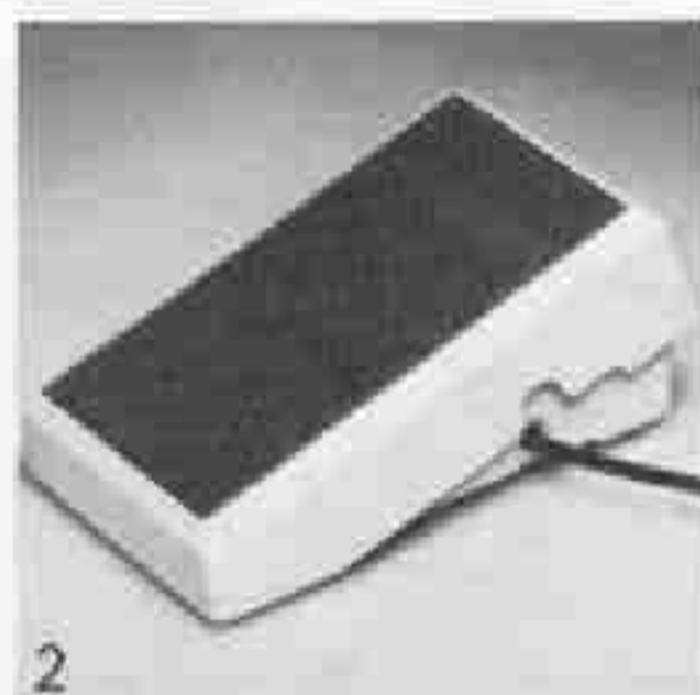
Connecting mains cable and foot control unit
The terminals on the machine for mains cable and foot control unit can be seen in Fig. 1.



Power switch
The power switch on the right below the hand-wheel (Fig. 3) has 3 positions:



Sewing light
The sewing light is switched on and off with the switch fitted in the front cover (Fig. 4). The sewing light is also switched off when the main switch is at \bigcirc = off.



Foot control unit (Fig. 2)
For controlling the sewing speed.

- \bigcirc **Off** – the machine is switched off
- \bullet **On** – the machine is switched on for maximum sewing speed. The sewing speed can be regulated up to maximum speed by pressing the foot plate of the foot control unit.
- \ominus **On** – the machine is switched on for reduced sewing speed. At this switch position the maximum speed is reduced to approximately half. When switched to «reduced sewing speed» sewing is made much easier for more difficult work as well as for those less used to electric sewing machines.

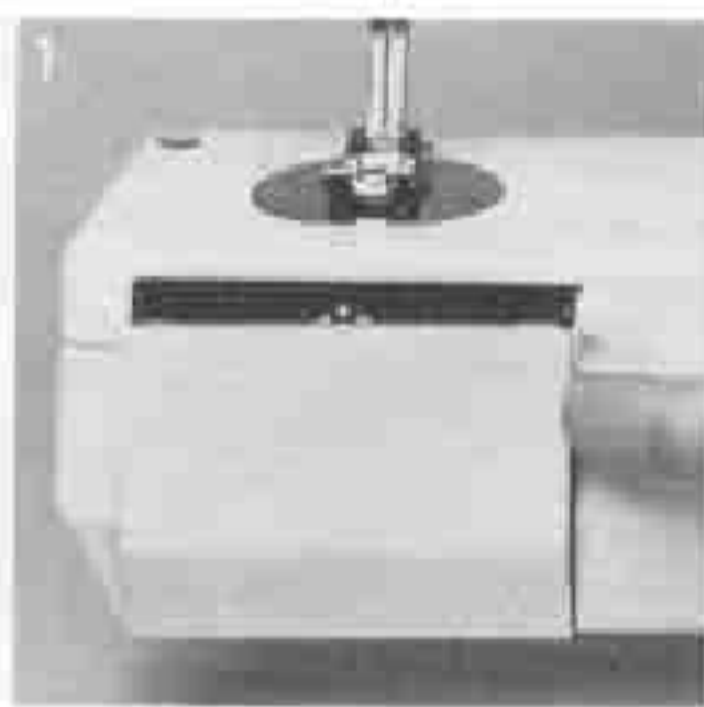
Motor
The d.c. motor and electronic speed control ensure exceptional penetrating power even when sewing slowly. The high penetrating power considerably simplifies the sewing of very heavy materials, very dense fabrics and thick seams.

Electronic needle stop
Every time you stop sewing an electronic system takes the needle to its highest position. A light tap with the heel on the back of the foot control will take the needle electronically down into the work. A second tap will bring it up again and so on.

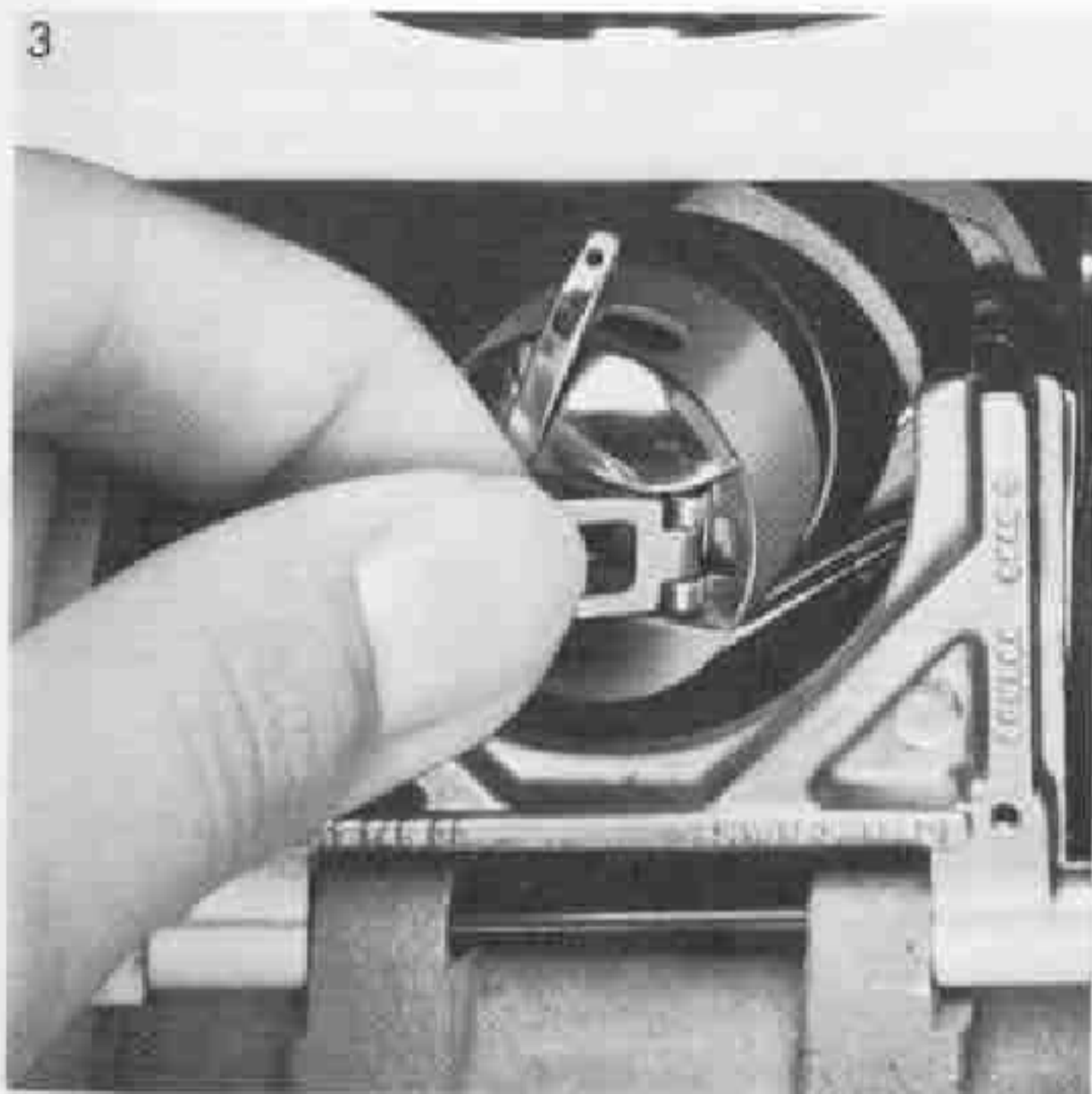
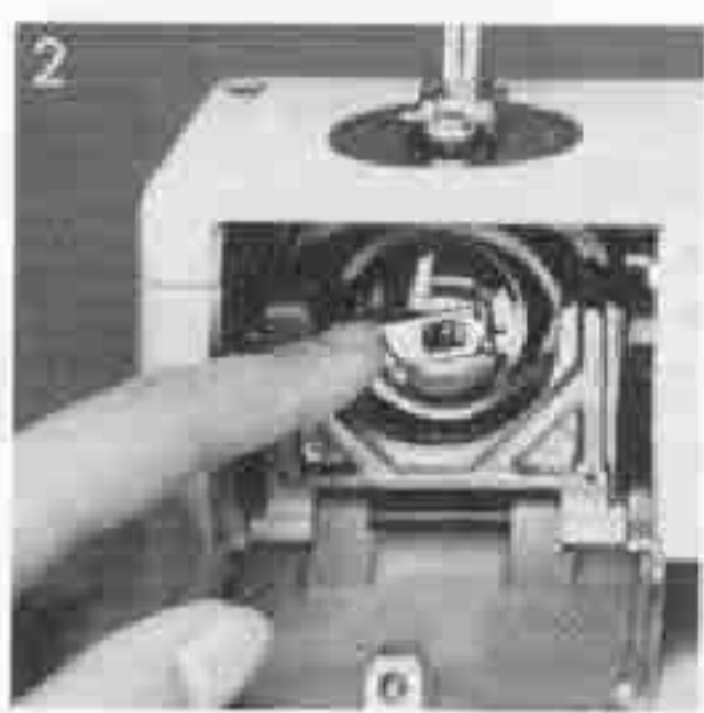
Removing Bobbin Case

- Set power switch to ○.
- Check whether needle is up. If not, raise needle with handwheel.

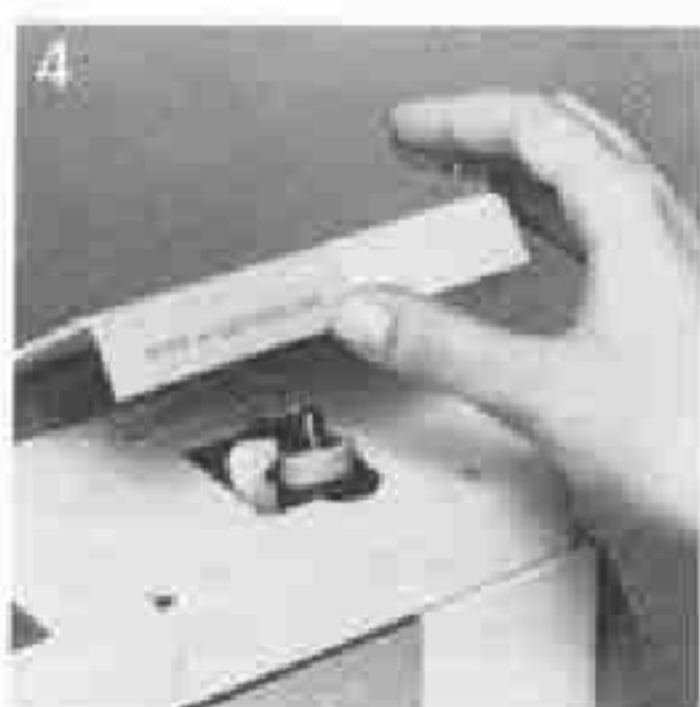
- Open hinged cover on free-arm (Fig. 1).



- Lift the latch of the bobbin case with the index finger of the left hand (Fig. 2) and remove bobbin case (Fig. 3).

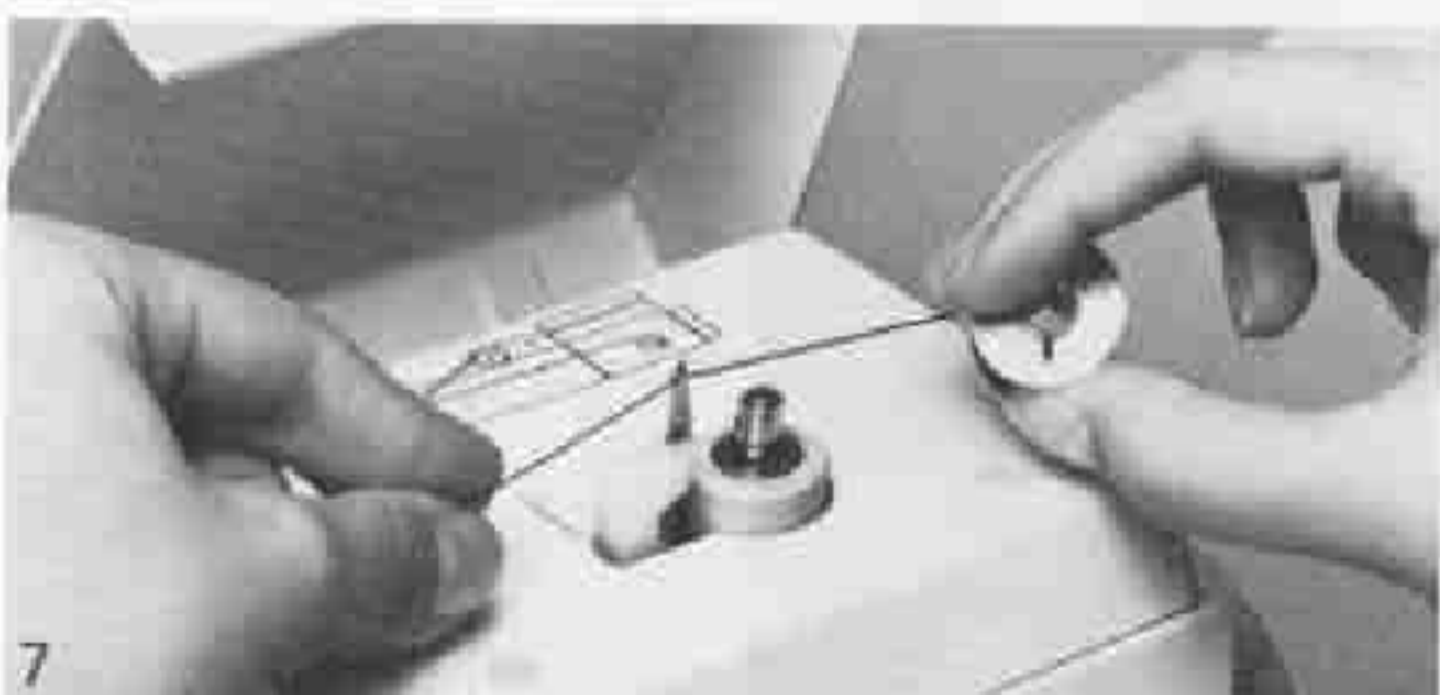


Winding Lower Thread



- Open cover of bobbin winding device (Fig. 4). This disengages the machine.

- Place empty bobbin on spindle (Fig. 5). This switches on the winding device.



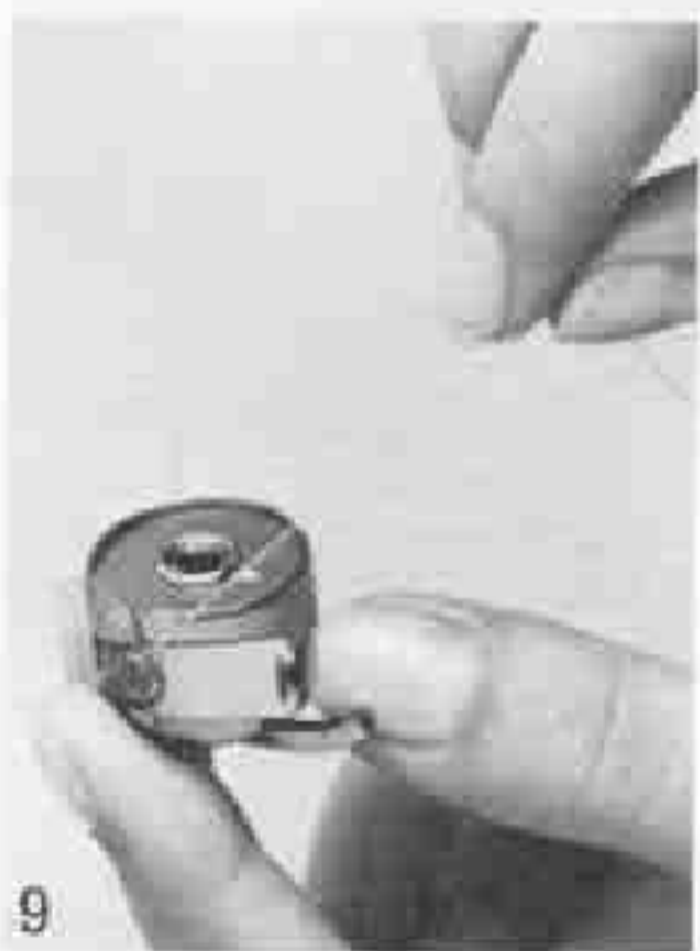
- Place thread on a reel holder pin and take it clockwise around the pre-tension stud to the empty bobbin (Fig. 6). Wind



round empty bobbin several times, also in a clockwise direction.

- Set power switch to ●
- Start bobbin winding device by operating foot control unit. When the bobbin is fully wound, the winding device switches off automatically.

Inserting Bobbin

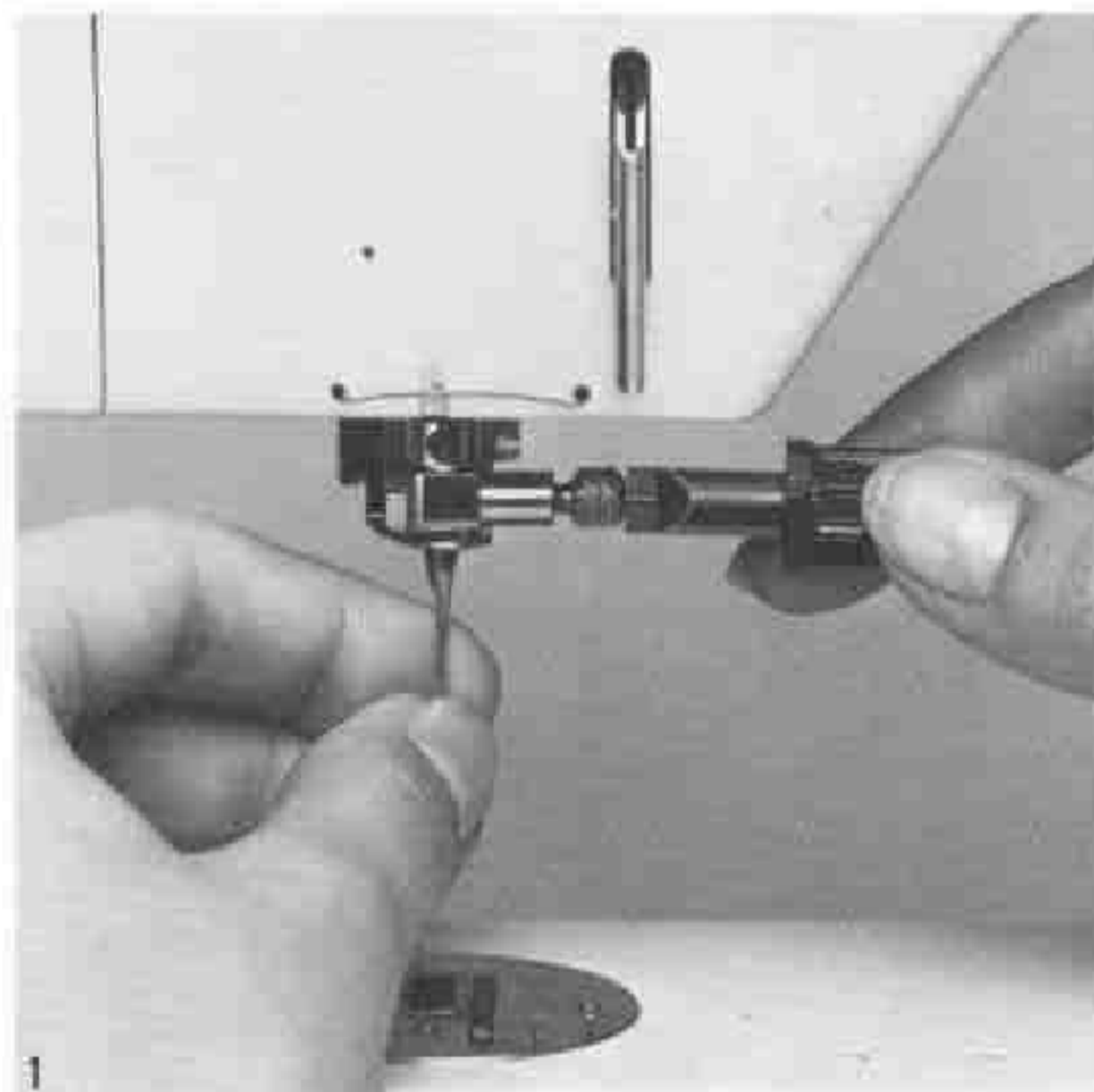


- Cut thread when removing bobbin by pulling against the small blade (Fig. 7).
- Do **not** yet close cover of winding device!
- Hold bobbin case in one hand, insert bobbin so that the thread is wound in the clockwise direction, see arrow (Fig. 8).
- Pull thread through the slot and below the spring until it lies in the T-shaped slot at the end of the spring, do **not** hold bobbin for this purpose, (Figs. 9+10).
- The bobbin must turn in the clockwise direction of the arrow when pulling the thread.


Inserting bobbin case into hook

- Hold bobbin case by the latch with the index finger and thumb of the left hand. Insert so that the finger of the bobbin case points upwards and fits in the notch of the hook race cover.
- Check: pull end of thread
- Close hinged cover
- Close cover of winding device

Inserting Needle



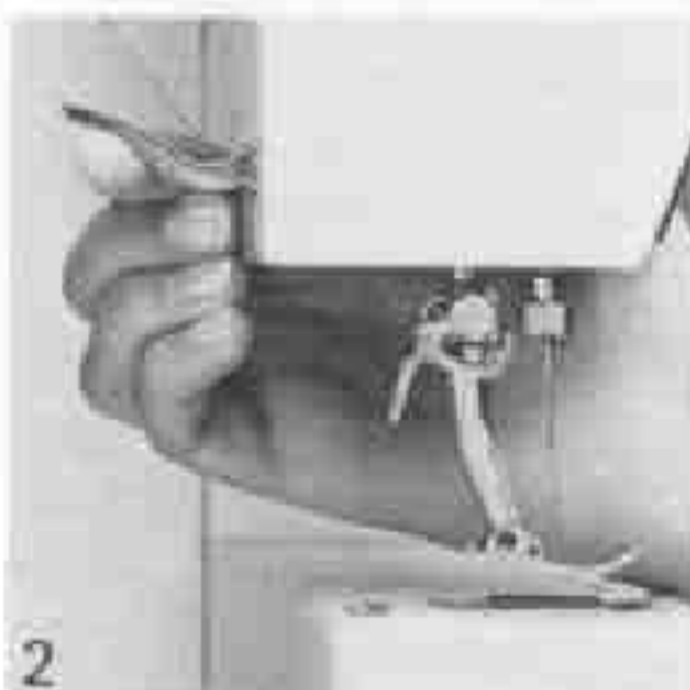
See page 10 for suitable needle sizes.


- Set power switch to 
- Check whether needle is up
- The accessories box contains a small black screwdriver for loosening or tightening the needle clamp.
- Loosening the needle clamp: half a turn to left, anticlockwise (Fig. 1)
- Inserting needle: **flat shank side** of needle always at rear

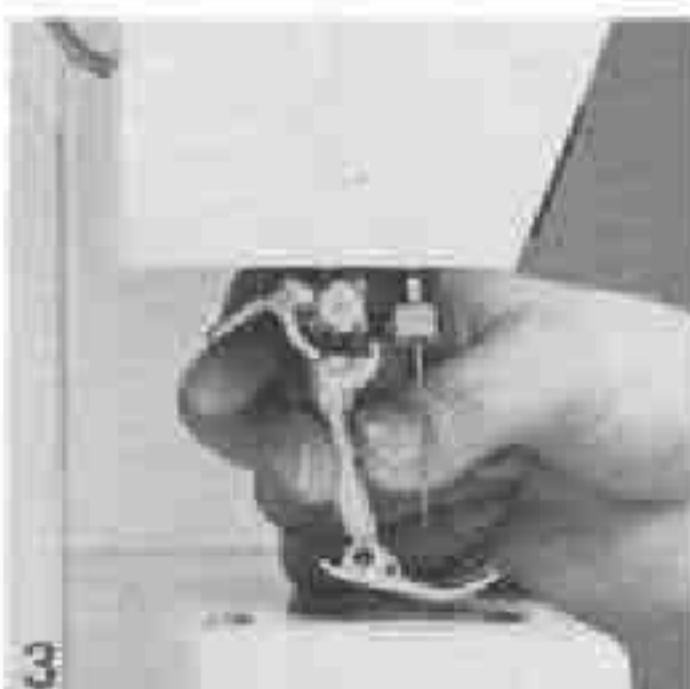
- Insert needle **fully** until it reaches the top. If the needle does not contact the top, i.e. is set too low, faulty stitches are produced.
- Tighten needle clamp firmly.

Changing Presser Foot

Refer to page 9 concerning presser feet and their range of application. The success or otherwise of a piece of sewing largely depends on the correct choice of presser foot. It must therefore be simple and quick to change the presser foot.



- Set power switch to 
- Check whether needle is up
- Raise presser foot (Fig. 2)

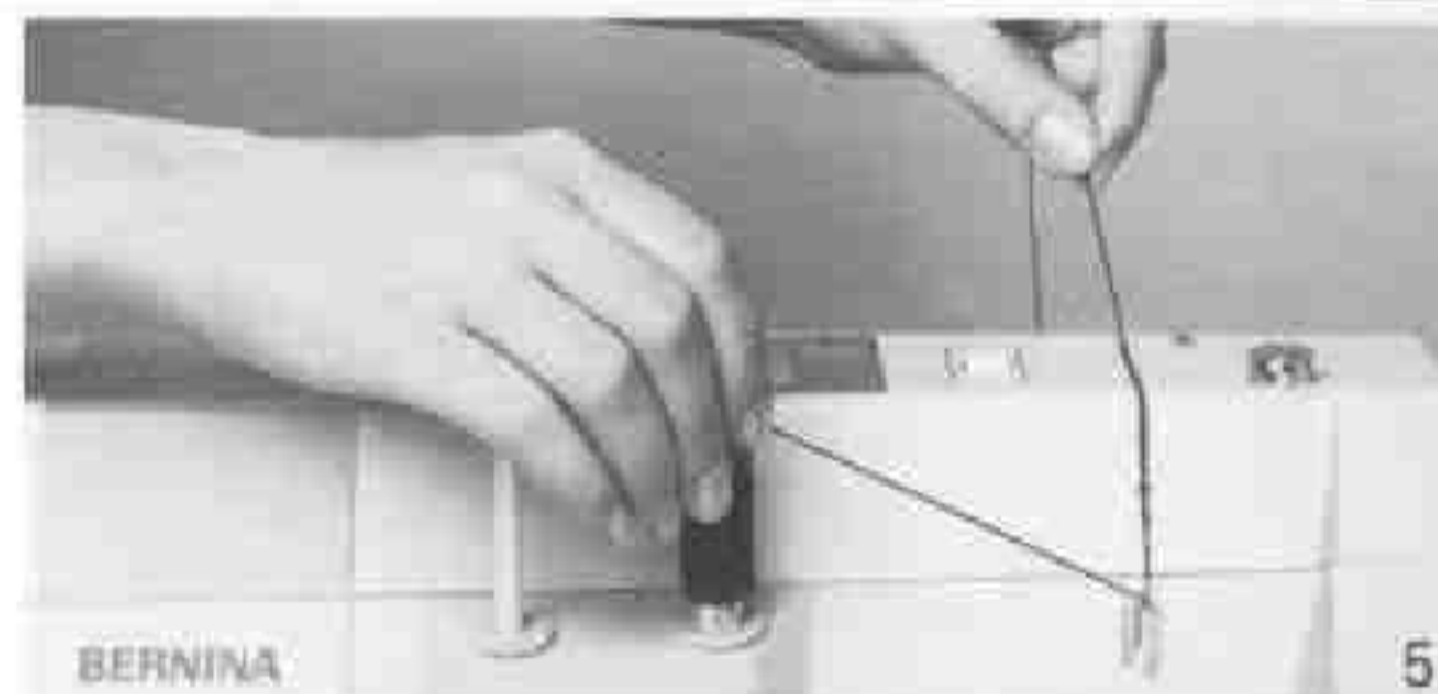



- Raise clamping lever with the index finger of the right hand and remove the presser foot using the middle finger and thumb (Fig. 3).



- Securing the presser foot: same procedure, but press clamping lever downwards with index finger (Fig. 4).

Threading Upper Thread



- Set power switch to 
- Check whether needle is up
- Raise presser foot
- Place reel of thread on one of the two reel holder pins.

Hold reel of thread firmly while threading (Fig. 5).

- First clip the thread into the thread guide at the rear of the machine, then bring it through the slot in the thread tension (Fig. 5).

- At the front of the machine take thread downwards under the thread regulator, up again to the take-up lever and then downwards to the needle holder thread guide (Fig. 6).



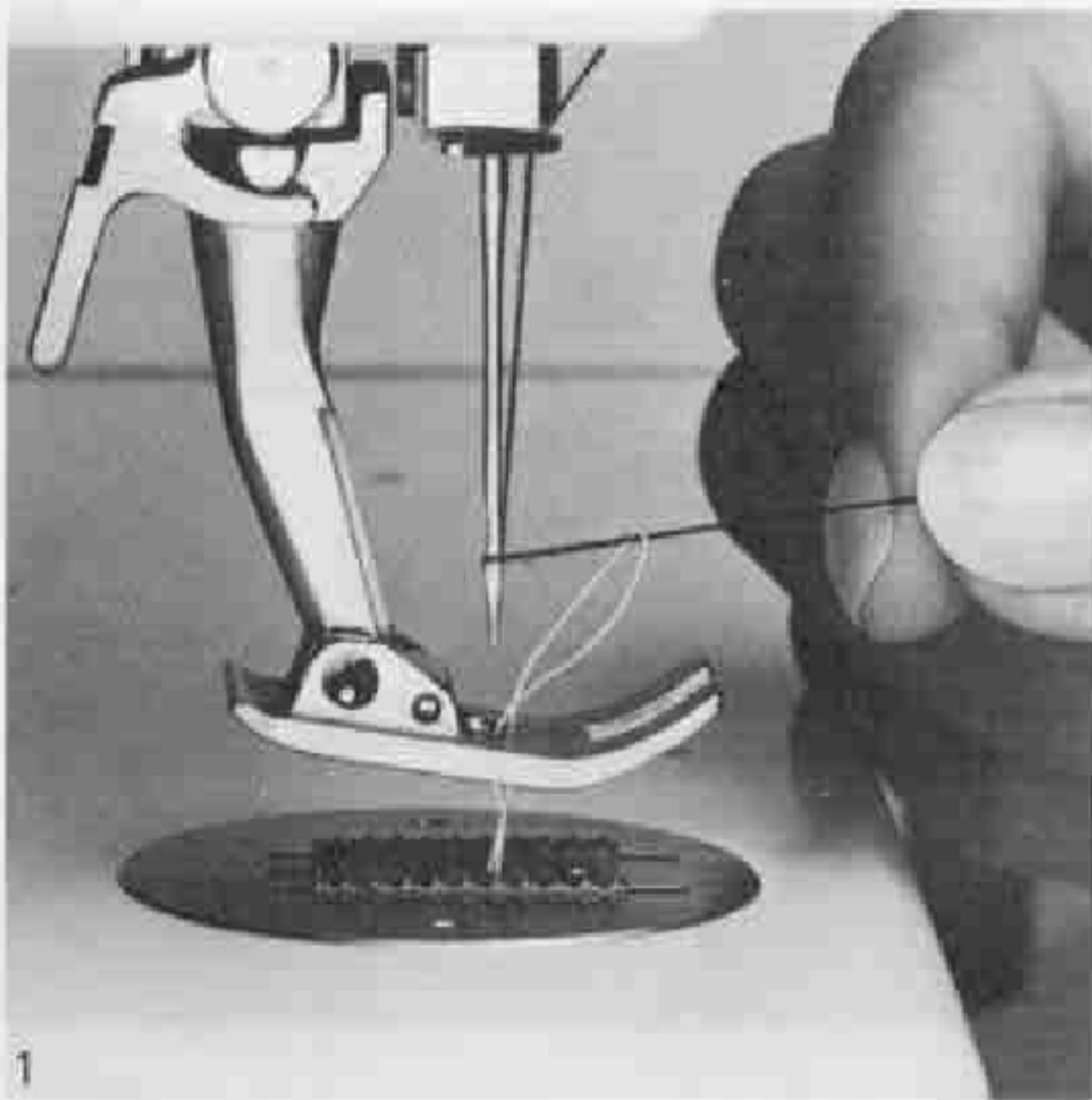
- Always thread needle from front. The small white plate on the front of the presser foot shaft makes it easier to thread the eye of the needle.
- Pull thread approx. 10 cm through eye of needle.

Bringing up Lower Thread

- Hold end of upper thread with the right hand
- Sew 1 stitch by tapping the foot control unit. The electronic needle stop ensures that the needle will be in the raised position.
- Pull upper thread so that the lower thread is brought up through the hole in the needle plate (Fig. 1).
- Take both threads through the slot of the presser foot and clip into thread cutter.

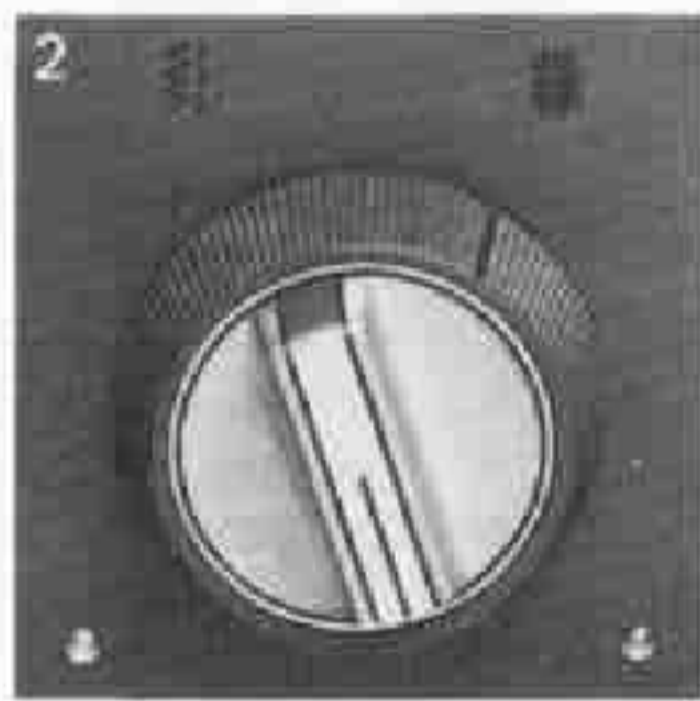
Instead of using the electronic needle stop, the lower thread can be brought up by turning the

hand-wheel forward with the right hand until the needle and take-up lever are again in their highest position. In this case the upper thread must be held in the left hand.



Lowering Feed-dog

For certain types of sewing, e.g. darning, the material should not be moved by the feed. For this purpose, the feed-dog must be lowered by turning the outside, bottom circular knob to the right, until the mark is below the symbol (Fig. 2)

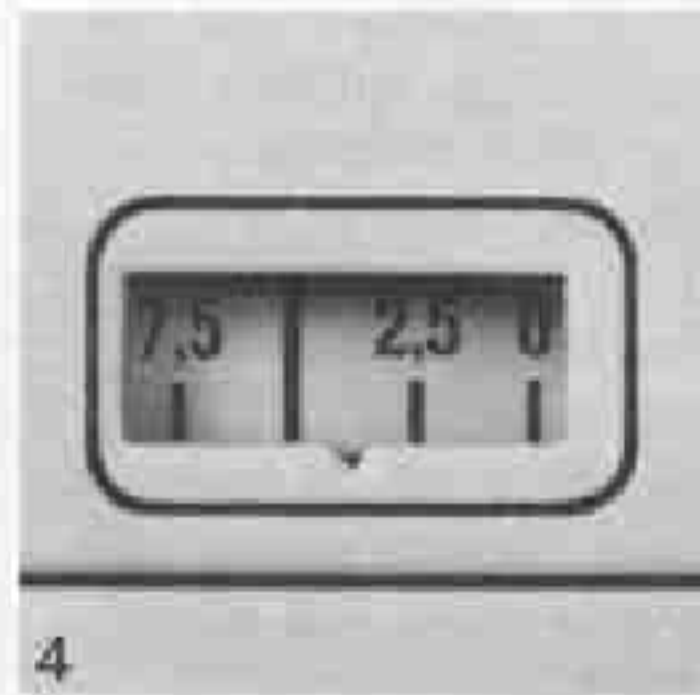
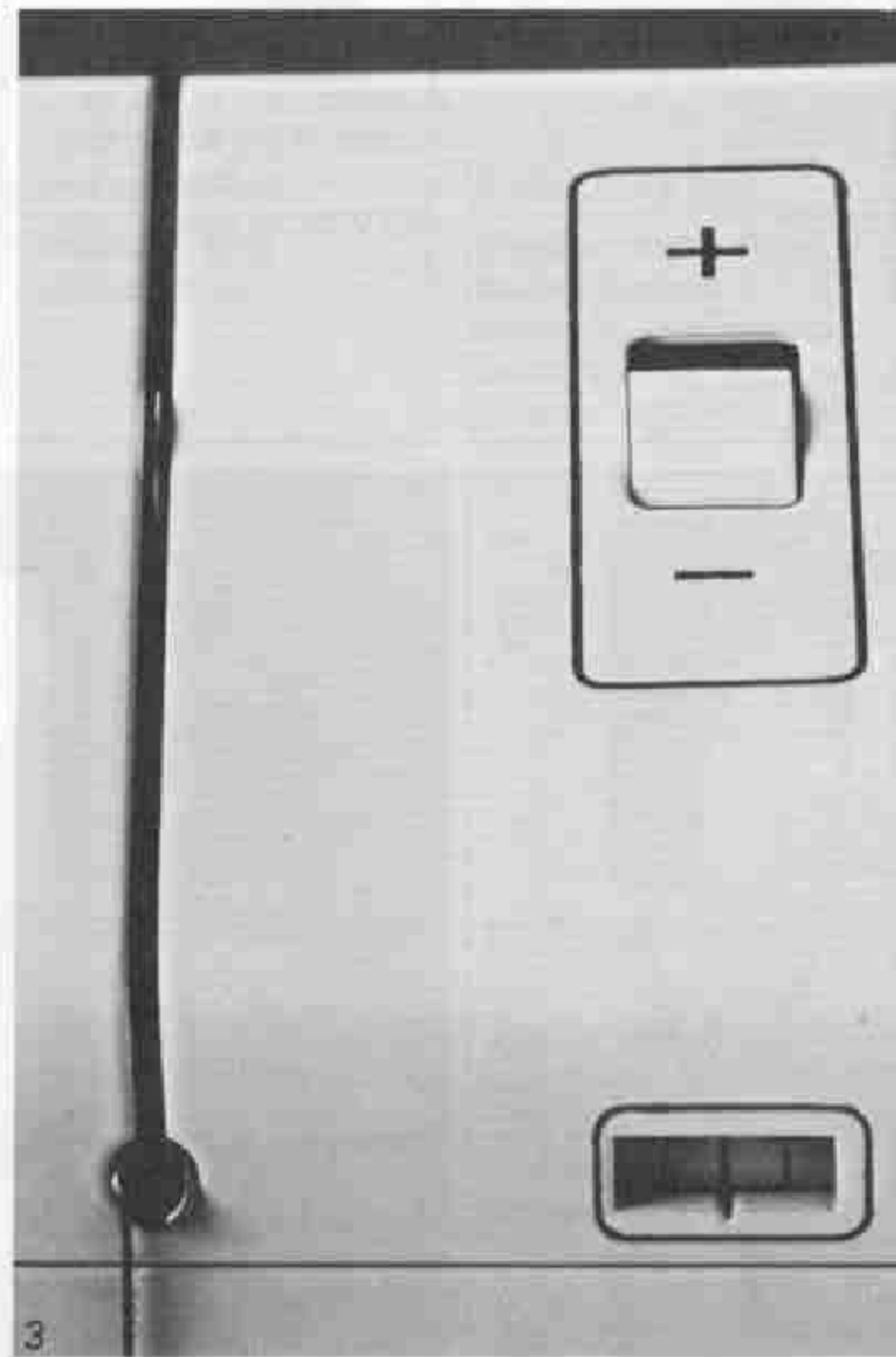


For all normal sewing work the mark must be on the left below the symbol.

Thread Tension

One of the most important Bernina advantages is that the thread tension does not have to be altered for normal sewing. The normal tension is set when the red line on the scale is at the middle of the window (Fig. 3).

For special sewing, e.g. for sewing tailor tacks, the thread tension can be adjusted with the adjusting wheel. Turning this wheel backwards, towards the «+» sign, produces a tighter upper thread tension. The figures 7, 5 and 10 appear in the window. Turning the adjusting wheel forwards, towards the «-» sign, produces a looser upper thread tension. The figures 2, 5 and 0 appear in the window (Fig. 4). Do not forget: reset thread tension to normal, red line in the middle, when a special piece of sewing requiring tension alteration has been completed.



Presser Foot Lifter

Many sewing operations are considerably simplified if both hands can be used for guiding the work.

The presser foot lifter is used for raising and lowering the presser foot with the right knee, leaving the hands free.

Attaching

the presser foot lifter: The presser foot lifter is contained in the carrying case. The opening for the presser foot lifter is located at the right on the front in the base-plate below the lower knob.

• Insert presser foot lifter so that it hangs to the left (Fig. 1).

If the presser foot lifter is moved to the right, the presser foot is raised. It should be possible to operate the presser foot lifter comfortably with the right knee, without altering your customary sitting position.

If the angle of the presser foot lifter provided is inconvenient, it can be adjusted. Your Bernina dealer will gladly make this adjustment for you.

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When the presser foot lifter is pressed to the right the foot is raised, at the same time the feed-dog will be lowered. The next stitch will return the feed-dog to sewing position.

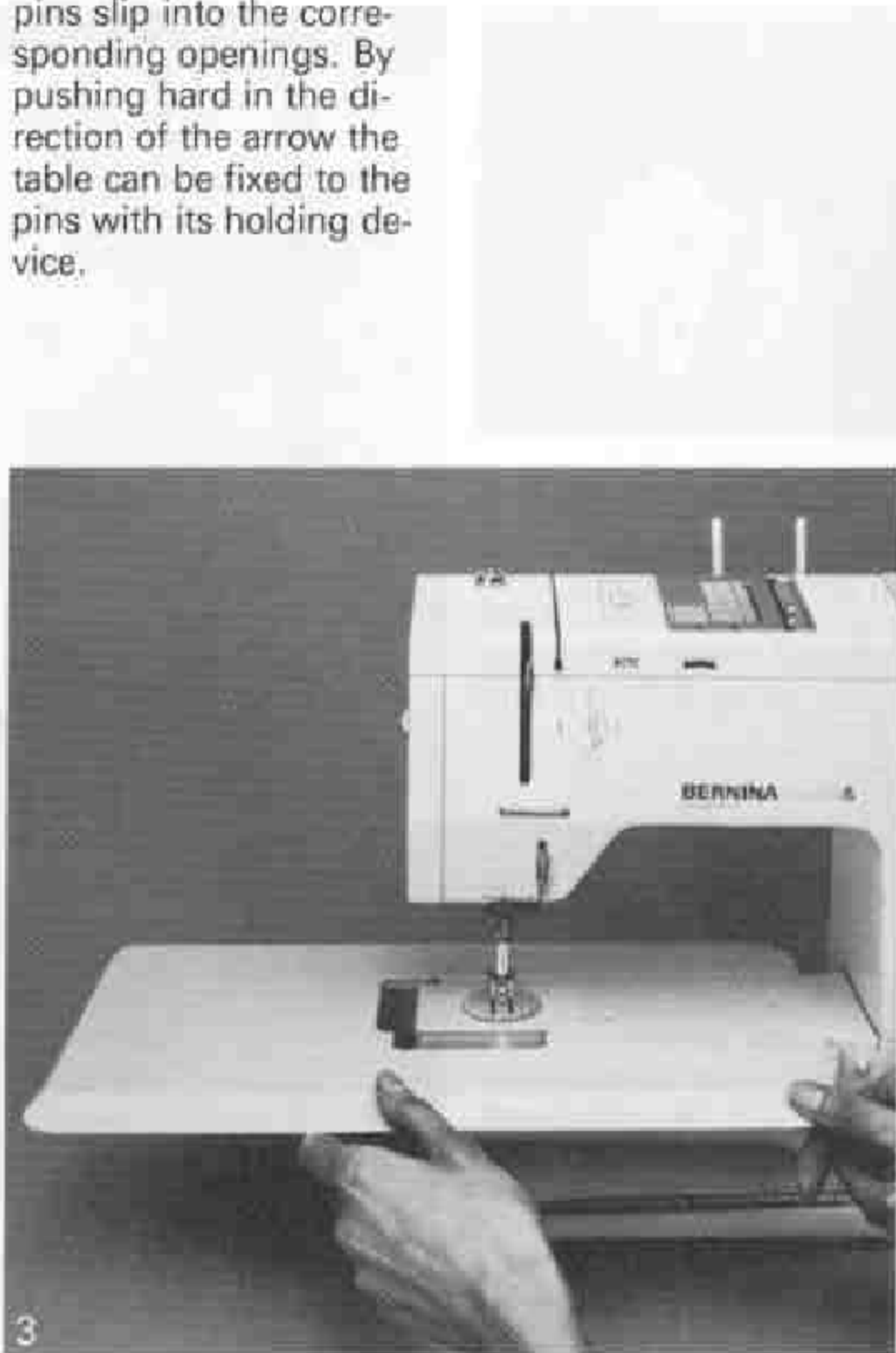


Sewing Table

The sewing table is used to enlarge the working surface. It should be used for all sewing for which the free-arm is not required.

Attaching the sewing table

Slide the table in over the free-arm until the center pins slip into the corresponding openings. By pushing hard in the direction of the arrow the table can be fixed to the pins with its holding device.



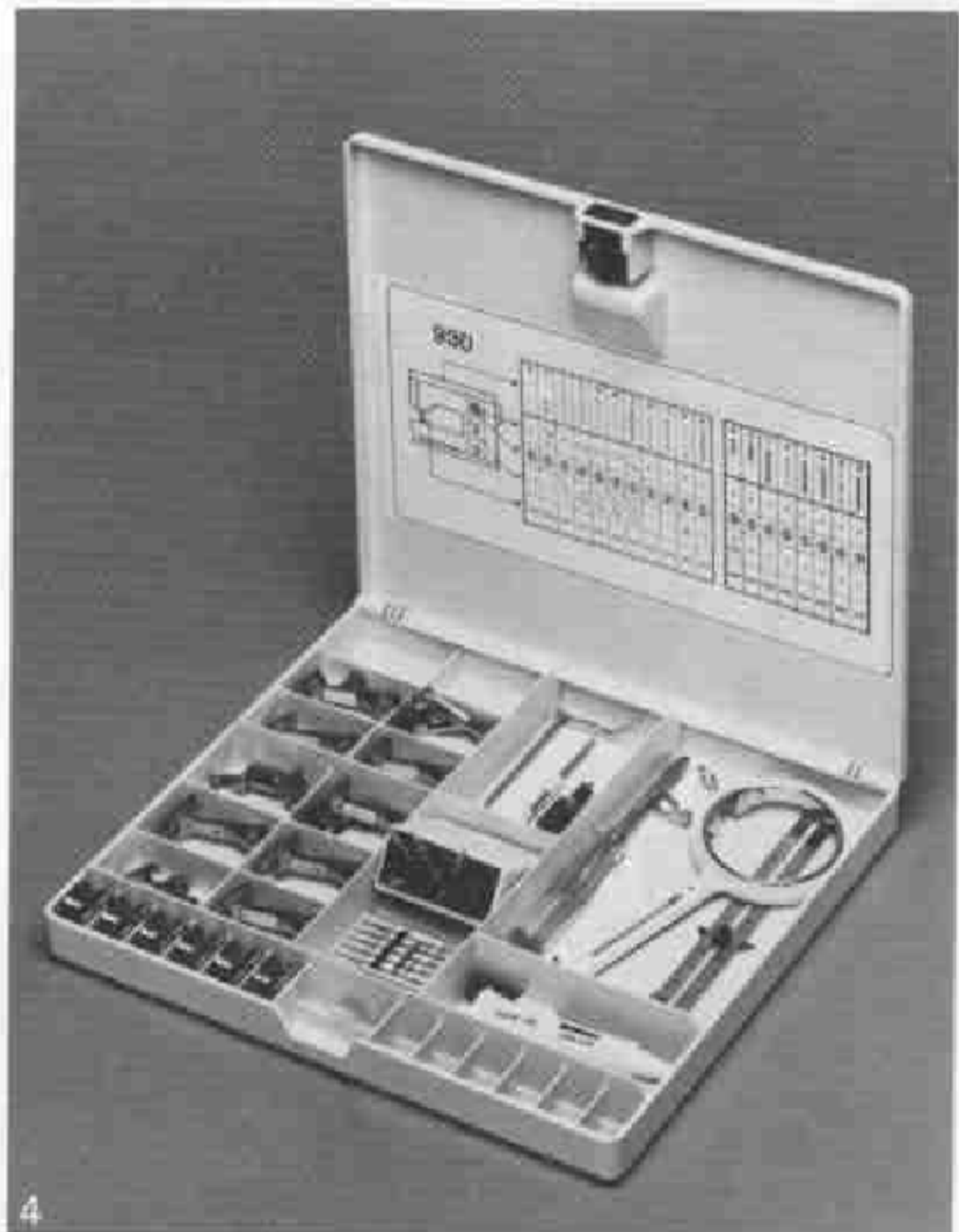
Removing sewing table

The table can be released from its holding device by pulling it hard to the left (away from the machine).



Accessories Box

The accessories are clearly accommodated in the flat accessories box. A summary of the most important basic settings of your sewing machine can be found inside the cover.



Presser Foot



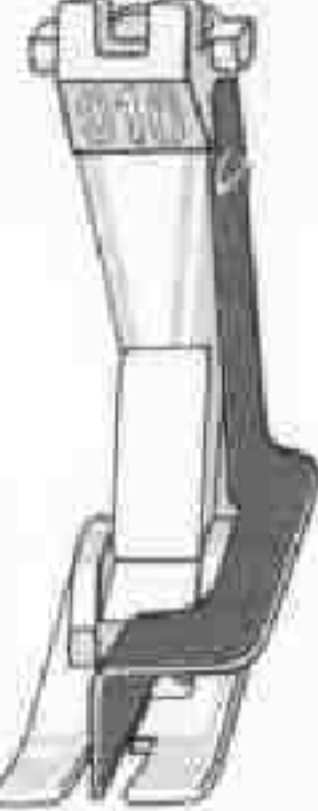
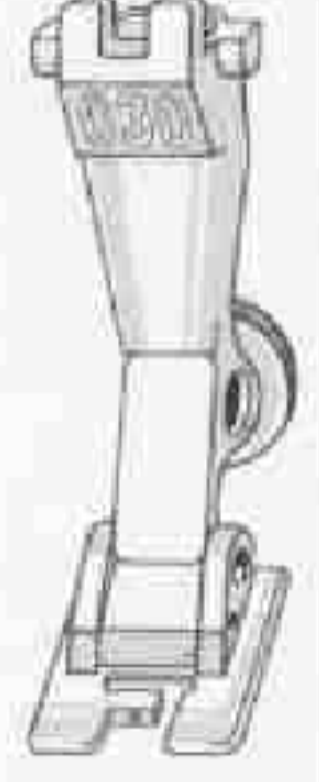
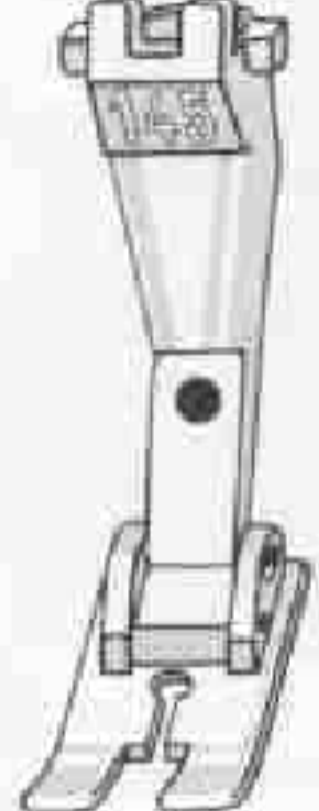

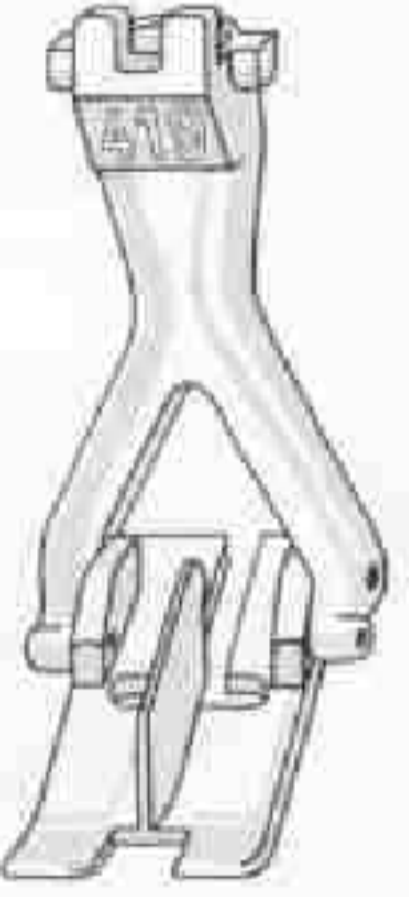

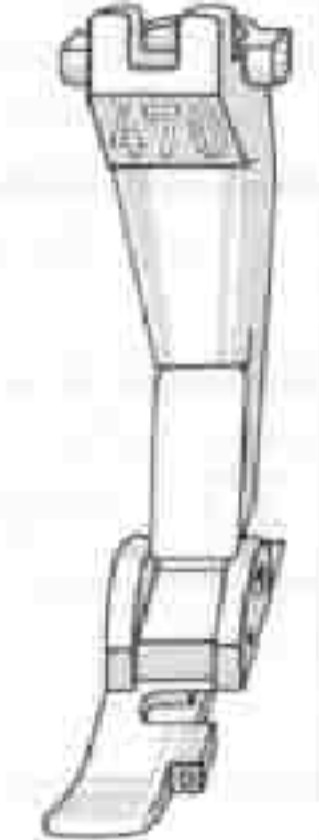
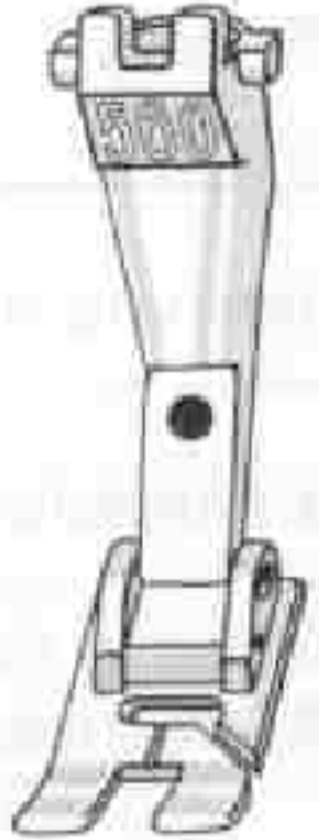
Presser feet are an important aid to sewing. They are provided with grooves and guides. The success or failure of a piece of sewing therefore also depends on the correct choice of presser foot.

The presser feet are not therefore only suitable for a specific operation. They are also used for simplifying any other work.

For example the buttonhole foot:
Buttonhole
 = main application
 Gathering
 = further application

Several presser feet look very similar at first glance. They are provided with numbers to avoid confusion.

The presser feet illustrated on this page are the standard accessories supplied to most countries. In other countries with varying sewing practices, the range of presser feet may be different. Additional presser feet can be obtained for more specialised sewing work. Ask your Bernina dealer for advice.

<p>000</p>  <p>presser foot for green stitches</p>	<p>007</p>  <p>zipper foot</p>	<p>016</p>  <p>blind stitch foot</p>	<p>030</p>  <p>Embroidery foot</p>	<p>145</p>  <p>blue spot</p> <p>Jeans foot</p>
<p>straight stitch zig-zag green practical stitches</p>	<p>sewing in zips sewing piping close along stitching line raised seam</p>	<p>blind hemming edge stitching</p>	<p>decorative stitches satin stitches appliqué, oversewing beading cord, couching on woollen thread</p>	<p>straight stitch sewing in thick, hard materials and over thick seams</p>
<p>285</p>  <p>Darning foot</p>	<p>419</p>  <p>Tailor tacking foot</p>	<p>452</p>  <p>Buttonhole foot</p>	<p>470</p>  <p>Overlock foot</p>	<p>560</p>  <p>red spot</p> <p>Presser foot for red stitches</p>
<p>Darning Monograms by free hand Free hand embroidery</p>	<p>Tailor tacking Fringes Embroidering terry cloth</p>	<p>Buttonholes Gathering</p>	<p>Vari-overlock seam Vari-overlock hem Overcasting seams</p>	<p>Red stitches</p>

Needle and Thread

Please note:
Your Bernina is provided with **Needle System 130/705H**

Make sure when purchasing new needles that you receive needles of the 130/705H system.

The needle size to be used depends on the thread selected, **the needle must match the thread.**

The adjoining table indicates which needle is suitable for which thread.

Needle sizes no. 70 to no. 120 are usual in the trade. The finer the needle, the lower the number. It is the opposite for the thread. The finer the thread, the higher the number.

The thread lies in the long groove of the needle during sewing. If the needle is too fine, there is no room for the thread in the groove. The result is faulty stitches.

Needle	70	80	90	100	110-120
Darning thread	*	*			
Embroidery thread No. 30		*			
Sewing thread Mercerised cotton		*	*		
Sewing thread synthetic		*	*		
Sewing thread coarse Mercerised cotton, synthetic			*	*	
Buttonhole thread for decorative seams (cordonnet)				*	*

Special Needles

Special needles make it easier to sew difficult materials.

Ball-point needles help to prevent damage to knitted fabric.

System 130/705 H-SES = fine round tip for fine knitted fabrics, particularly synthetics.

System 130/705 H-SUK = medium round tip for medium to coarse knitted fabric, particularly synthetics.

System 130/705 H-S = stretch (only Nm90!) specially for elastic synth. knitted fabrics.

Jeans needles penetrate easier through hard fabrics.

System 130/705 H-J = slender tipped form for jeans fabrics and other compact, hard fabrics.

Leather needles penetrate leather more easily.

System 130/705 H-LR = cutting tip for hard leather particularly.

Some Sewing Tips

Sewing is made much easier if the correct sitting position is adopted and the work is guided properly.

Some advice
Place your Bernina far enough in from the edge of the table, so that the attached presser foot lifter hangs just in front of the table edge. Sit right in front of the needle, i.e. in front of the work area, and not at the centre of the machine. This will enable you to watch the working area more closely without strain. Ensure that the height of your seat permits comfortable working. Sitting too low or too high makes the work more tiring.

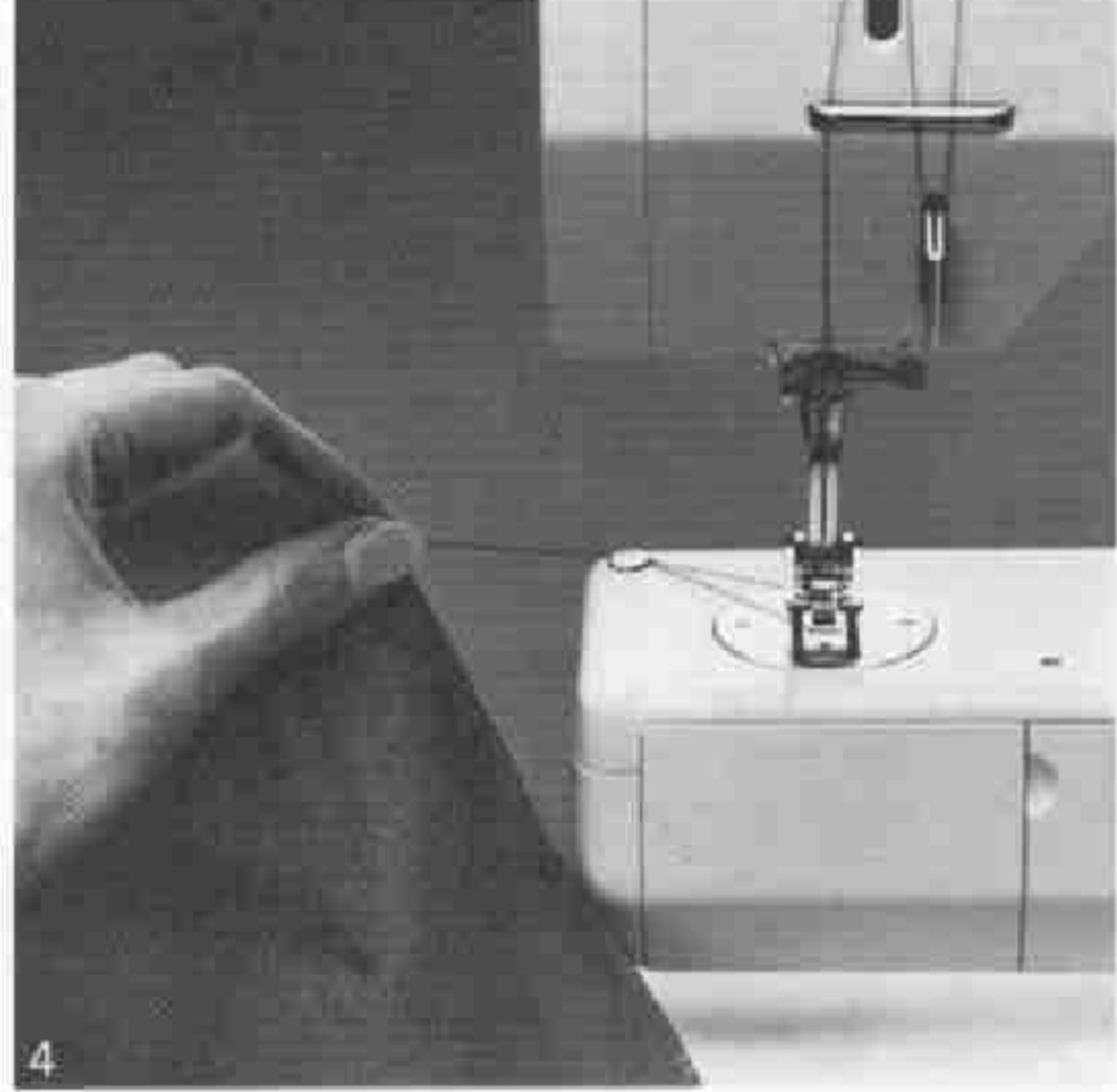
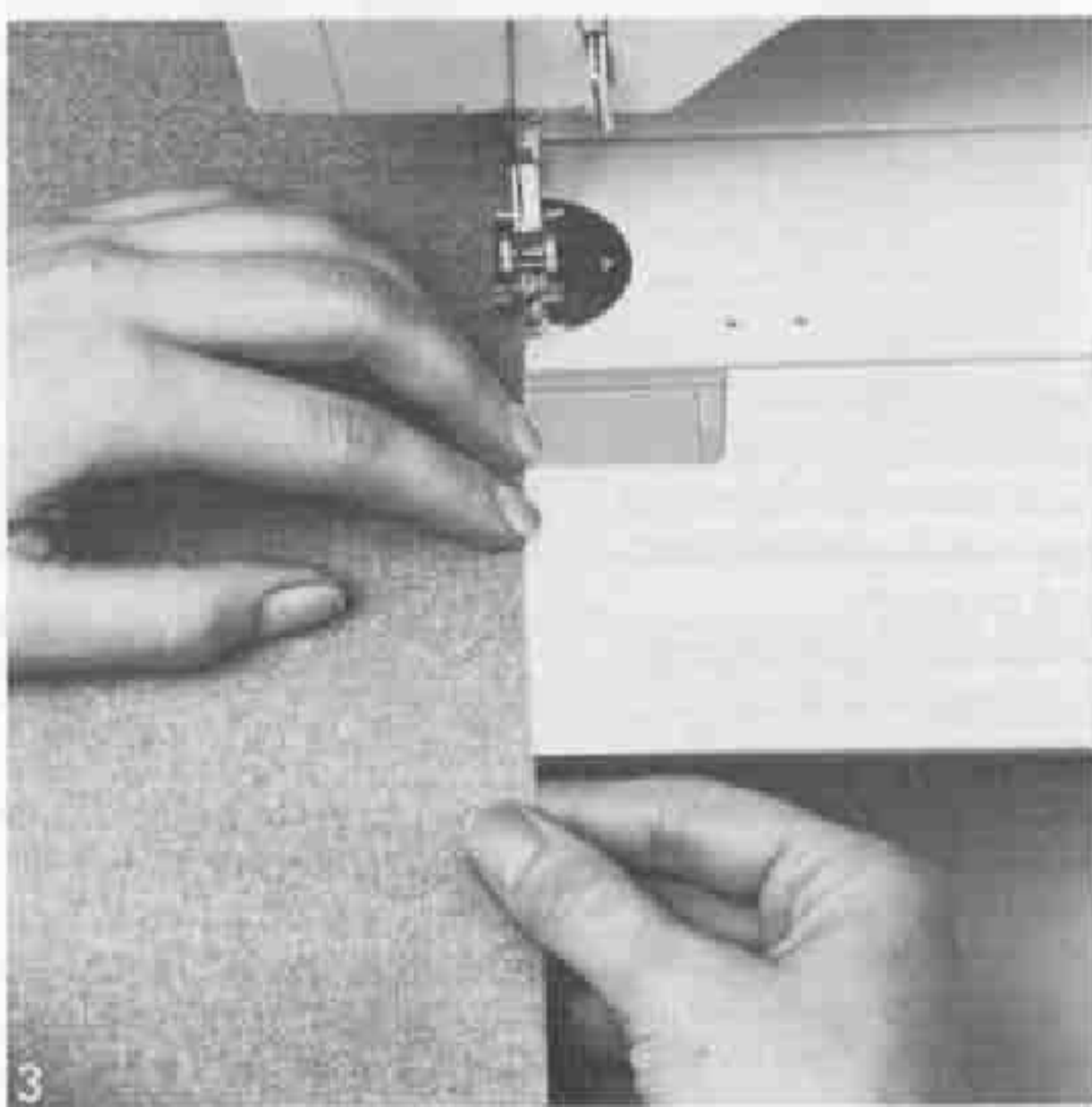
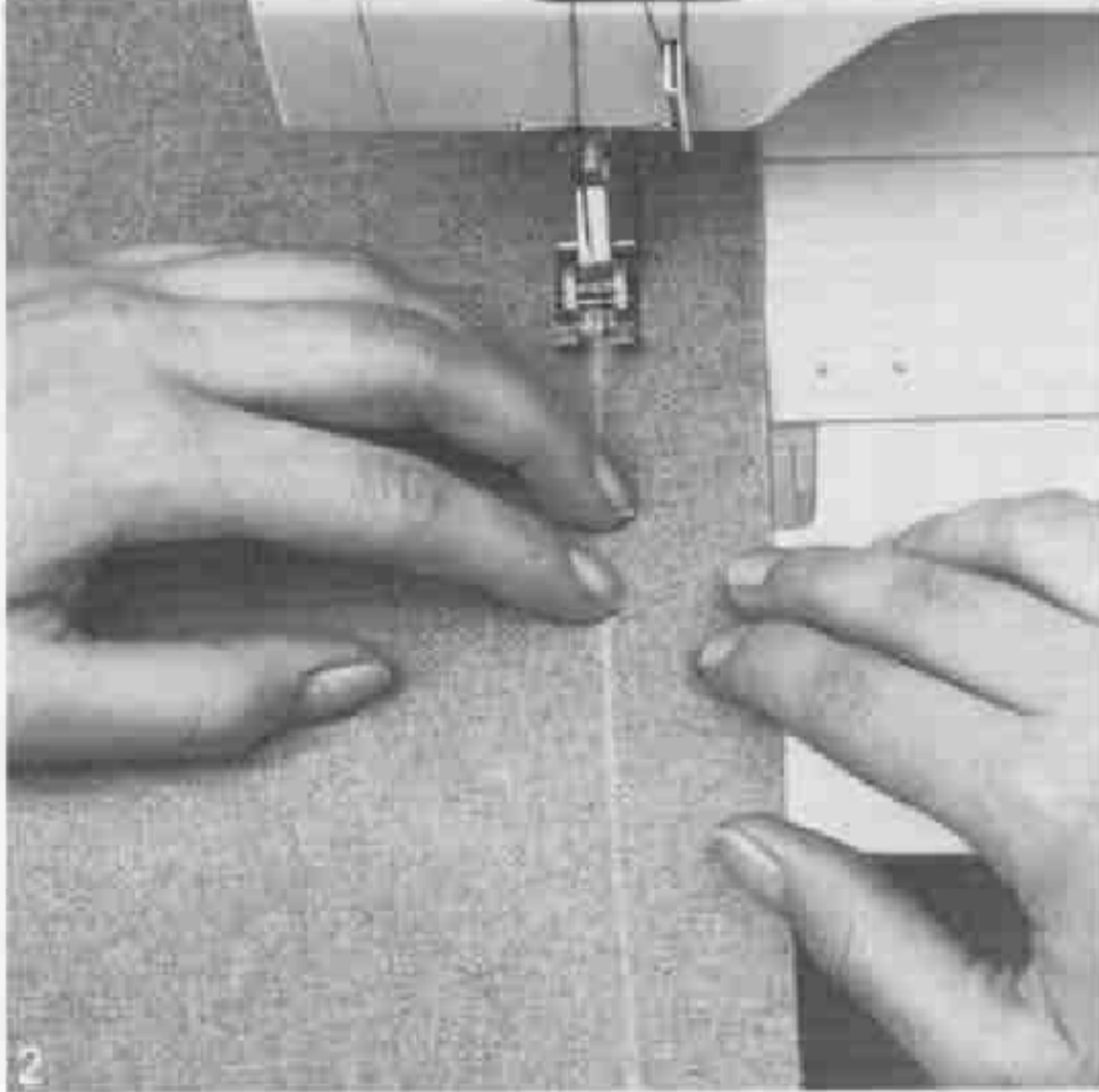
Guiding from the front is not satisfactory, since the material can be involuntarily held back (Fig. 1). Nor should the material be pulled from behind the presser foot.



It is best to guide the material from the side with the fingers of the left hand close to the presser foot (Fig. 2).

For difficult work, particularly with thin materials, it is preferable to stop and guide it a little at a time rather than let work slide beneath the hand.

Sewing of edges, overcasting, top stitching, edge finishing, sewing on lace, etc. are more successful if guided on the edge (Fig. 3).

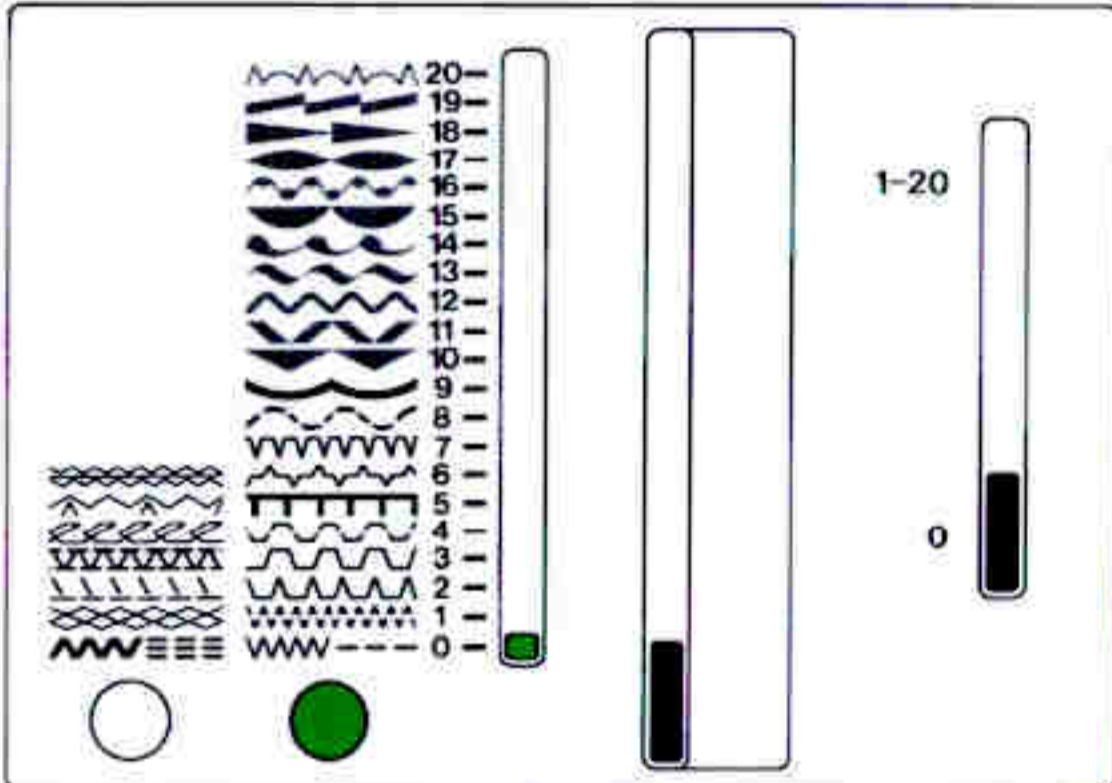


When removing the sewing raise the presser foot, remove the material to the rear left and pull both threads through the thread cutter. The threads are released automatically when sewing begins again.

Straight Stitch

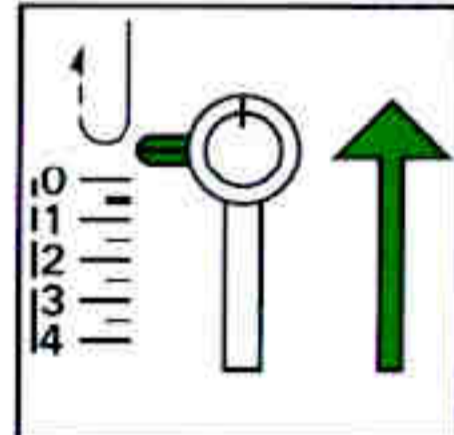
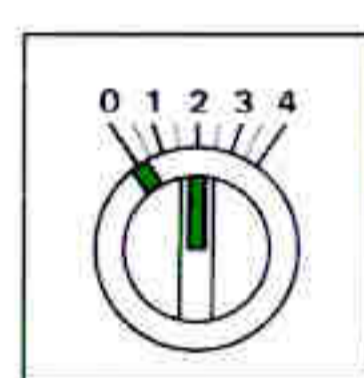
Green stitch 0

Presser foot: 000
 Thread: to suit material
 Needle: to suit the thread
 see Needle and thread table page 10

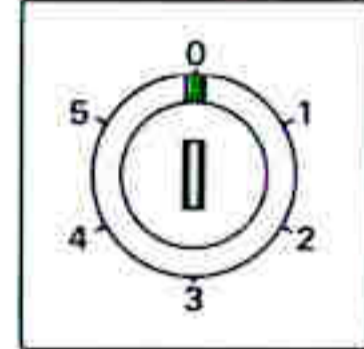


Stitch selection: selector lever 0
 changeover lever 0

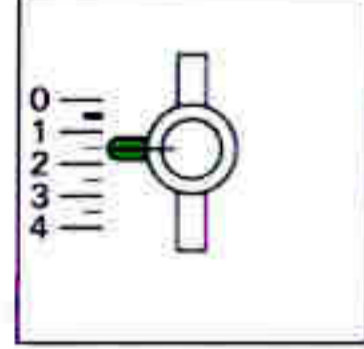
Stitch width: 0
 Needle position: centre



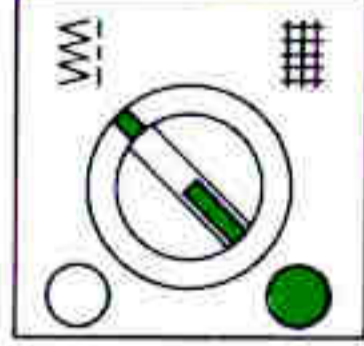
Buttonhole: 0



Stitch length: 1-4
 as required
 normal stitch length is 1 1/2-2



Feed-dog: sewing



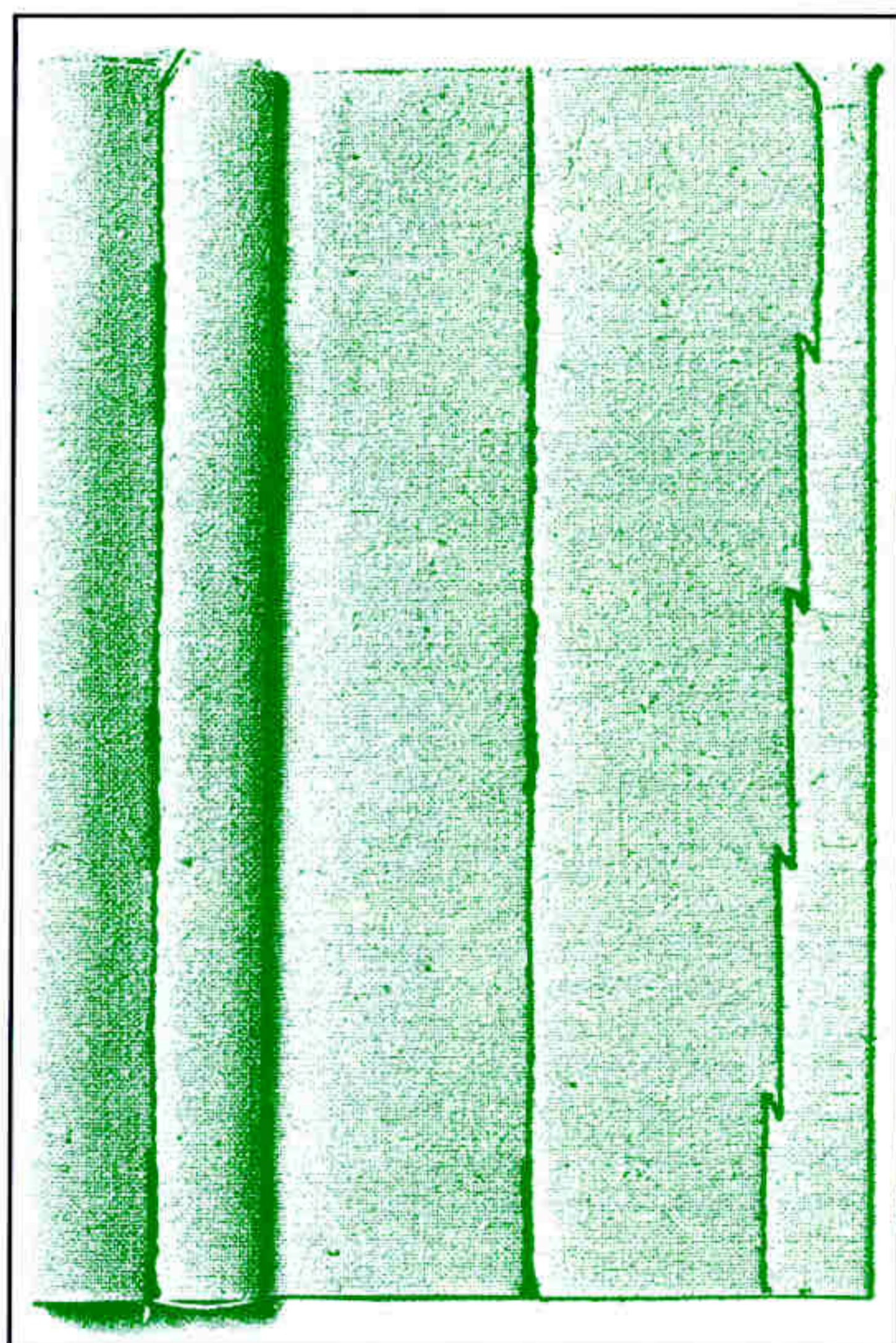
Colour mark: ●
 12

Forwards sewing
 With the settings specified, the machine sews forwards with the stitch length selected. The stitch length is selected according to the sewing work and material to be sewn.

Reverse sewing
 Move and hold stitch length knob upwards above 0 until reverse sewing is completed. When the knob is released, the machine sews forwards again with the previously selected stitch length.

Securing the ends
 Sew approx. 1 cm reverse and then forwards again at beginning and end of seam.

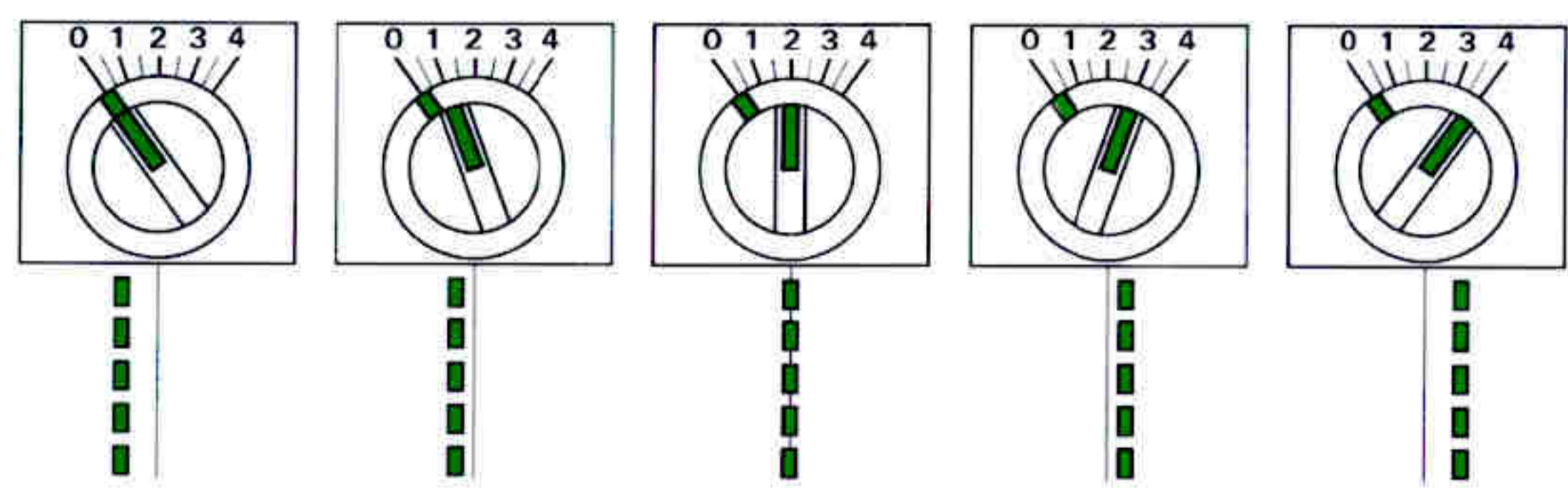
Securing thick seams
 Stop machine when changing over from forwards to reverse sewing and vice-versa! The needle stop device ensures that the needle is always raised when stopped. It cannot therefore be bent by thick materials.



Five needle positions
 The position of the stitch can be set at five positions right or left with the knob for setting the needle position.

The needle is at the centre for normal sewing

Application examples:
 Blind hem page 24
 Edge stitching page 25
 Sewing in zips page 22



Zig-zag

Green stitch 0

Setting zig-zag

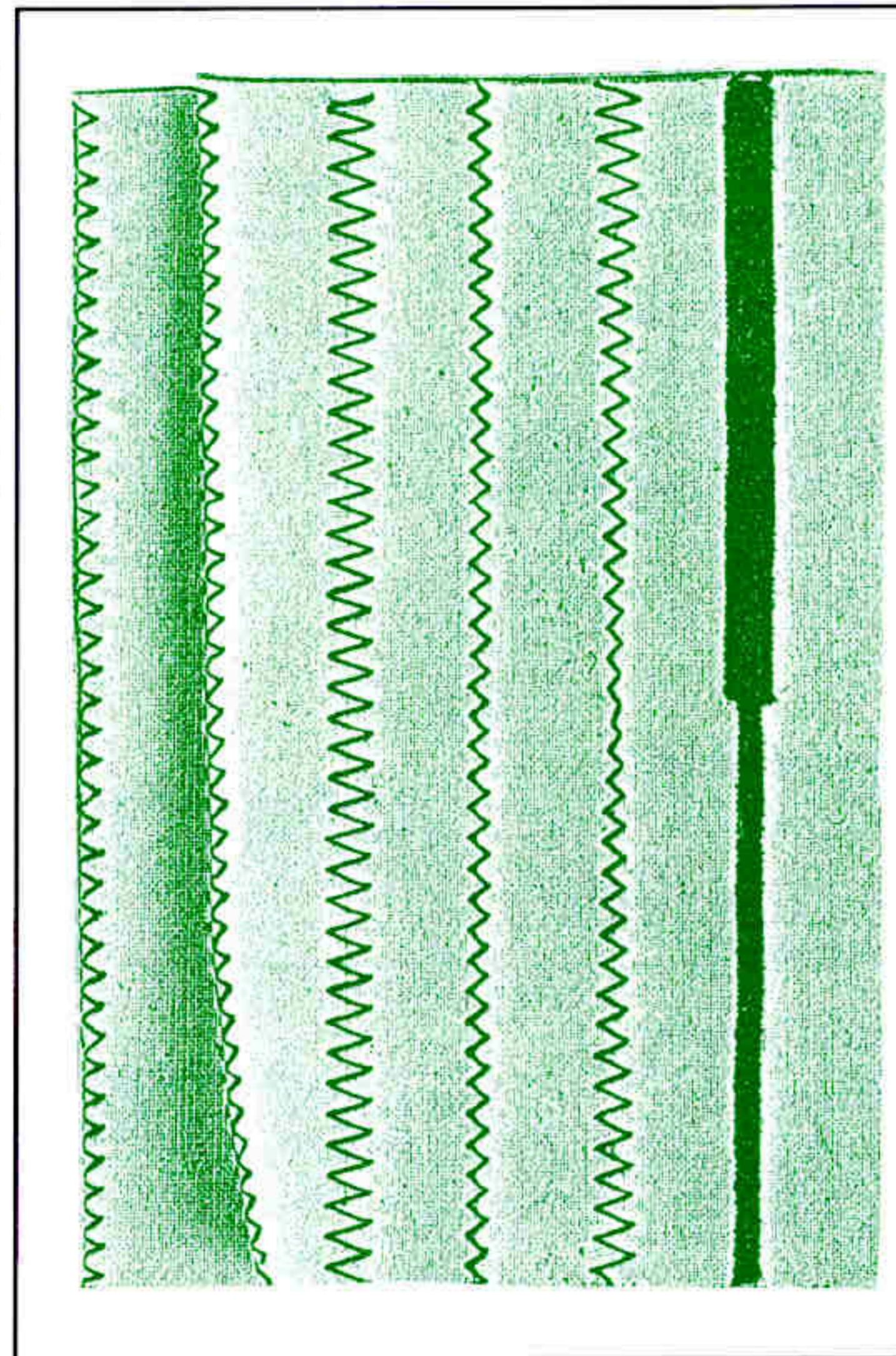
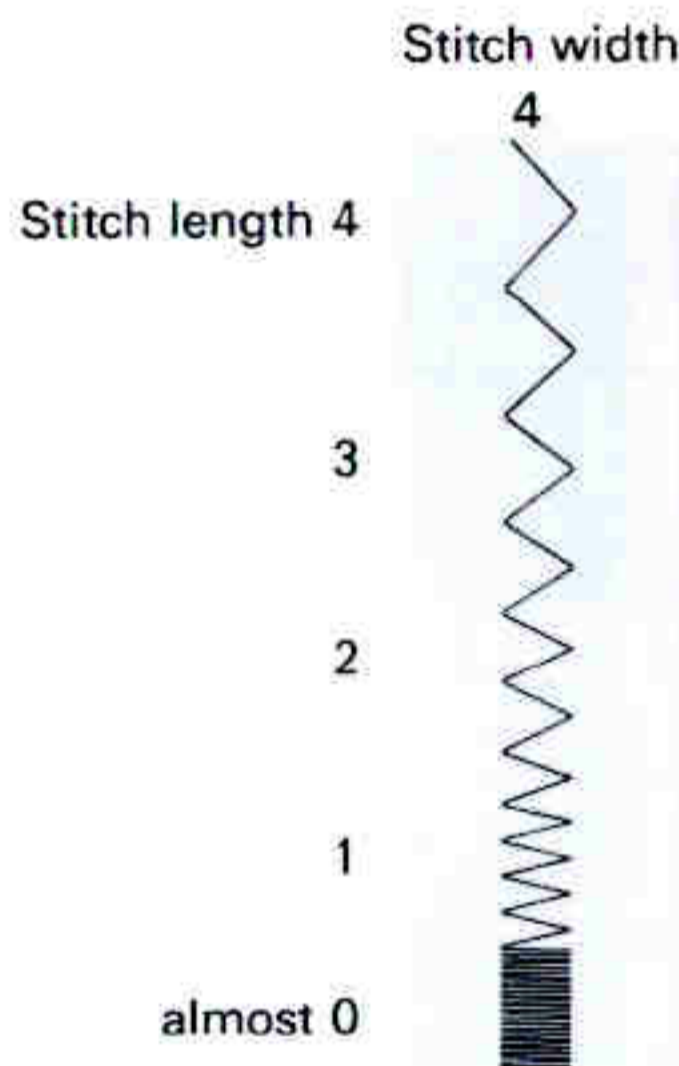
Presser foot:	000
Thread:	to suit material
Needle:	to suit thread
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	1-4
Stitch length:	1-4
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Zig-zag Setting the width :

The **width** of the zig-zag stitch is set with the stitch width knob. It can be set fully variably up to 4 mm.

The stitch width can be altered while sewing or with the machine stationary.

But the needle must not be in the material when the machine is stationary!



Overcasting edges

Presser foot:	000
Thread:	darning thread, possibly sewing thread
Needle:	80-70
Stitch width:	2½-4
Stitch length:	1-4

In general: zig-zag should not be too wide and stitch length not too long, cut edge neatly first. Use

darning thread if possible, particularly for fine material.

Guide edge of material in **centre** of presser foot, so that the needle penetrates alternately in the material and then outside (Fig. 1).

If sewn on the edge, also guide on the edge (Fig. 2).

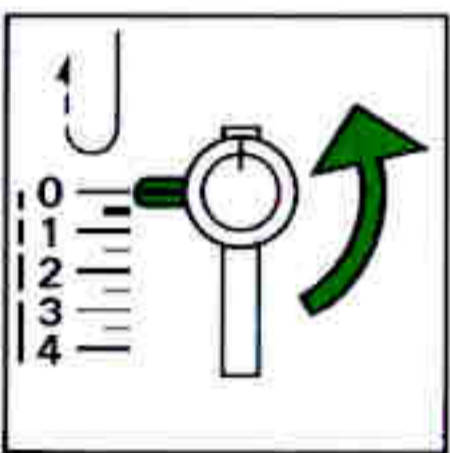
Satin stitch = close zig-zag

Presser foot:	030 embroidery foot
Thread:	embroidery thread 30
Needle:	80
Stitch width:	1½-4
Stitch length:	almost 0

Set stitch length for very close zig-zag:

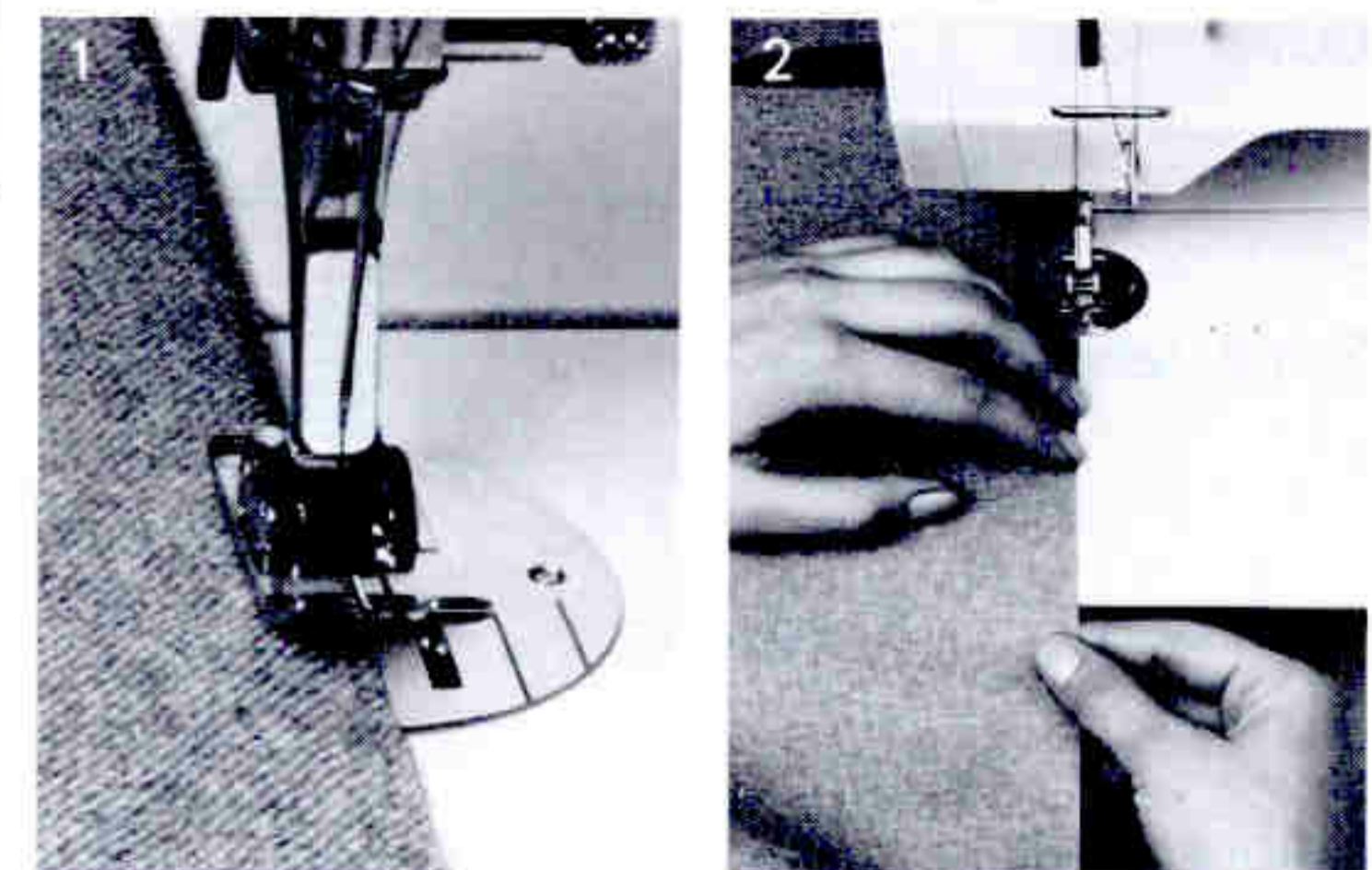
Turn stitch length knob to the right until it locks.

Mark on knob is on top. Stitch length is then 0.



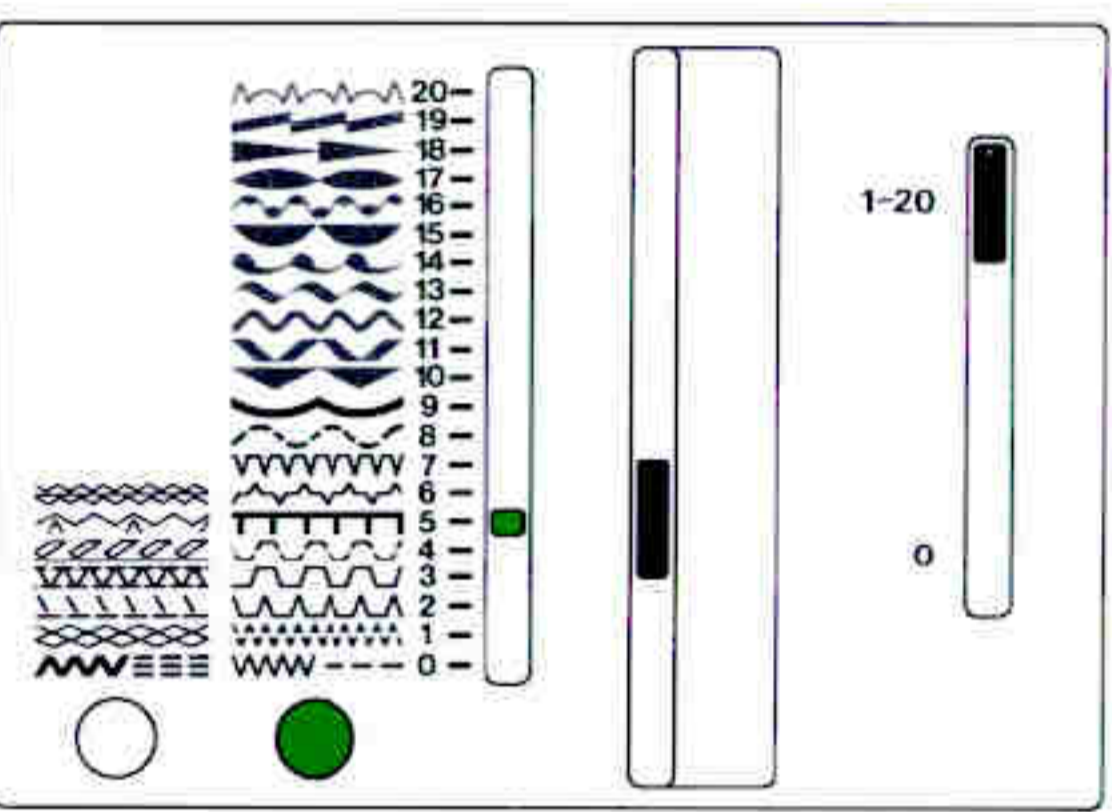
By turning half a revolution to the **left** – mark is underneath – the **basic setting** of stitch length is obtained.

Adjust stitch density from basic setting to suit material. Turn a little to the left for thicker material, a little to the right for finer material. Sew a sample.



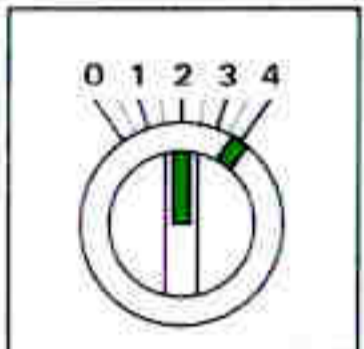
Selecting the Green Stitches Stitches 1 ... 20

Presser foot: 000
 Thread: to suit the material
 Needle: to suit the thread

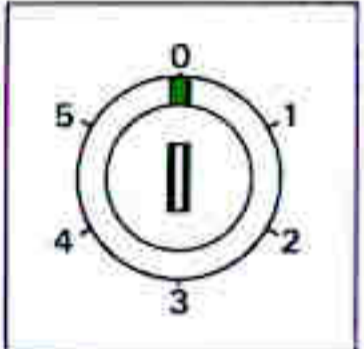


Stitch selection: selector lever 1 ... 20
 changeover lever 1 - 20

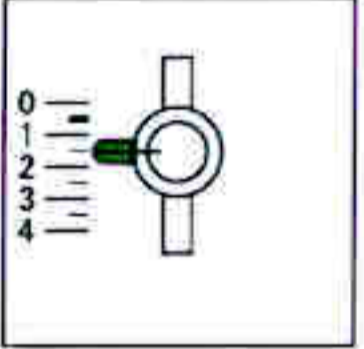
Stitch width: 1-4
 Needle position: centre



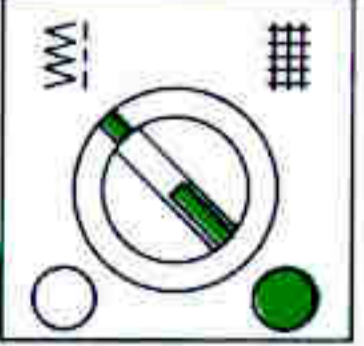
Buttonhole: 0



Stitch length: 1-4



Feed-dog: sewing



Colour mark: ●
 14

- Press selector lever to right to disengage and set to desired stitch 1 ... 20.
- Set changeover lever to 1-20.
- Set knob for colour mark to green.

See page 17 for application examples of green stitches 1 ... 20.

Universal stitch 3

Stitch selection:	selector lever	3
	changeover lever	1-20
Stitch width:	4	
Stitch length:	2	

Scallop stitch 9

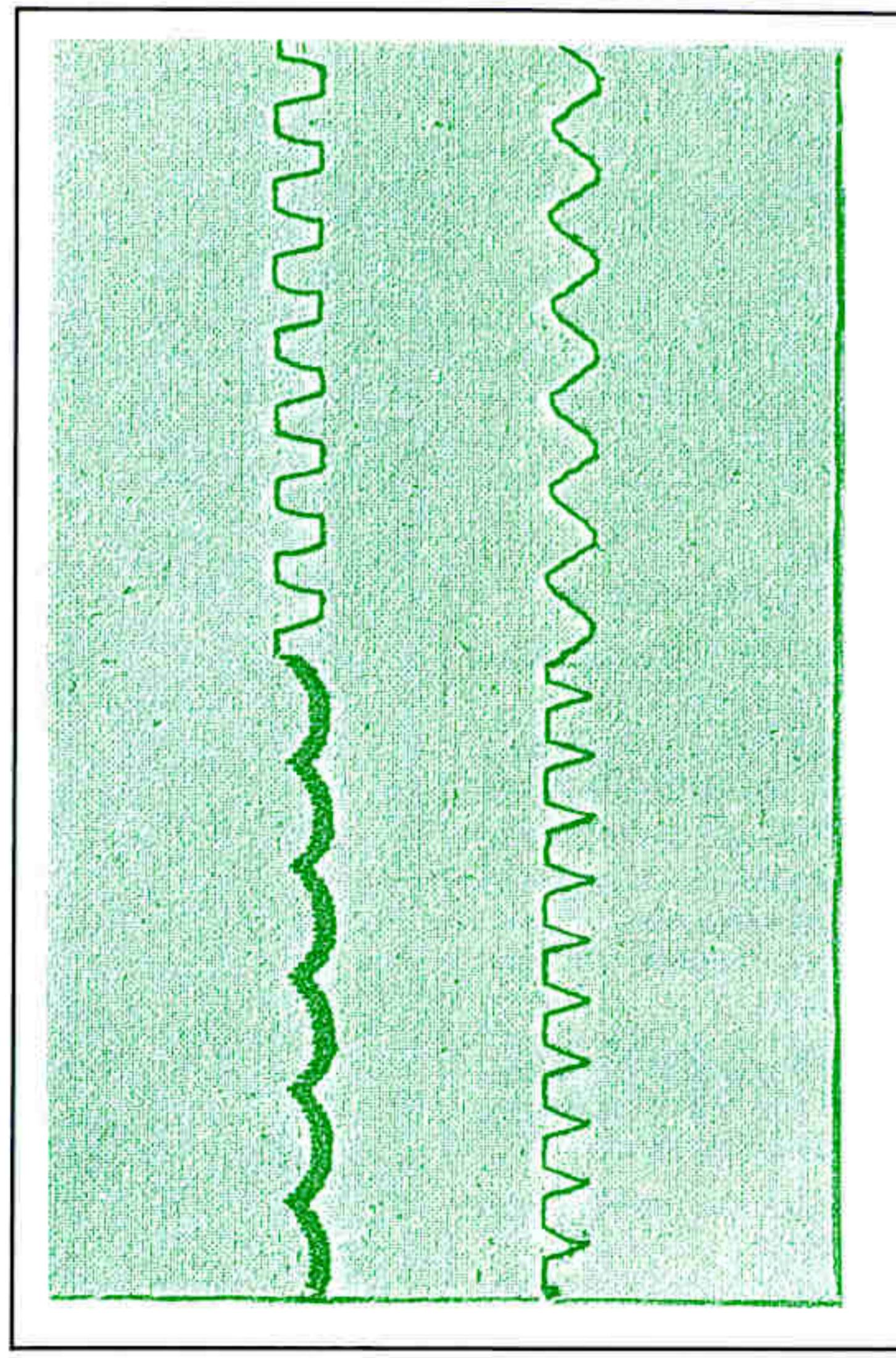
Stitch selection:	selector lever	9
	changeover lever	1-20
Stitch width:	4	
Stitch length:	1/4	

Running stitch 8

Stitch selection:	selector lever	8
	changeover lever	1-20
Stitch width:	4	
Stitch length:	1 1/2	

Vari-overlock 7

Stitch selection:	selector lever	7
	changeover lever	1-20
Stitch width:	4	
Stitch length:	1-1 1/2	
Needle position:	right	

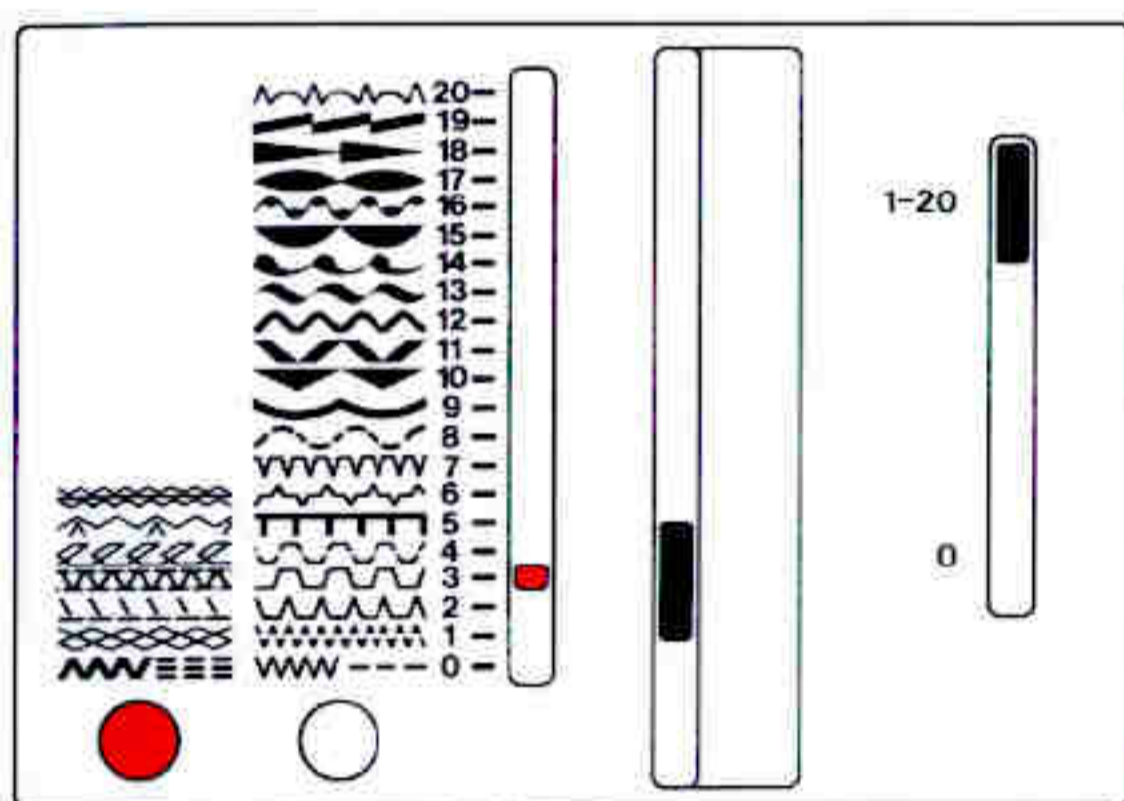


Selecting the Red Stitches

Stitches 1 ... 6

Stitches 0

Presser foot: 560
 Thread: to suit the material
 Needle: to suit the thread



Stitches 0

Stitch width 0 produces the triple straightstitch.

Stitch width 1–4 produces the triple zig-zag stitch.

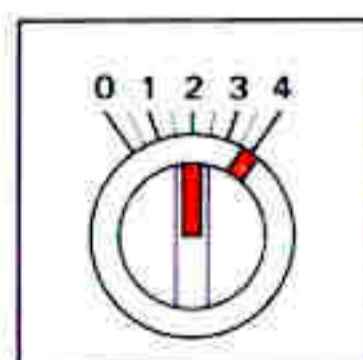
See page 16 for application examples.

Stitch selection: selector lever
 changeover lever

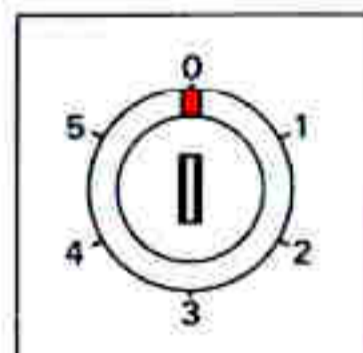
Stitches 1 ... 6	Stitches 0
1 ... 6	0
1 – 20	0

Stitch width: 4

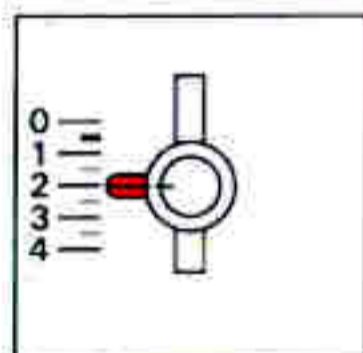
Needle position: centre



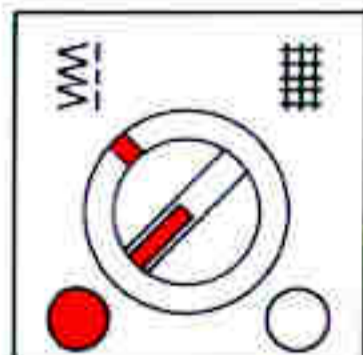
Buttonhole 0



Stitch length: 2–3



Feed-dog: sewing



Colour mark: ●

Triple straight stitch 0

Stitch selection:	selector lever	0
	changeover lever	0
Stitch width:		0
Stitch length:		2–4

Triple zig-zag 0

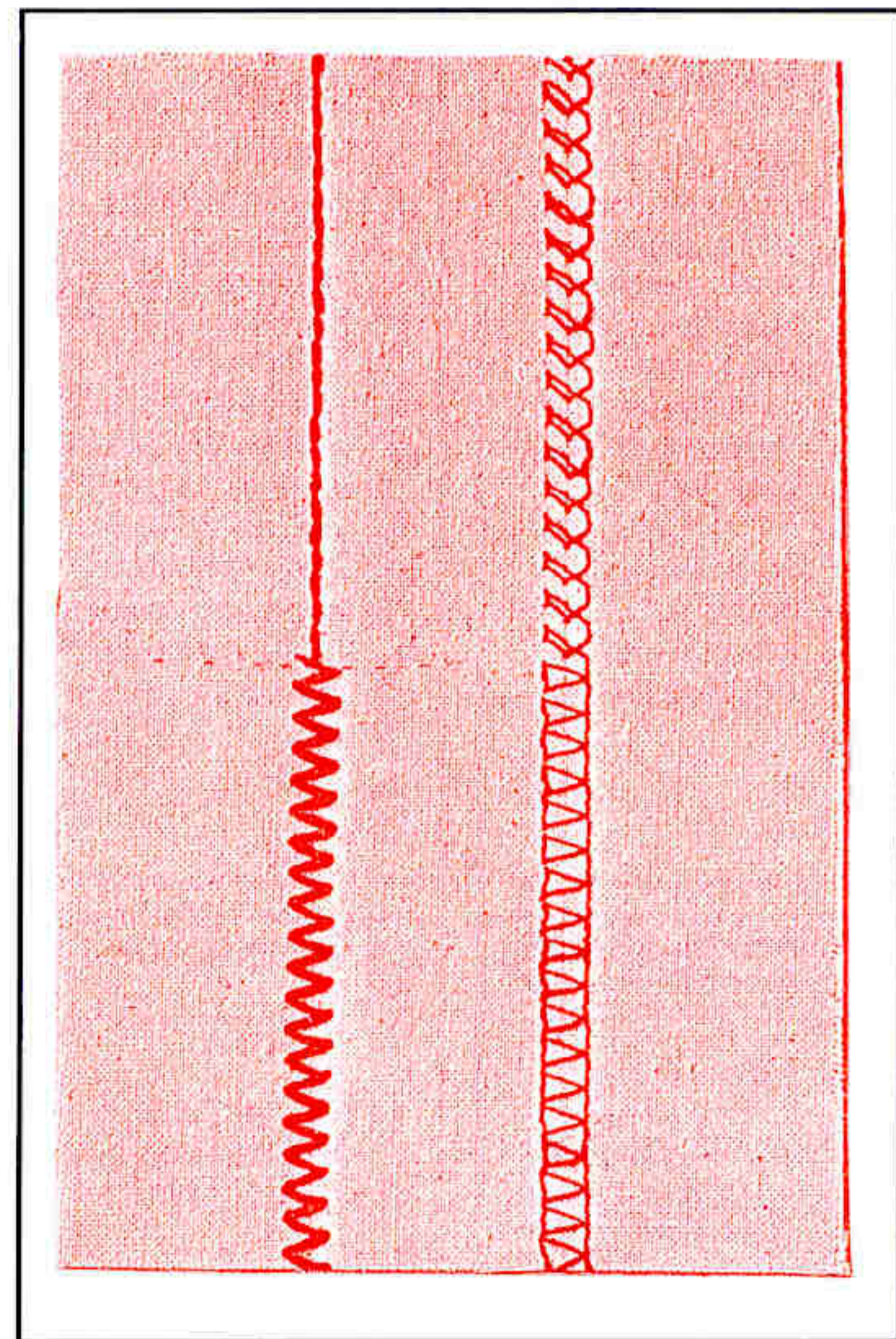
Stitch selection:	selector lever	0
	changeover lever	0
Stitch width:		4
Stitch length:		2–4

Jersey stitch 4

Stitch selection:	selector lever	4
	changeover lever	1–20
Stitch width:		4
Stitch length:		2

Double overlock 3

Stitch selection:	selector lever	3
	changeover lever	1–20
Stitch width:		4
Stitch length:		2



Applications of Red Stitches

0 Triple straightstitch



For:
corduroy materials, jeans materials, outerwear materials, deckchair covers, carpet borders, rucksacks, sleeping bags, etc.

hard-wearing seams for joining fabric pieces or stitching seams

0 Triple zig-zag



For:
jeans materials, corduroy, leather, decorative fabrics, light curtains, etc.

decorative seams and hems, sewing on tape, repairs etc. for sportswear, woollen blankets, sleeping bags, rucksacks, deckchair covers, etc.

1 Honeycomb stitch



For:
many types of jersey and generally smooth fabrics

Visible seams and hems on T-shirts, sweaters, underwear, serviettes, tablecloths, craft work, etc.


2 Towelling stitch



Primarily for towelling materials, jeans fabrics, leather and other heavier materials

Flat joining seam, visible hem for beachwear, craft work

3 Double overlock



For:
knitted materials of all kinds and hand and machine-knitted items

Overlock seam = sewing and overcasting in one operation (hand and machine knitted goods)


4 Jersey stitch



For:
Cotton Jersey, blended and synthetic fibres

Decorative seams and hems, particularly in underwear and cotton sweaters, mending jersey, sewing on elastics, etc.


5 Edge stitch



For:
various kinds of material

Visible hems, sewing on lace and tapes of all kinds, decorative edging, craft work

6 Combi zig-zag










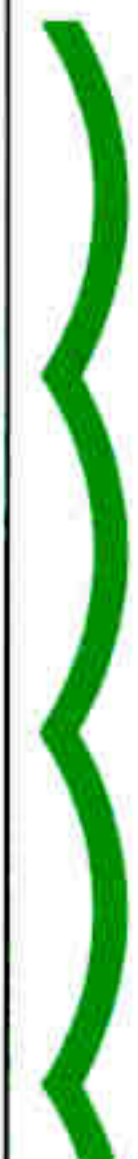


For:
knitted materials and textiles

Visible hems, covering seams, etc.

Applications of Green Stitches

Decorative stitches

<p>1 Sewn-out zig-zag</p>  <p>For most types of material</p> <ul style="list-style-type: none"> Overcasting loosely woven fabrics Reinforcing and repairing edges Decorative seams 	<p>2 Blind stitch</p>  <p>For most types of material</p> <ul style="list-style-type: none"> Blind hemstitch, shell edging on soft jerseys and fine materials Decorative seams 	<p>3 Universal stitch</p>  <p>For firmer knitted materials and fabrics, felt, leather, etc.</p> <ul style="list-style-type: none"> Flat joining seam, visible hems, patchwork, mending jersey, sewing on elastics Decorative seams 	<p>4 Lycra stitch</p>  <p>Specially for lycra material</p> <ul style="list-style-type: none"> Flat joining seams and hems Finishing of seams in foundation garments 	<p>5 Stretch stitch</p>  <p>For highly-elastic materials</p> <ul style="list-style-type: none"> Highly-elastic, open seam for ski, riding-, climbing, hiking- and activity wear 	<p>10–20 Decorative stitches</p> 
<p>6 Gathering stitch</p>  <p>For most types of material</p> <ul style="list-style-type: none"> Gathering with cord, joining seam = cut edges pressed over and pushed together 	<p>7 Vari-overlock</p>  <p>Particularly for fine synthetic and silk jerseys, helanca and cotton and woollen jerseys</p> <ul style="list-style-type: none"> Highly-elastic overlock seam and highly-elastic hem, particularly for sports underwear, pyjamas, T-shirts, sweaters, track-suits, etc. 	<p>8 Running stitch</p>  <p>For most types of material</p> <ul style="list-style-type: none"> Darning with running stitch, mending material, reinforcing edges, etc. 	<p>9 Scallop stitch</p>  <p>Particularly for woven fabrics</p> <ul style="list-style-type: none"> Edgings for tablecloths, serviettes, collars, cuffs, etc. 		

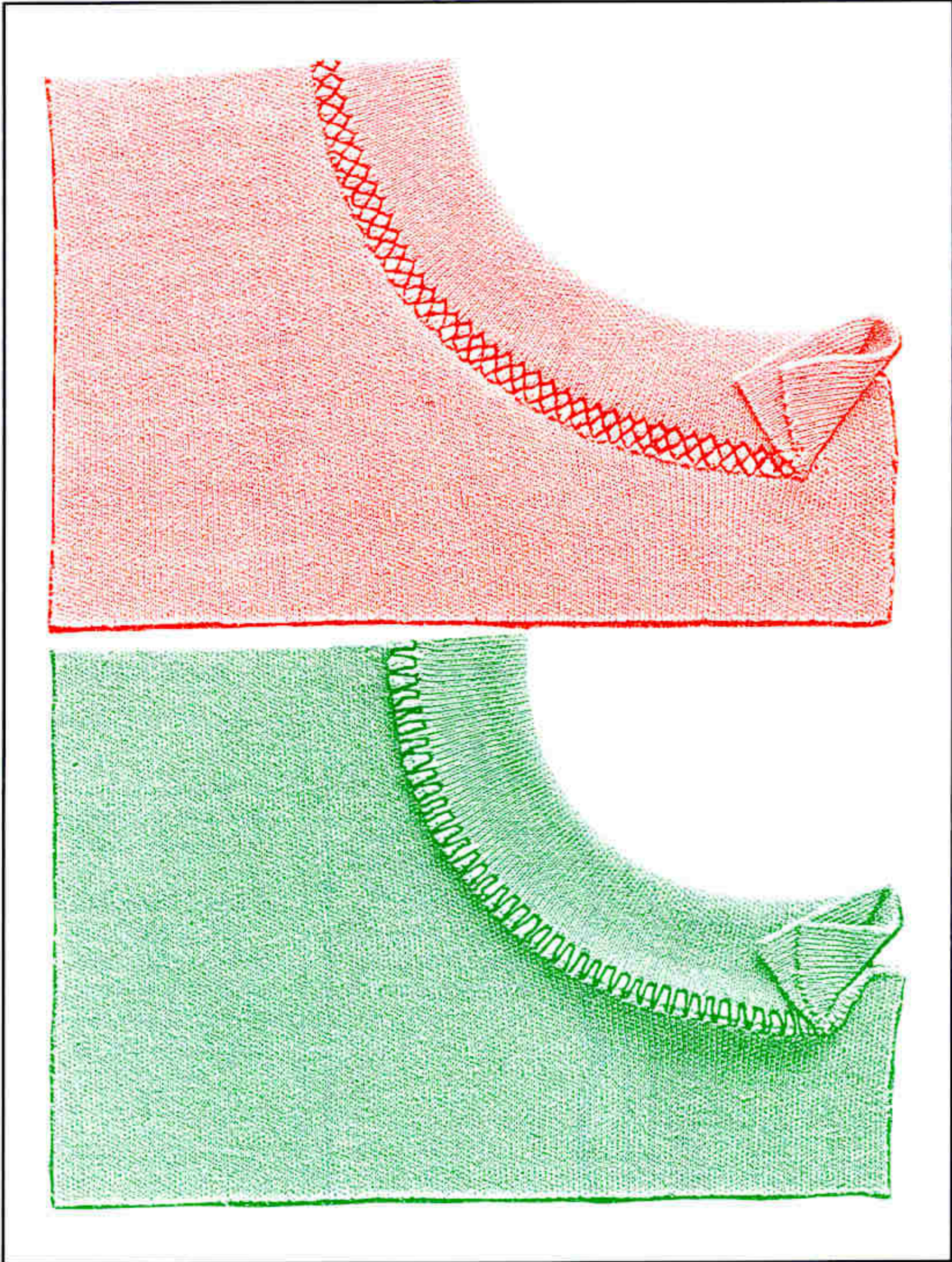
Sewing Knitted Fabrics

e.g. jersey

The following generally applies when sewing knitted materials:

1. Use a perfect needle! Even a slightly blunt needle damages the knit and holes appear after a short time.
2. Use fine sewing thread, particularly for the fine jerseys. Coarse thread can also damage the knit.
3. Use darning thread for basting. Darning thread, when sewn over, can be more easily removed than the much thicker and shorter-fibre basting thread.
4. Press seams immediately after sewing. This simplifies subsequent work considerably.
5. Sew a sample to test the stretchiness of the stitch. The chosen stitch should be as elastic as the material since the elasticity of modern textiles varies considerably, the basic settings of the practical stitches can be altered if necessary.

For highly-elastic materials try making the stitch length slightly shorter and stitch width slightly wider. This provides the seam with more thread and it is made more elastic.



Rib-trim with decorative seam

Particularly for cotton jersey. (Pyjamas, T-shirts, sports underwear, lingerie)

Presser foot:	560
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 1 changeover lever 1-20
Stitch width:	4
Stitch length:	2
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Press cut strip in half lengthways. **Pin** or baste on **right side** of neckline (basting device, stitch length approx. 1).

Then sew on with honey-comb stitch. Guide work so that needle stitches exactly to the edge of trim. Cut off surplus material on back.

Rib-trim with overlock seam

For all kinds of jersey.

Presser foot:	470
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 7 changeover lever 1-20
Stitch width:	4
Stitch length:	1 approx.
Needle position:	right
Feed-dog:	sewing
Colour mark:	●

Press cut strip in half lengthwise. **Pin** to neckline on **right side**, cut edges of trim level with

edge of neckline. Guide cut edge along pin of overlock foot when sewing.

Hems with Practical Stitches

In general:

baste hem – mark desired width – sew – trim off surplus material. The «Hints for working with knitted materials» page 18 apply to all types of jersey

Visible hem with jersey stitch

Presser foot:	560
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 4 changeover lever 1–20
Stitch width:	4
Stitch length:	2
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Visible hem with vari-overlock

Presser foot:	470
Thread:	sewing thread
Needle:	80–70
Stitch selection:	selector lever 7 changeover lever 1–20
Stitch width:	4
Stitch length:	1 approx.
Needle position:	right
Feed-dog:	sewing
Colour mark:	●

Visible hem with triple zig-zag

Presser foot:	560
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	4
Stitch length:	2
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Visible hem with jersey stitch

Elastic visible hem for cotton jersey, fine wool, synthetics and blended fibres.

Pyjamas, T-shirts, lingerie, sports underwear.

Pin or baste hem with basting device. Cut edge can also be sewn directly over the edge.

Visible hem with vari-overlock

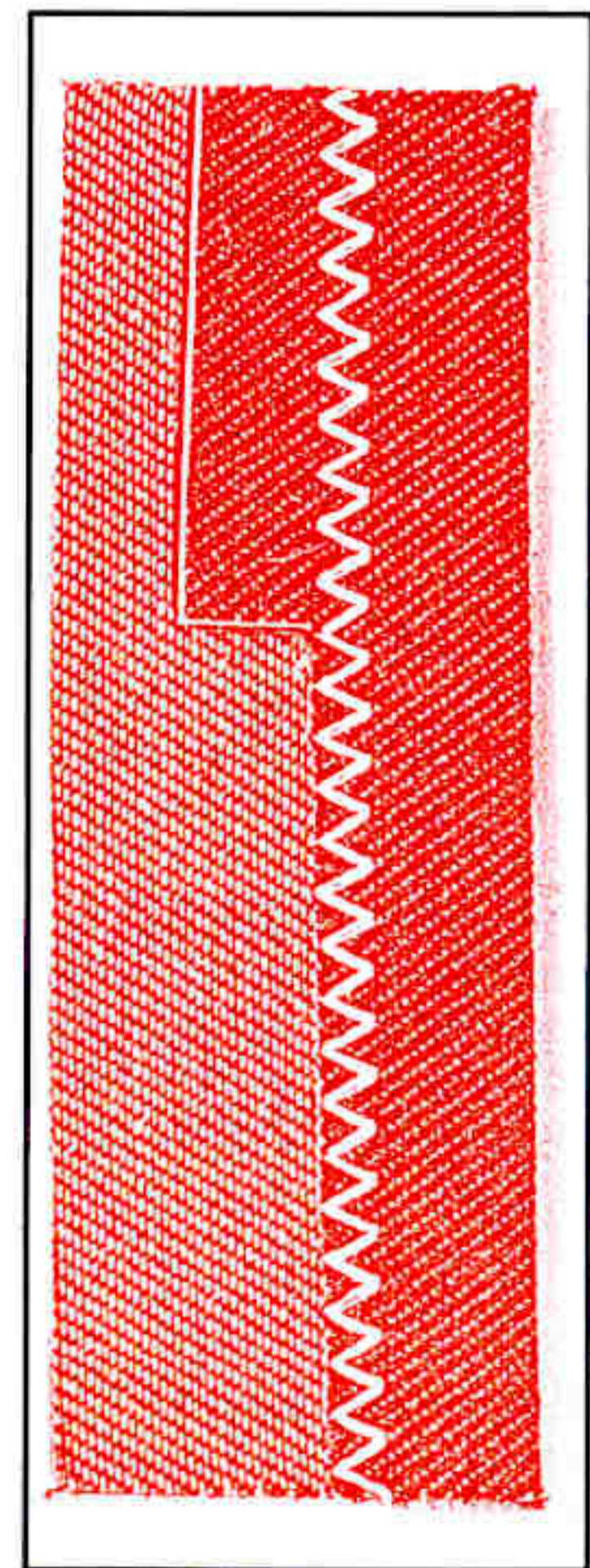
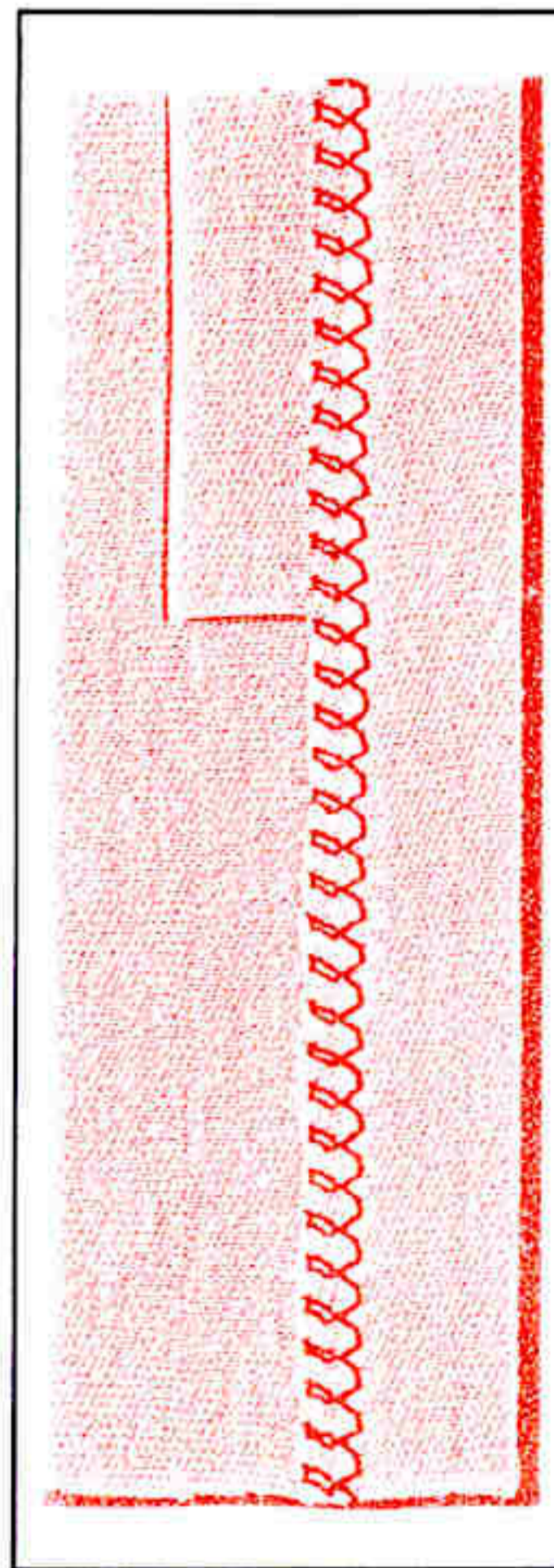
Highly-elastic visible hem for all highly-elastic jerseys: terry cloth stretch / helanca / very soft cotton and woollen jerseys.

Pin or baste hem with basting device. Sew hem approx. 1 cm from raw edge. Cut off surplus material.

Visible hem with triple zig-zag

Hard wearing visible hem for firm fabrics, jeans, etc.

Pin or baste hem with basting device. Sew hem approx. 1 cm from raw edge. Cut off surplus material.



Seams with Practical Stitches

The choice of type of seam depends entirely on the article. The choice of practical stitch on the material used. We distinguish between three types of seam:

- they lie flat
- they are narrow and cannot be let out
- they do not roll up, edges are neat

Range of application: beachwear, leisure-wear, foundation garments, home-dressmaking articles.

Triple straightstitch seam
Hard-wearing seam for firm fabrics.

Zig-zag seam
Seam for normal elastic jersey in wool, synthetics or blended fibres, as well as for silk-, cotton- and woollen jersey.

Stretch seam
Highly-elastic seam for stretch materials, particularly for all kinds of sports-wear.

Open seams:
are seams which are pressed open
- they lie flat and do not roll
- they allow the garment to be let out
Range of application: dresses, pants, skirts, jackets, coats, etc.

Triple straightstitch seam open seam

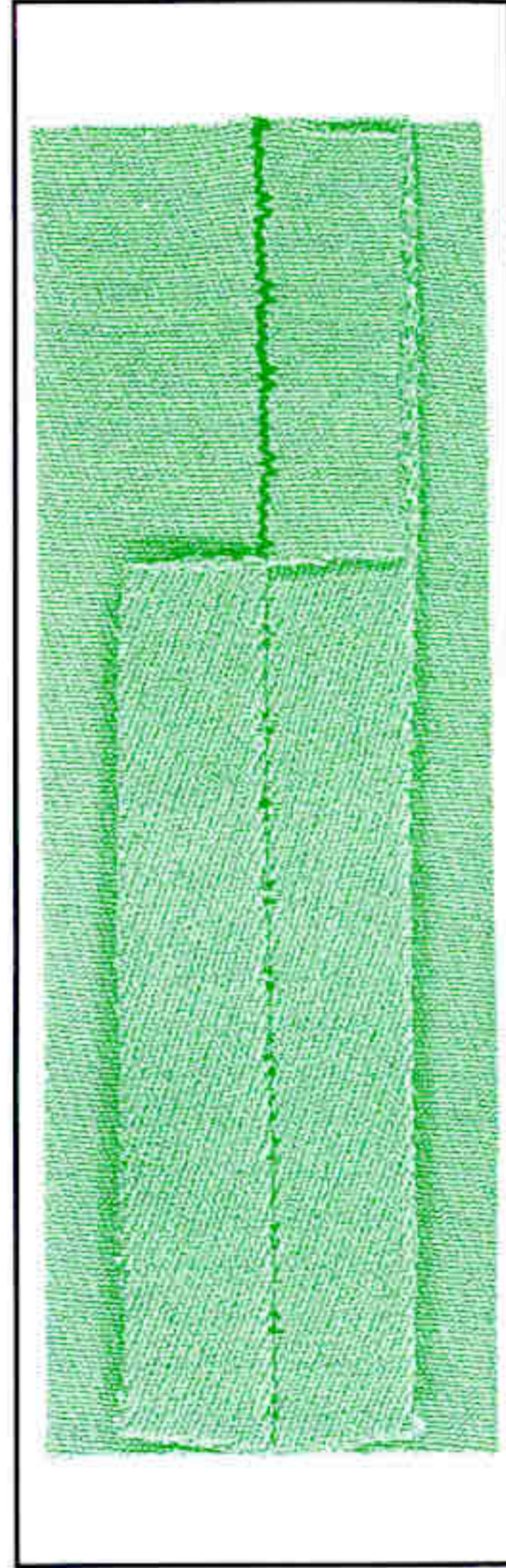
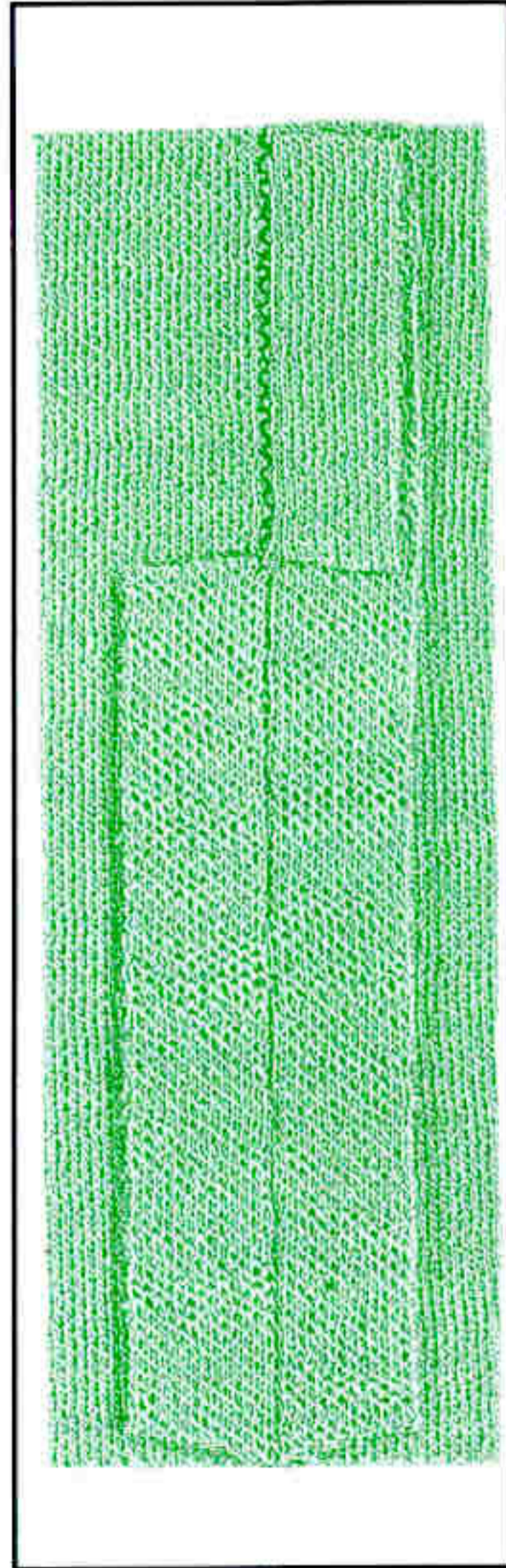
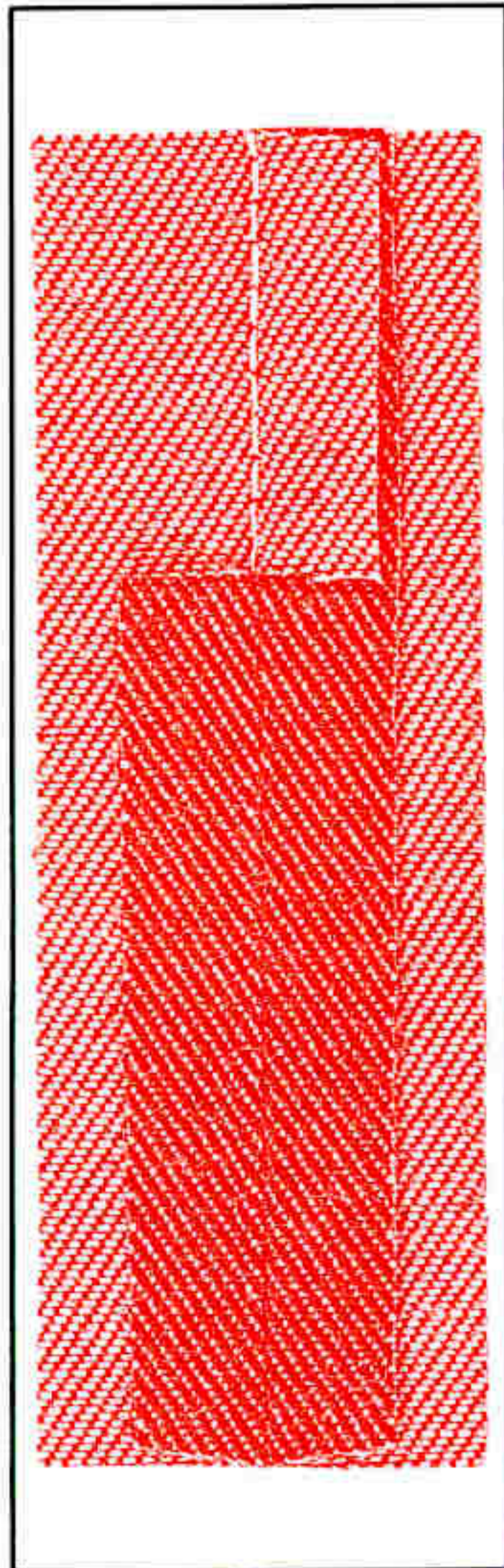
Presser foot:	560
Thread:	sewing thread
Needle:	80-90
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	0
Stitch length:	2-3
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Zig-zag seam open seam

Presser foot:	000
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	1
Stitch length:	1-1 1/2
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Stretch seam open seam

Presser foot:	000
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 5 changeover lever 1-20
Stitch width:	1-1 1/2
Stitch length:	1/2-1
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●



Overlock seams:
are seams which are sewn and overcast in one operation
- they are quickly made
- they are narrow, but do not allow the garment to be let out
Range of application: particularly knitted fabrics for sweaters, jackets, jersey blouses, linen, hand and machine-knitted garments.

Flat joining seams:
are seams where the cut edges are lapped and then sewn over

Seams with Practical Stitches

Vari-overlock seam

Presser foot:	470
Thread:	sewing thread
Needle:	80-70
Stitch selection:	selector lever 7 changeover lever 1-20
Stitch width:	4
Stitch length:	approx. 1
Needle position:	right
Feed-dog:	sewing
Colour mark:	●

Double-overlock stitch seam

Presser foot:	560
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 3 changeover lever 1-20
Stitch width:	4
Stitch length:	2-3
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Flat joining seam

Presser foot:	560
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 2 changeover lever 1-20
Stitch width:	4
Stitch length:	2
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Flat joining seam

Presser foot:	000
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 4 changeover lever 1-20
Stitch width:	4
Stitch length:	¾-1
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Vari-overlock seam

Highly-elastic overlock seam for all **fine** jersey dresses, blouses, linen, sports underwear.

Double overlock stitch seam

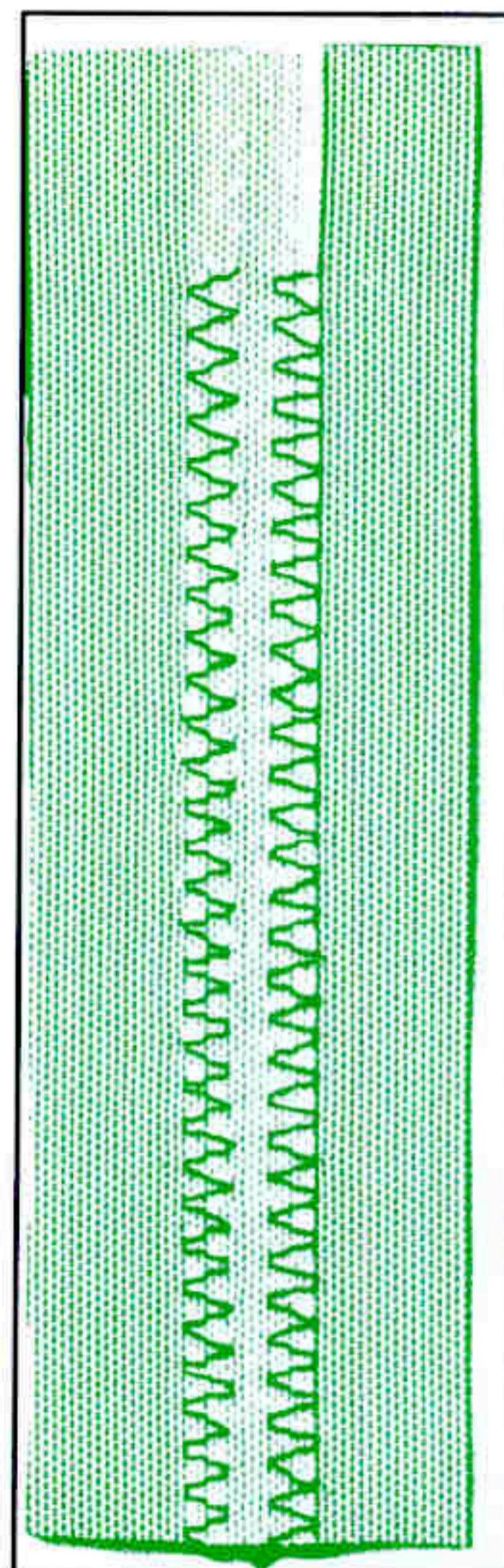
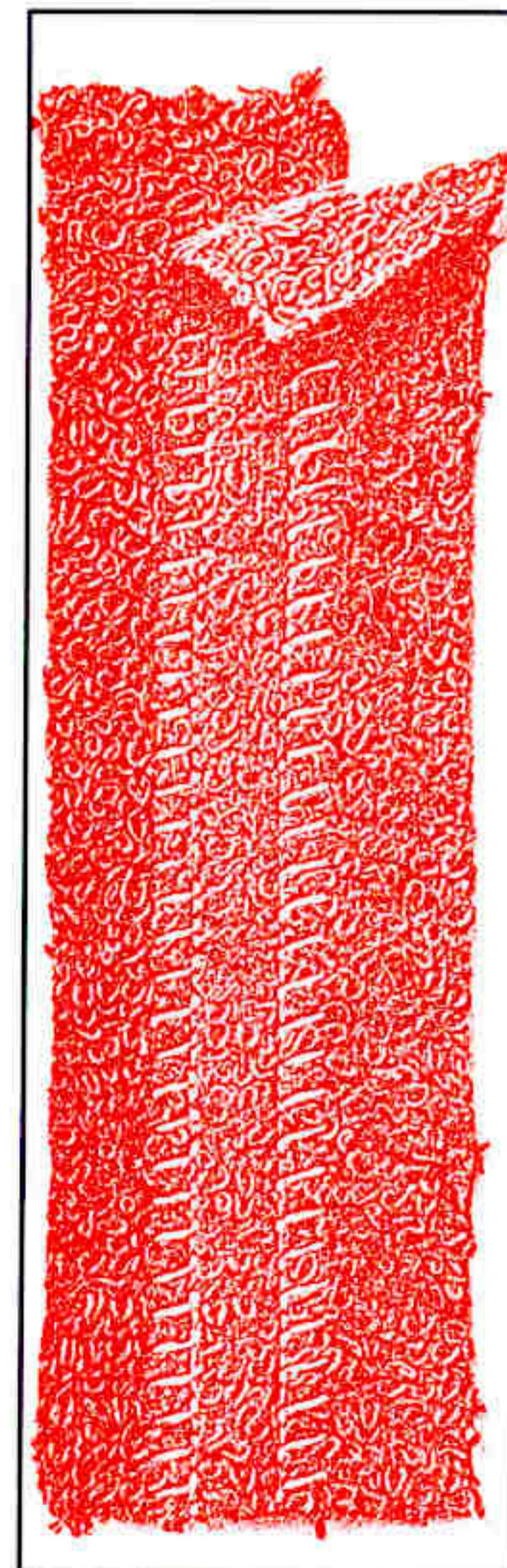
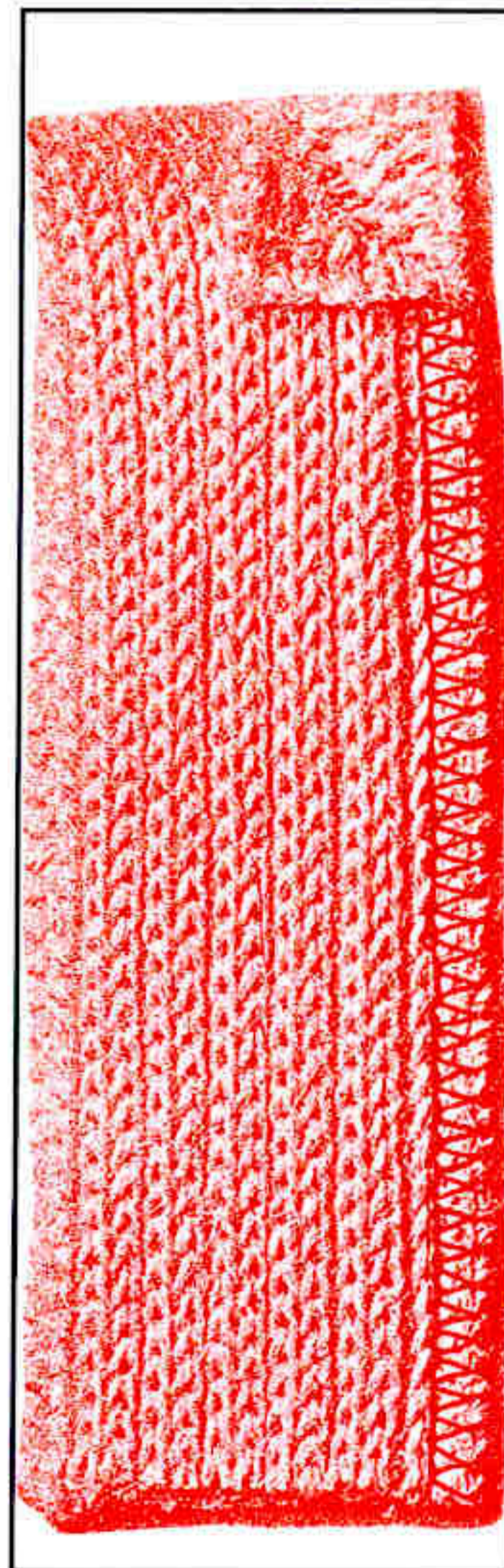
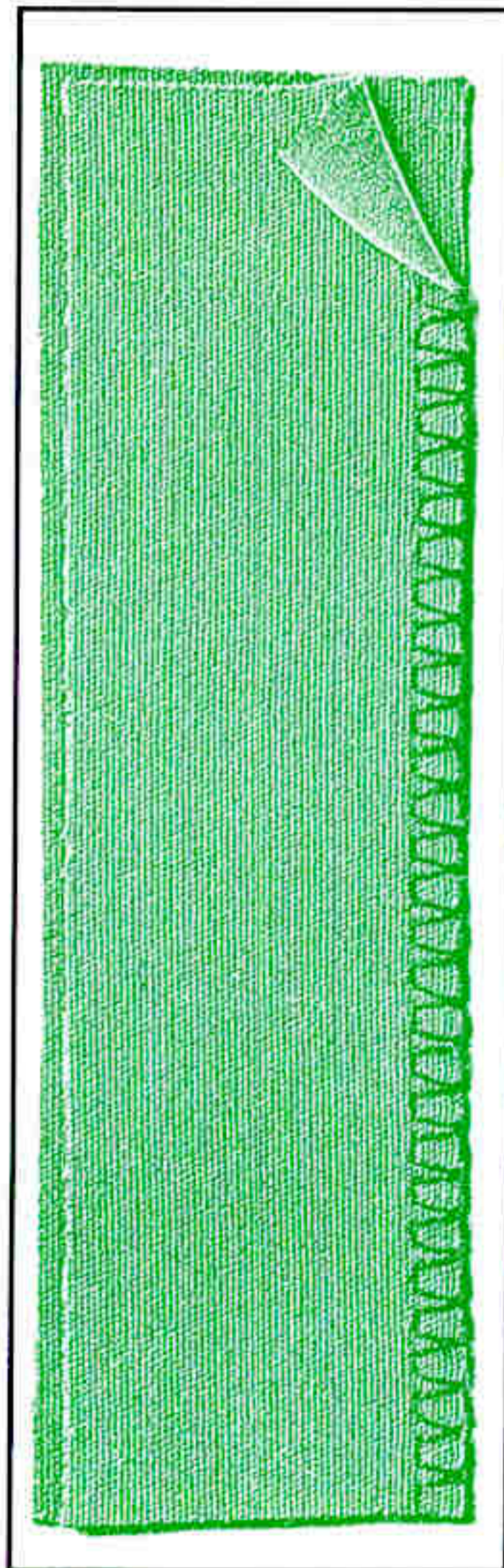
Elastic overlock seam for all coarse and large-meshed knitted goods and heavy jersey.

Flat joining seam

Visible seam for toweling, felt, leather, jeans fabric, leisure-wear, craftwork.

Flat joining seam

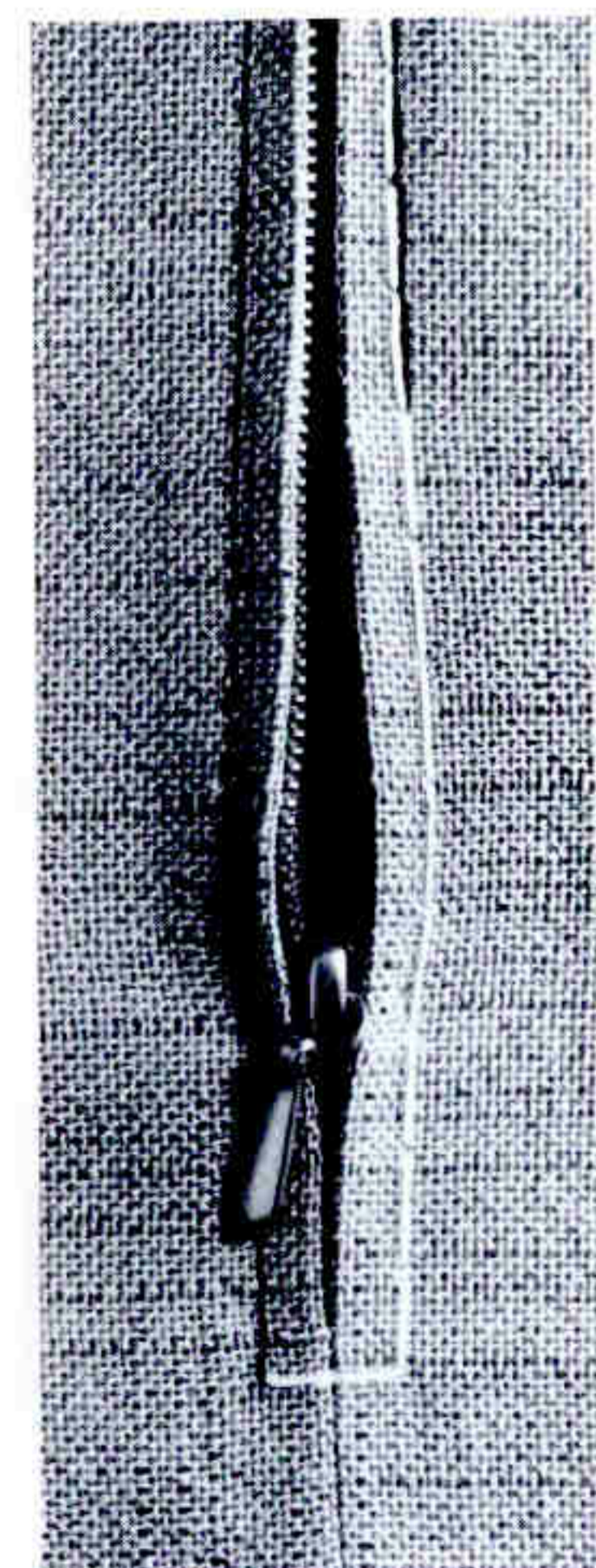
Elastic seam for lycra



Zip Fastener

Zip fastener
inserted flat

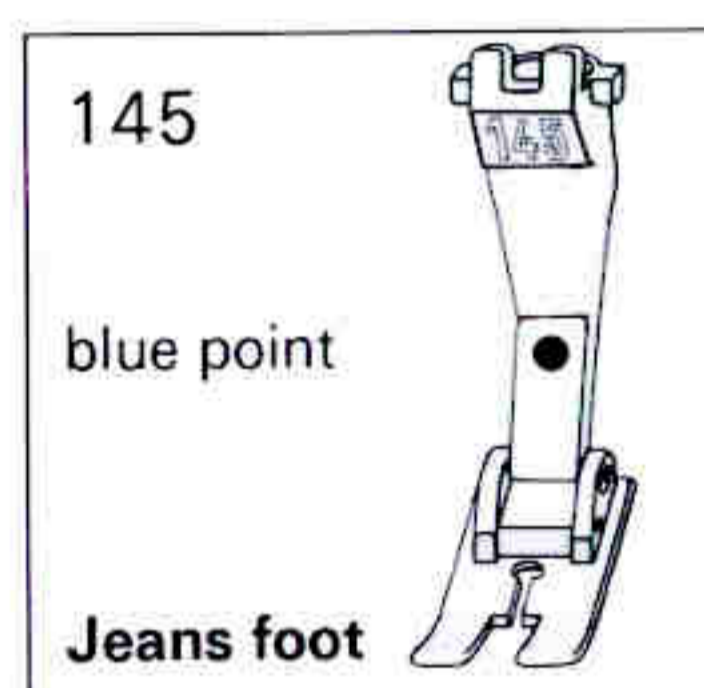
Presser foot:	007
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	0
Stitch length:	2 approx.
Needle position:	left / right
Feed-dog:	sewing
Colour mark:	●



Preparation:

Baste entire seam with basting device. Mark length of zip and sew seam as far as zip opening. Unpick basting thread – **except along zip section**. Press entire seam, trim evenly and overcast. Remove remaining basting thread. Baste-in zip so that the teeth are covered by the material. Sew-in zip, both sides from bottom to top, once with the needle position right and once with needle position left.

Jeans Foot



Unusually thick or hard seams can be sewn without difficulty with the jeans foot.

Select stitch length as required between 2 and 3.5 mm.

Please ensure that **needle position «centre»** and **stitch width «0»** are set.

Use needle No. 100

Plastic Leather

Plastic

Like synthetic fibres, plastic must be treated differently according to surface and graining when securing the edges. If the work does not slide properly it is often sufficient to lubricate the sewing area slightly with sewing machine oil (using a small cotton wad wrapped in absorbent material). Alternatively use presser foot with sliding rollers or Teflon base.

Always sew plastic with long stitch length to prevent cutting.

Leather and imitation leather




It is, of course, also possible to sew leather. It may be necessary to use leather needles for hard leather.

Sew a test piece first. Stitch length not too short.

Try using the presser foot with sliding rollers or Teflon base.

Automatic Long Stitch / Basting Device

The switch for automatic long stitch has 3 positions.

-  Automatic long stitch and basting device are disconnected. Machine sews normally.
-  Automatic long stitch is switched on
-  Basting device is switched on

Automatic long stitch
 Penetrate needle; switch on automatic long stitch device. With the automatic long stitch switched on, the machine sews every alternate stitch. Longest stitch: 8 mm. The long stitches can be sewn at all 5 needle positions.

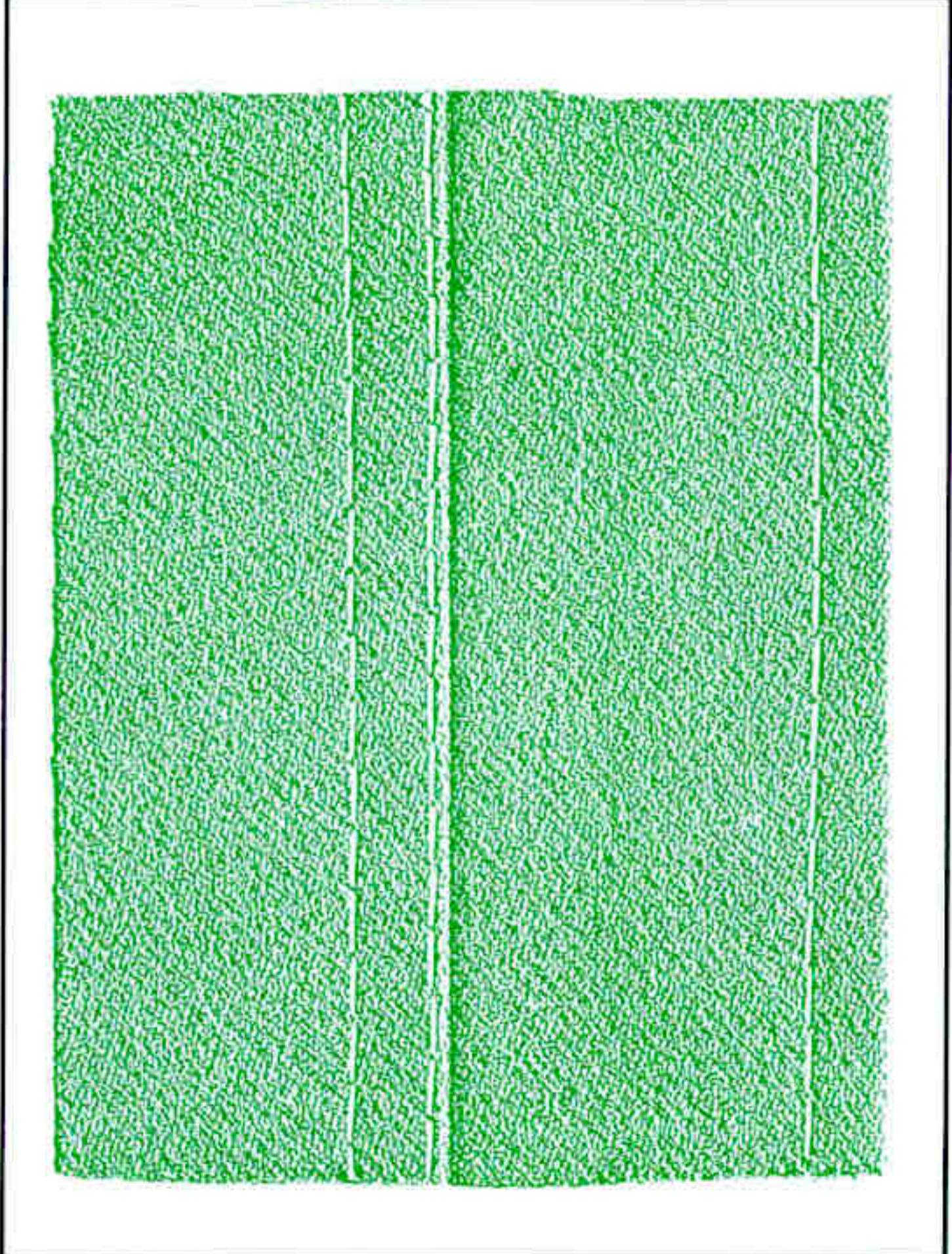
Presser foot:	000
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	0
Stitch length:	2-4
Needle position:	all positions
Feed-dog:	sewing
Colour mark:	●

Decorative seams with buttonhole thread (cordonnet)
 a) Buttonhole thread as upper thread b) Buttonhole thread as lower thread.

General rule:
Needle No. 110 or 120

It is perfectly possible that a needle No. 100 will be satisfactory for certain types of material. Do a test piece of sewing. If the thick needle is unsuitable for the material, the buttonhole thread must be sewn as lower thread. In this case, sewing must be on the back of the material. If the sewing line is not visible, e.g. when sewing on

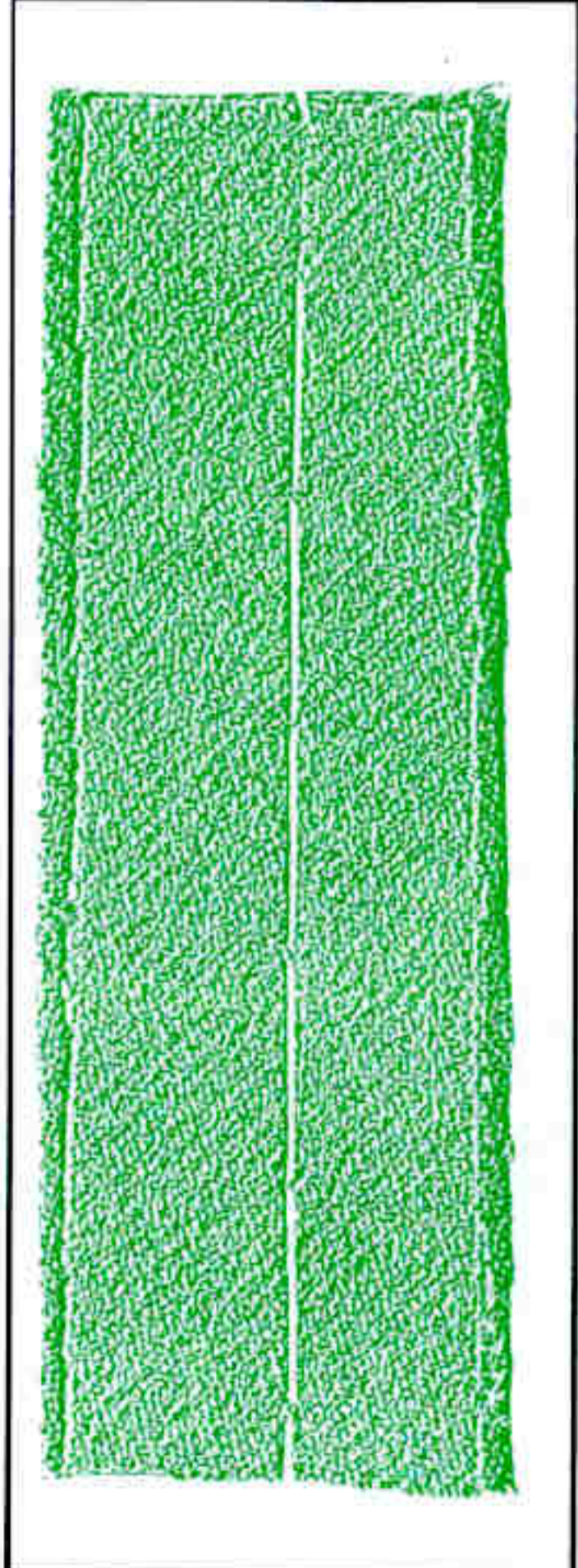
pockets, it is first basted with darning thread. Use contrasting colour. The basting seam indicates the sewing line on the back and is easily removed at the end.



Basting device

Presser foot:	000
Thread:	sewing thr./basting thr.
Needle:	80
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	0
Stitch length:	1½-4
Needle position:	all positions
Feed-dog:	sewing
Colour mark:	●

With the basting device switched on, the machine sews every 6th stitch. This produces long basting stitches (longest stitch 2.4 cm). Select desired basting stitch length with the normal stitch length control. The basting stitches can be sewn in all needle positions. To secure beginning of seam sew several stitches, then penetrate needle into the material and switch on automatic long stitch device. To secure end of seam switch off automatic long stitch device and sew several stitches.



Blind Hemming

Presser foot:	016
Thread:	sewing thr./darning thr.
Needle:	80-70
Stitch selection:	selector lever 2 changeover lever 1-20
Stitch width:	2½ approx.
Stitch length:	2-2½
Needle position:	right
Feed-dog:	sewing
Colour mark:	●

Important
As for sewing by hand, a fine material requires a fine needle and fine thread. This work is best sewn at a slow speed.

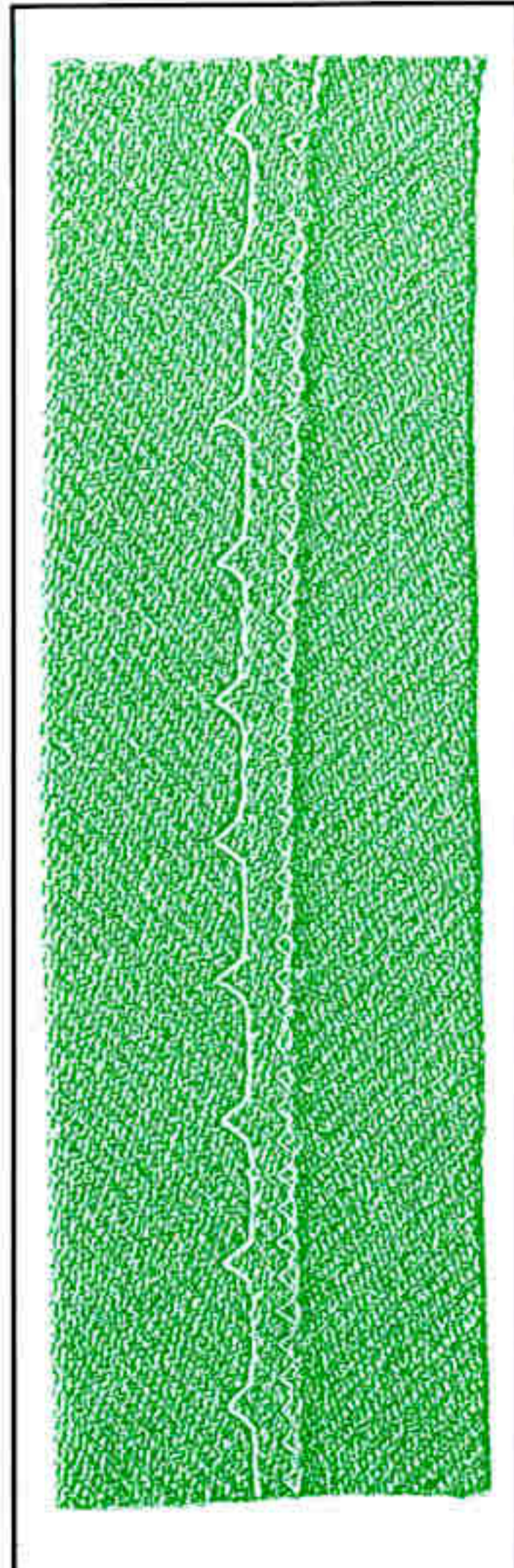
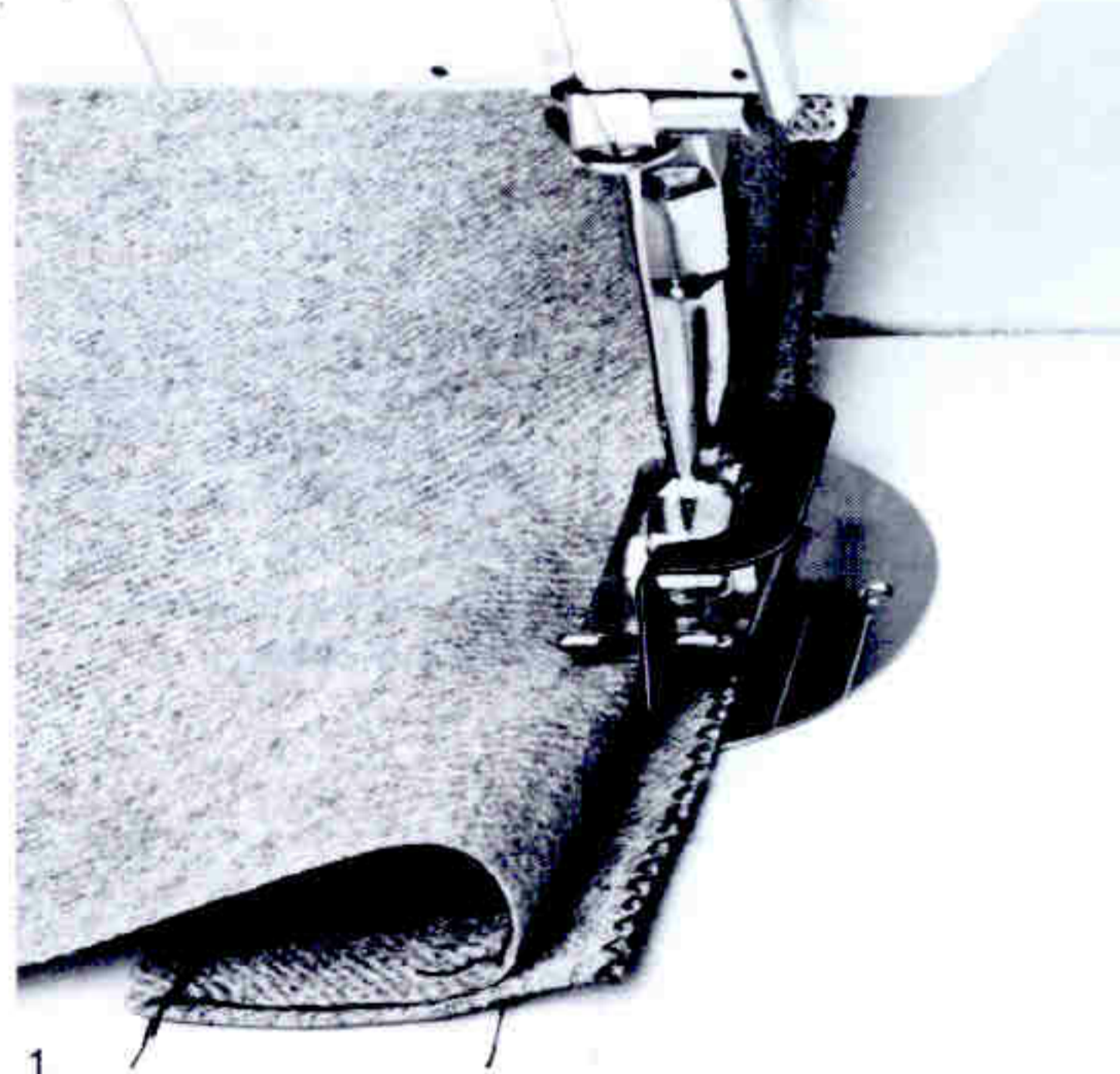
Preparation
The hem should be prepared as for sewing by hand: oversew raw edge, baste and press.

Placing the hem
How the work is placed beneath the foot (see Fig. 1).

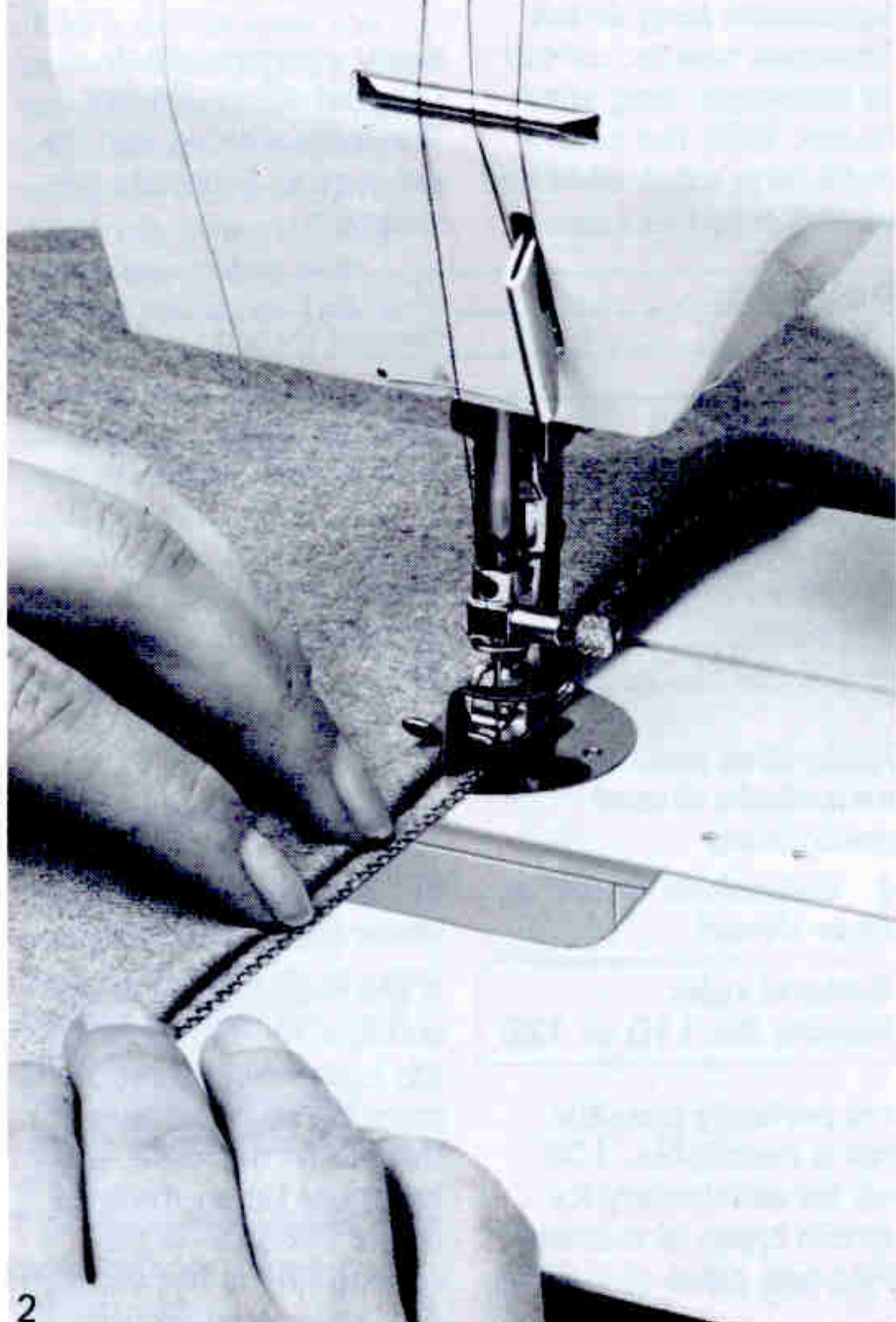
Trial sewing (on a material remnant or directly on hem) It is recommended to sew a trial piece owing to the varying material thicknesses; the needle should only **prick** the edge of the material, as when sewing by hand.

Basic setting is always stitch width 2½. The different thicknesses of ma-

terial may require a small adjustment.
Trial: Sew slowly, until the needle swings to the left side. Using the hand-wheel guide the needle until it just touches the fold and check that it just catches it. If necessary, adjust stitch width slightly: making it narrower if needle is too far over fold and wider if it is missing the fold. Check the next left swinging stitch in the same way. Then sew approx. 10 cm and check again.



Guiding the work
Guide the hem into the foot as shown in Fig. 2. **Tip:** Hold the work lightly ensuring the fold is always kept against the guide.



Stitching Edges using the Needle Positions

Narrow-stitched edges
on collars, cuffs, lapels, hems, etc.

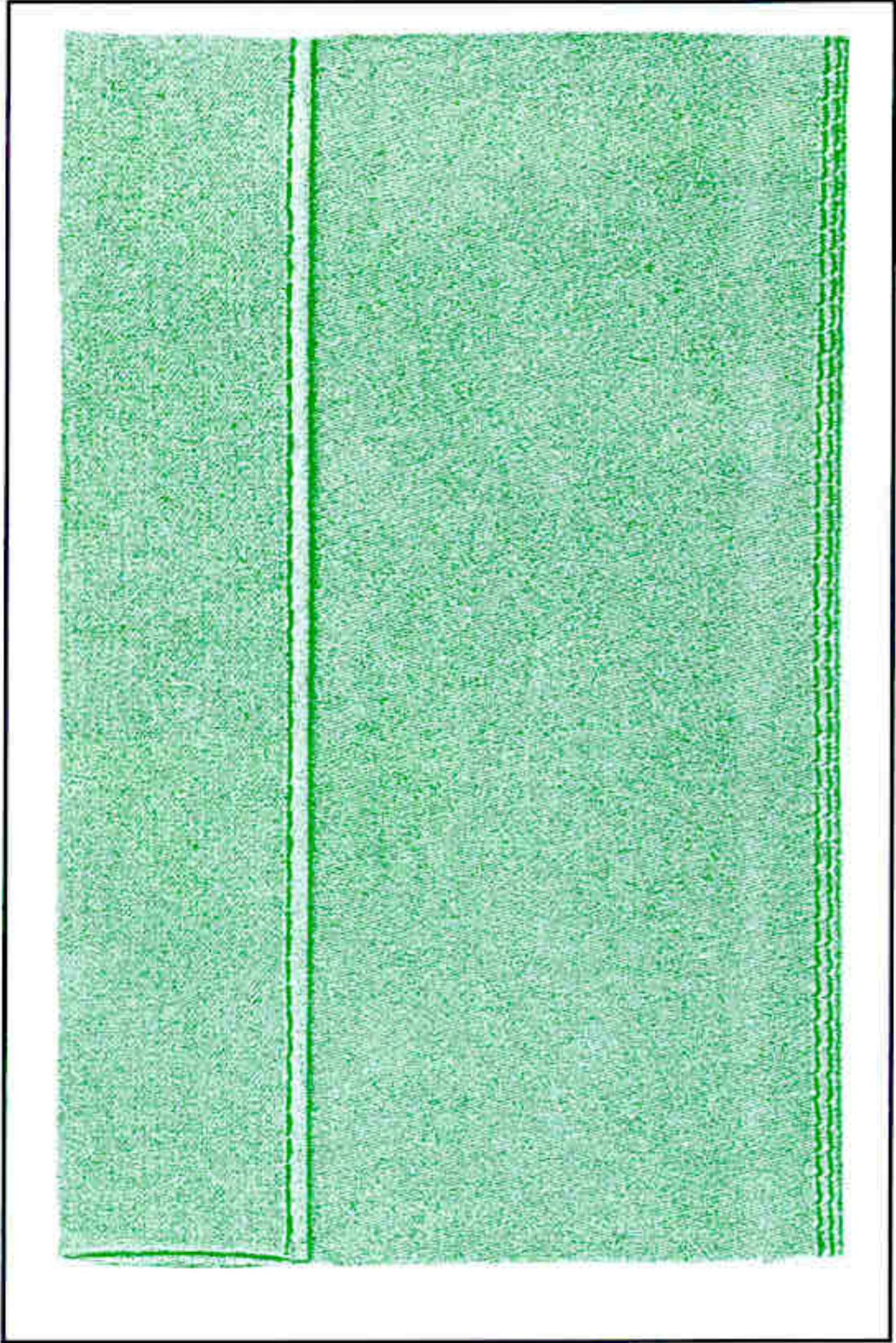
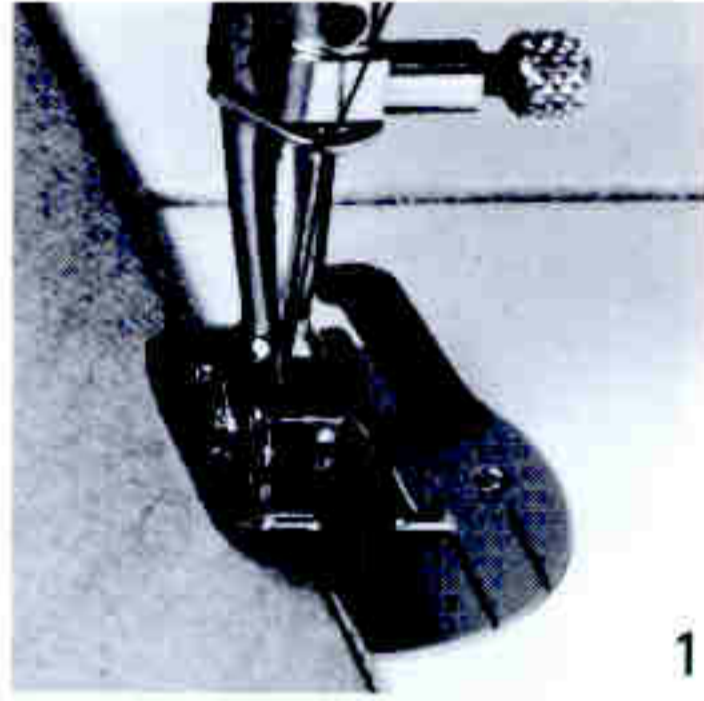
Presser foot:	016
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	0
Stitch length:	1½–4
Needle position:	left / half-left
Feed-dog:	sewing
Colour mark:	●

Place fabric edge to left side of guide on blind-stitch foot (Fig. 1). Set needle position left or half-left. Switch on automatic long stitch for long stitches.

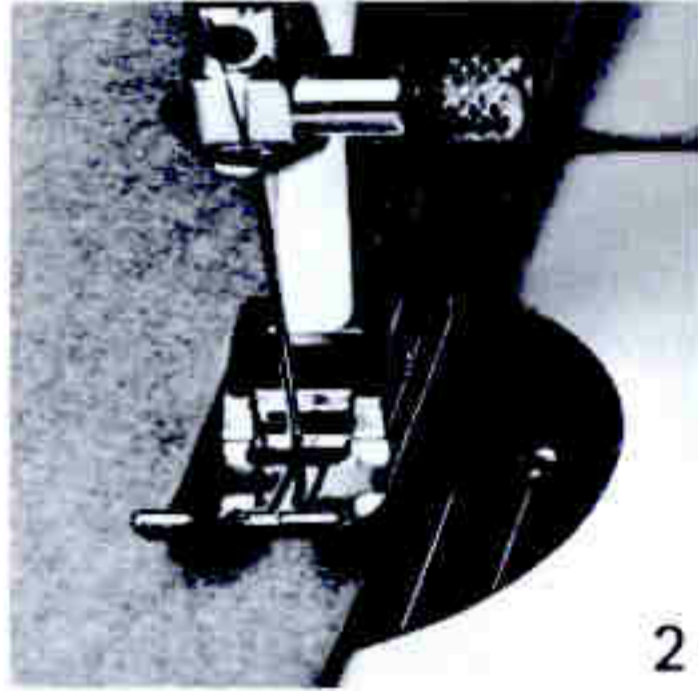
Wide-stitched edges
likewise for edges of all kinds

Presser foot:	000
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	0
Stitch length:	1½–4
Needle position:	all positions
Feed-dog:	sewing
Colour mark:	●

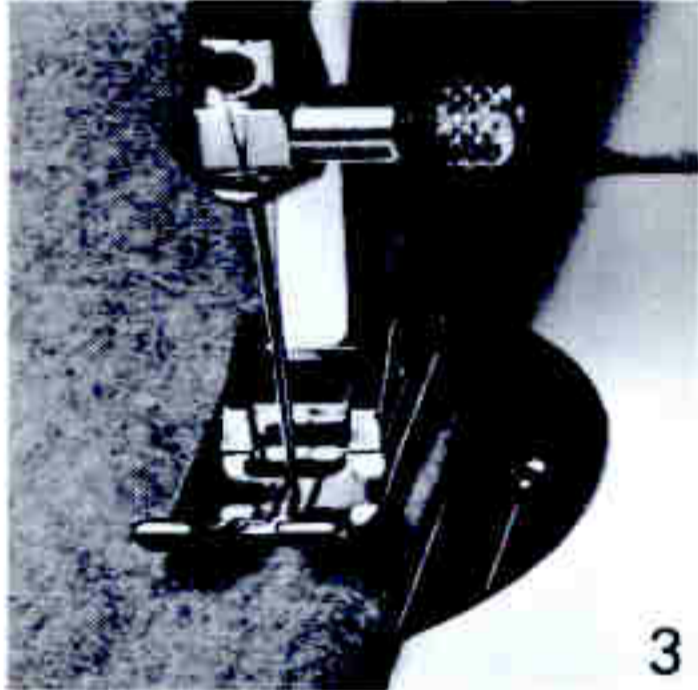
Guide material edge along the presser foot or along the markings in the stitch plate.



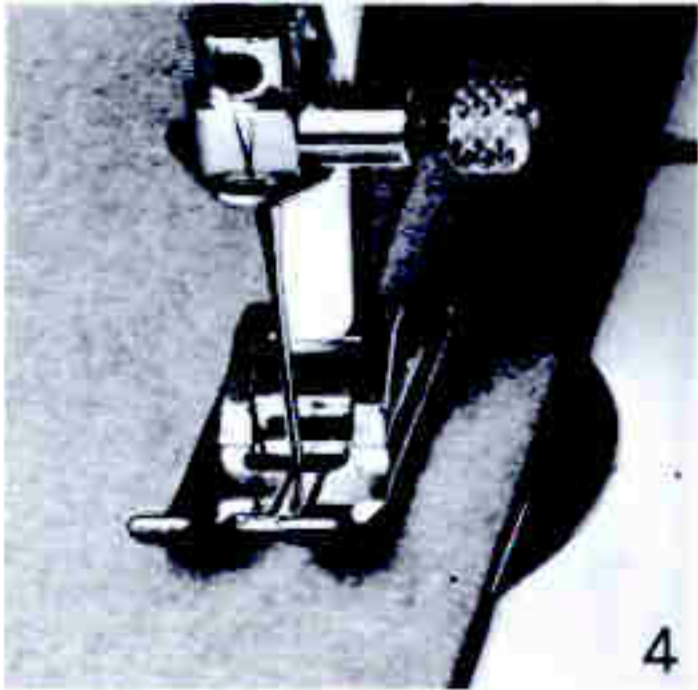
Stitching widths:
a) Presser foot deep = 7 mm (Fig. 2)



b) Marking line 1 = 10 mm (1 cm) (Fig. 3)



c) Marking line 2 = 15 mm (1,5 cm) (Fig. 4)

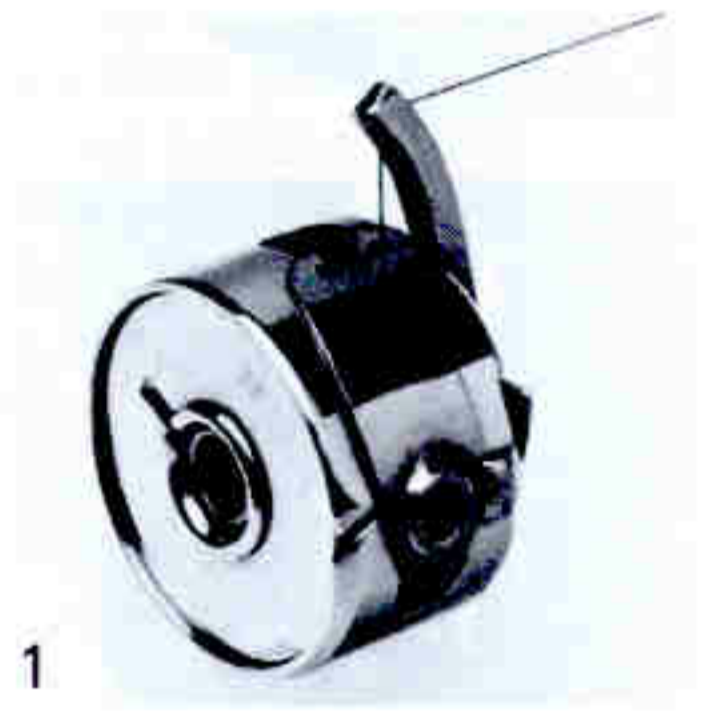


Other widths can be sewn using the needle positions left, half-left, right and half-right.

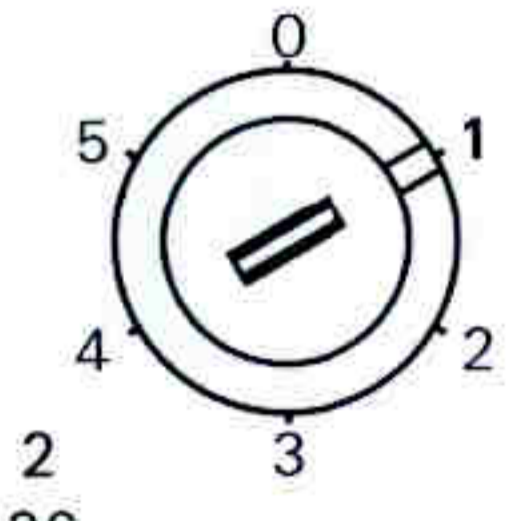
Buttonholes

Presser foot:	452
Thread:	sewing thr./darning thr.
Needle:	80-70
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	connected automatically
Stitch length:	practically 0
Needle position:	connected automatically
Feed-dog:	sewing
Colour mark:	●

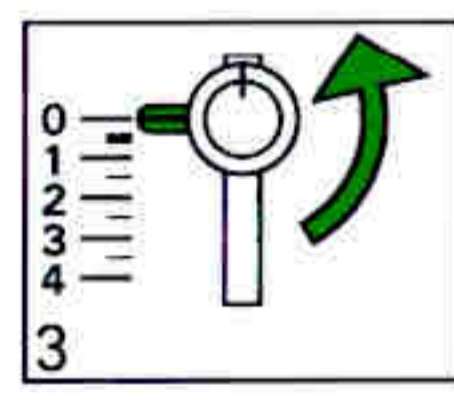
To sew buttonholes, thread lower thread in the finger of the bobbin case (Fig. 1).



Buttonhole setting
1. Switch buttonhole knob to position 1 (Fig. 2)

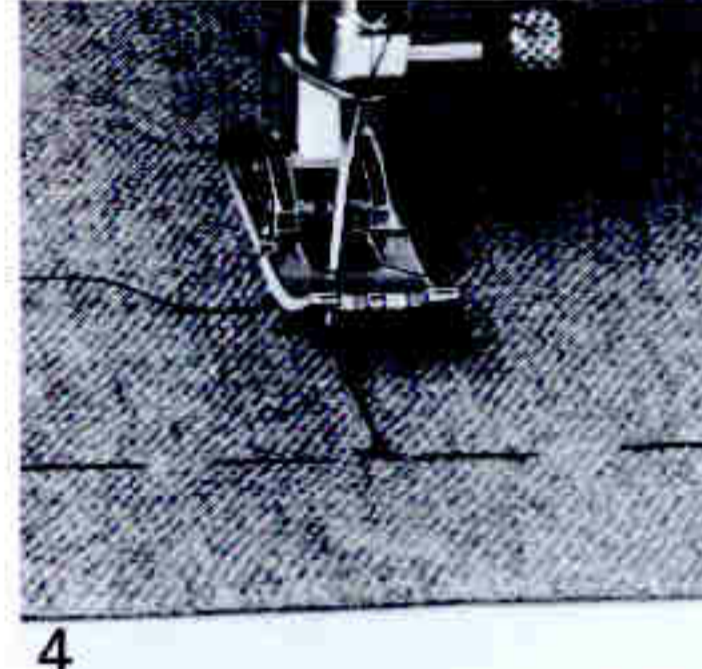


2. Set stitch length as follows. Turn knob to right until it locks. The Mark is now on top (Fig. 3) and the stitch length is 0. Now make half a turn to the left (marking

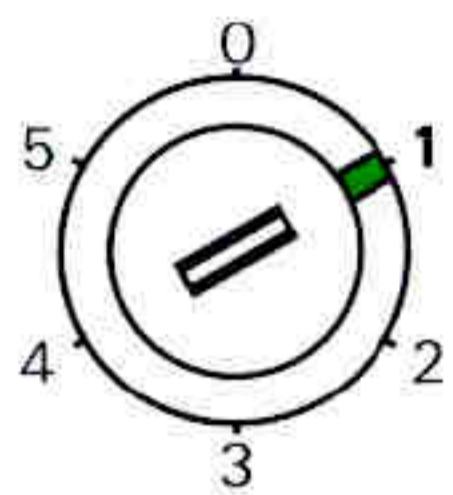


line to the bottom) and this will give the **basic setting** for the stitch length. Adjust stitch density to suit material: turn a little to left for thick fabrics – to right for fine fabrics. Always sew a trial buttonhole. The stitch length varies slightly depending on the type of material.

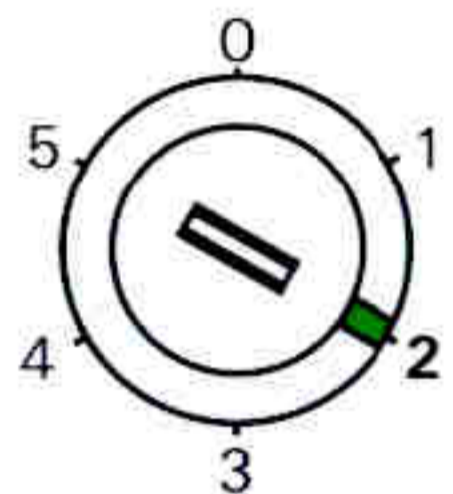
Sewing the buttonhole
Place the material under the foot so that the edge of the material lies **in front of** the presser foot (Fig. 4). Move needle down with the hand-



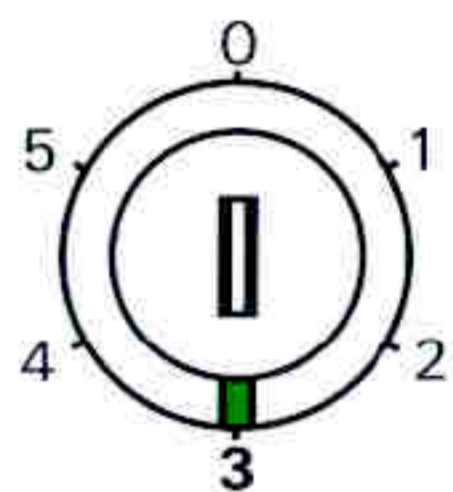
wheel and check whether it is at the **centre** of the presser foot. If not, operate needle stop once. Position work beneath foot and place needle exactly at start of the buttonhole. Lower presser foot and sew buttonhole.



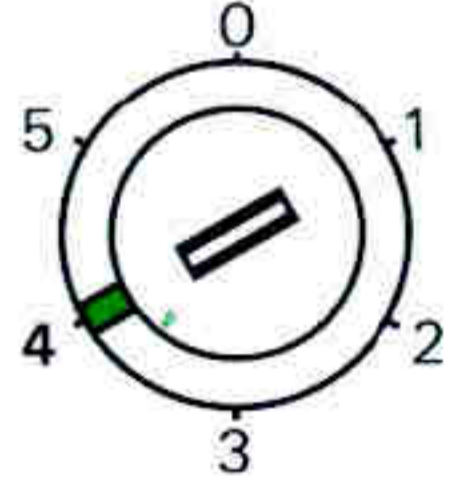
Knob to 1
Machine sews first bead forwards



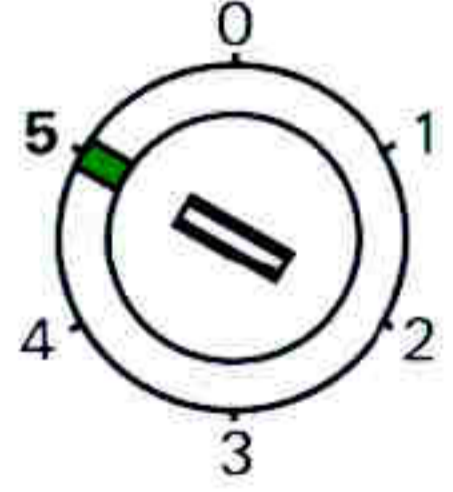
Knob to 2
Machine sews bar tack



Knob to 3
Machine sews second bead backwards



Knob to 4
Machine sews bar tack



Knob to 5
Machine does securing stitches

Reset knob to 1 for further buttonholes. Continue sewing as described above. Set knob to 0 for all other sewing work.

Cutting open buttonhole
It is best to cut from both ends of the buttonhole to the centre (Fig. 5). This avoids cutting through a bar tack.



Corded buttonholes

The gimp cord strengthens the buttonhole.

The gimp cord is particularly important in all knitted materials – both hand and machine-knitted – to ensure that the buttonhole does not pull out of shape.

The thickness of the cord depends on the material to be sewn. The following are suitable: beading thread No. 8, buttonhole thread, thick hand sewing thread, or fine crochet cord. Sew a trial buttonhole.

Place material under the foot so that the edge of the material lies **in front** of the presser foot. The loop of the cord then comes at the end of the buttonhole which is pulled by the button (Fig. 6).

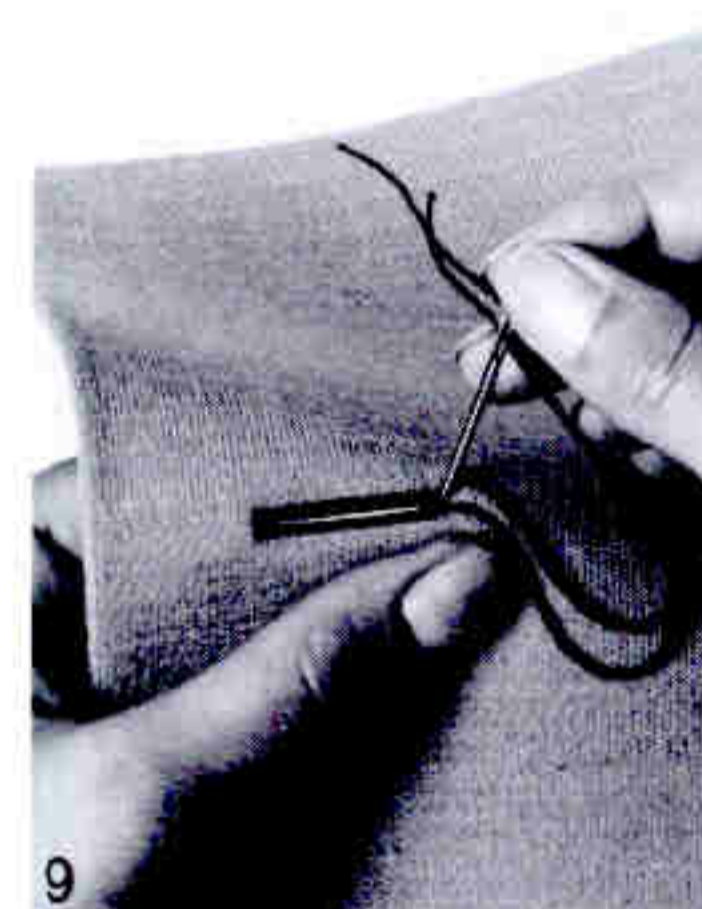
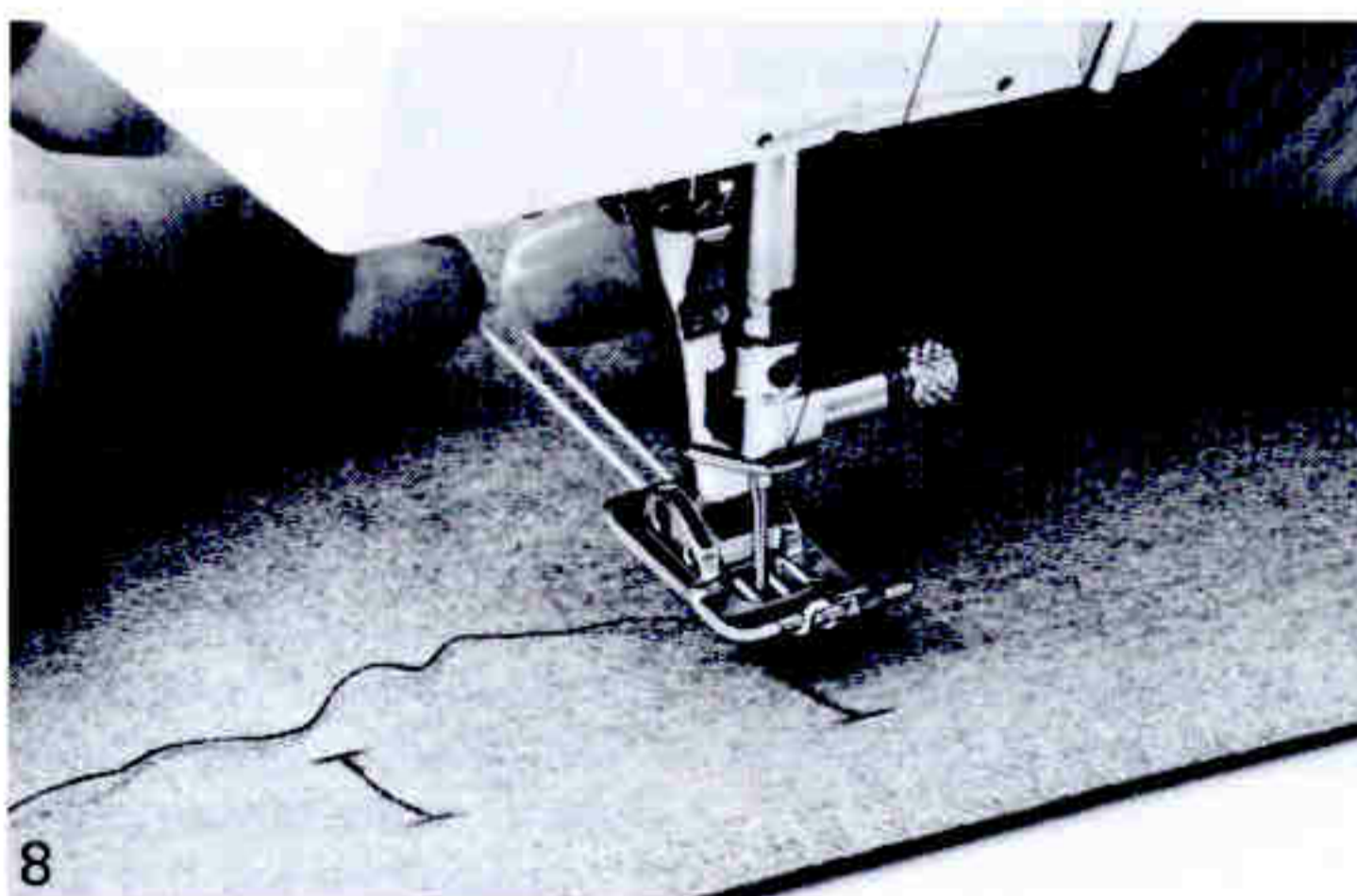
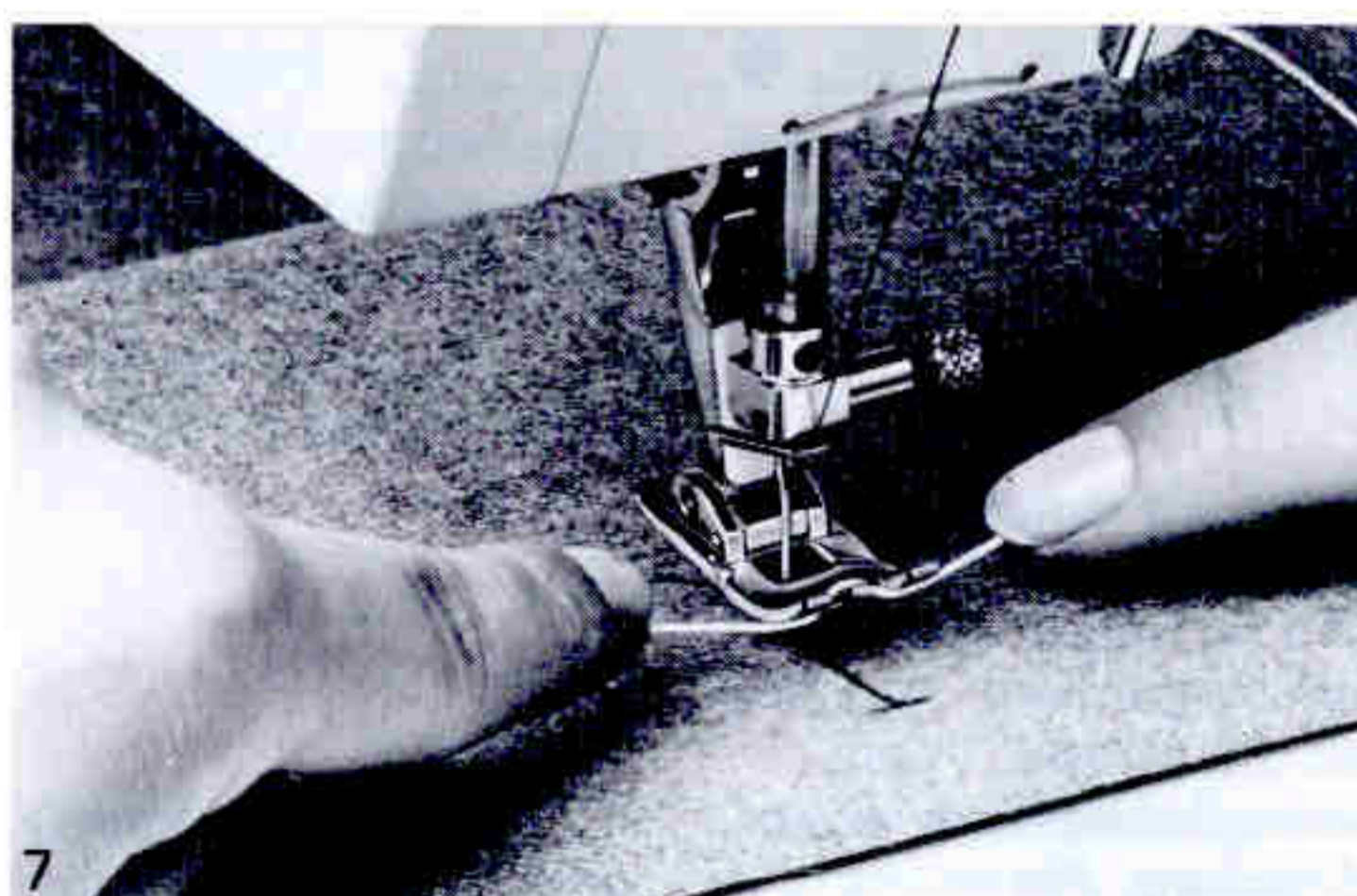
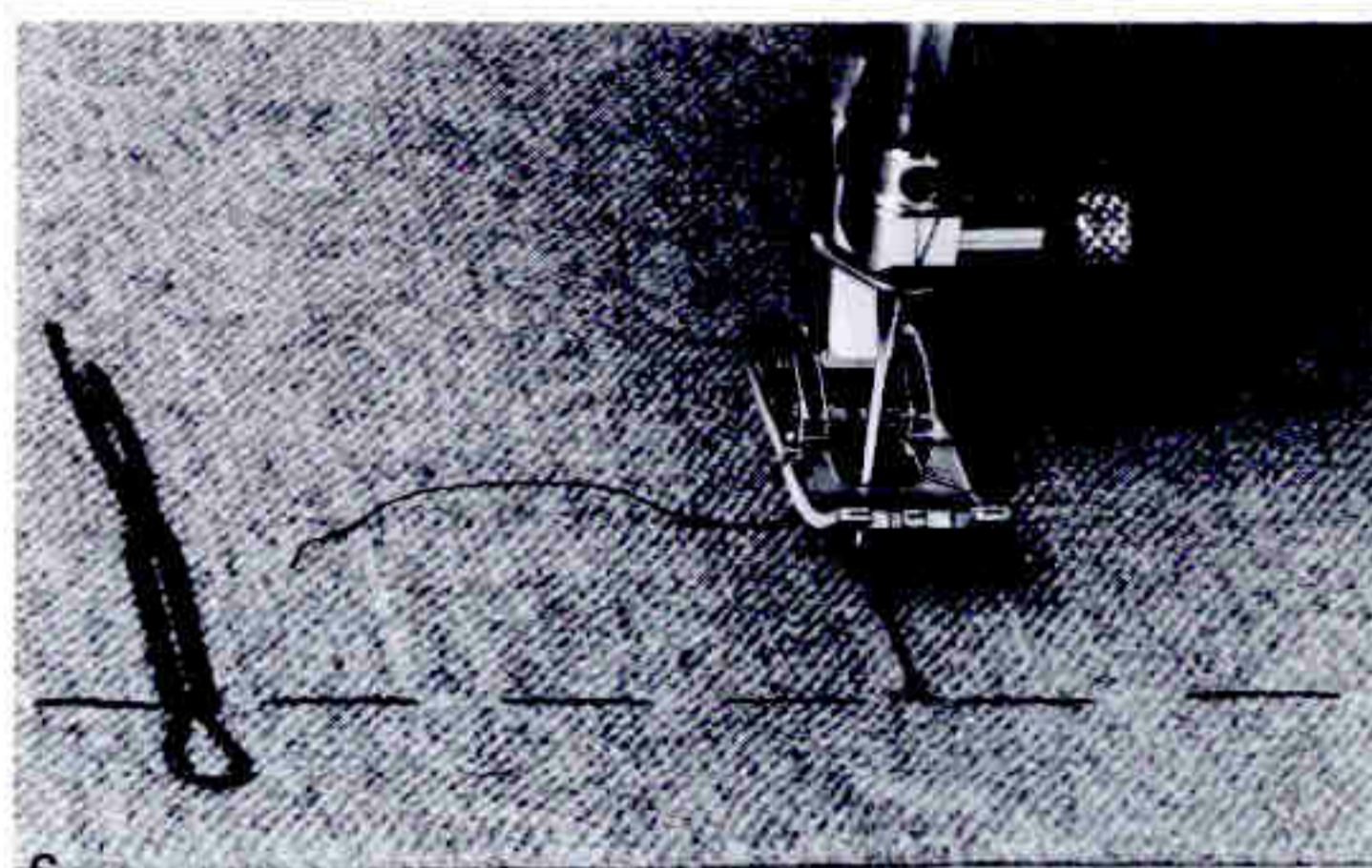
Sewing with gimp cord

It is much easier to position the cord if the needle is already in the material:

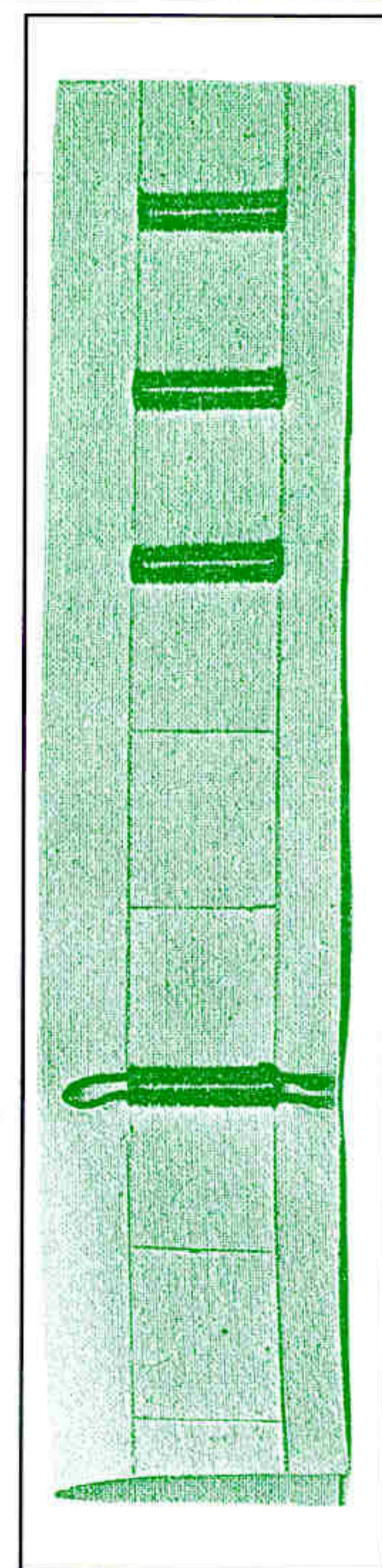
1. Move needle down using hand-wheel and check whether it is at the centre of the presser foot. If not, operate needle stop once. Position material beneath foot and place needle exactly at start of buttonhole. Do not lower foot yet.

2. Place cord over the centre stem of the buttonhole foot (Fig. 7) and take both ends under the foot to the rear (Fig. 8). Lower foot and **check whether cord can slide**, i.e. is not stuck.

3. Sew buttonhole, do not hold cord as it must be able to move.



Finally pull the loop of the cord into buttonhole. In knitted fabrics thread ends of cord to rear with large hand sewing needle (Fig. 9) and tie or sew in securely. The cord end can be cut off in woven material.



Mending Jersey

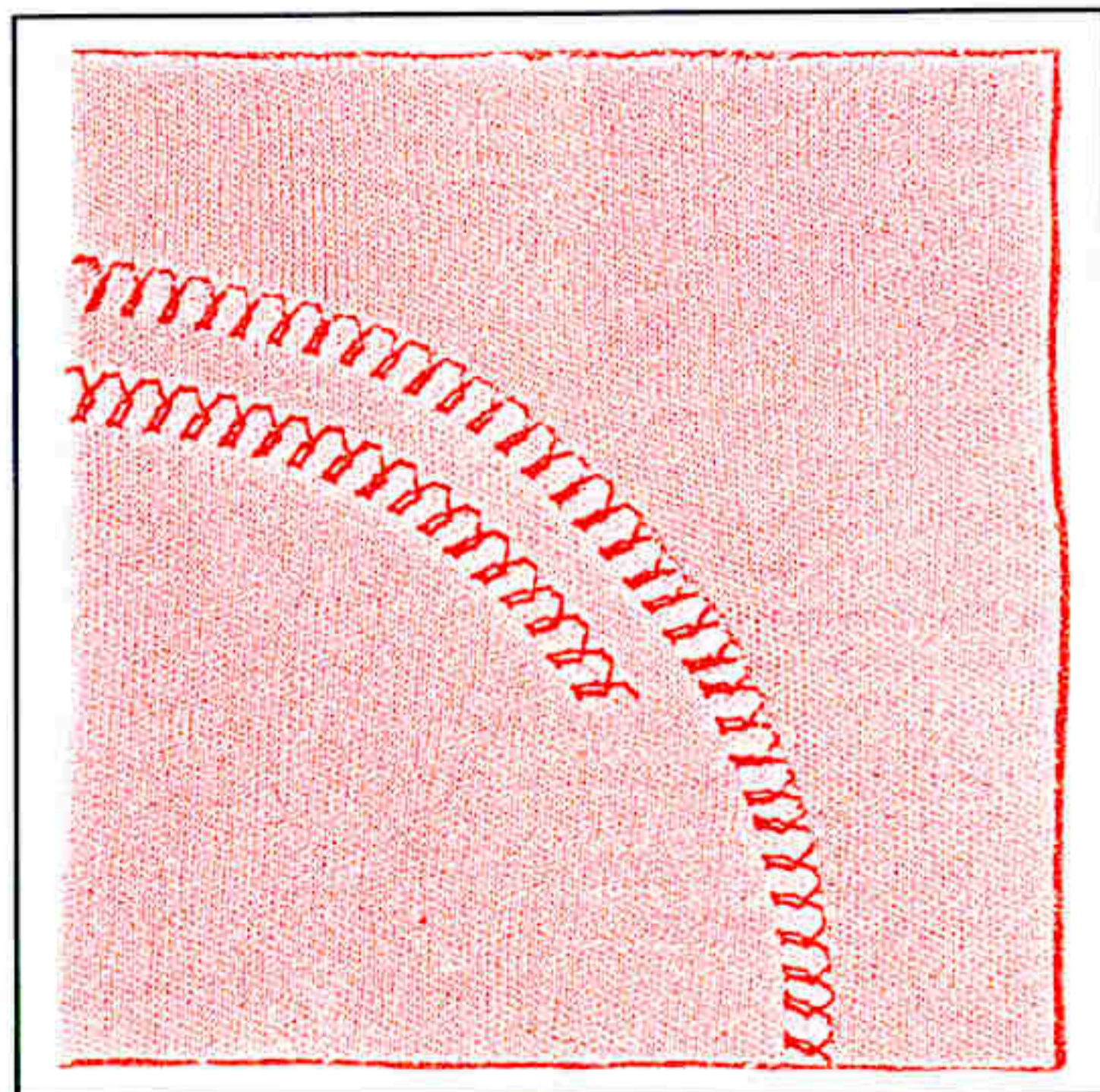
Patching with jersey stitch

Mainly for mending jersey underwear.

Presser foot:	560
Thread:	darning thread
Needle:	80-70
Stitch selection:	selector lever 4 changeover lever 1-20
Stitch width:	4
Stitch length:	2
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

It is best to darn minor tears. See page 30. For larger thin or damaged areas, it is preferable to

fit a replacement piece, since this retains the elasticity.



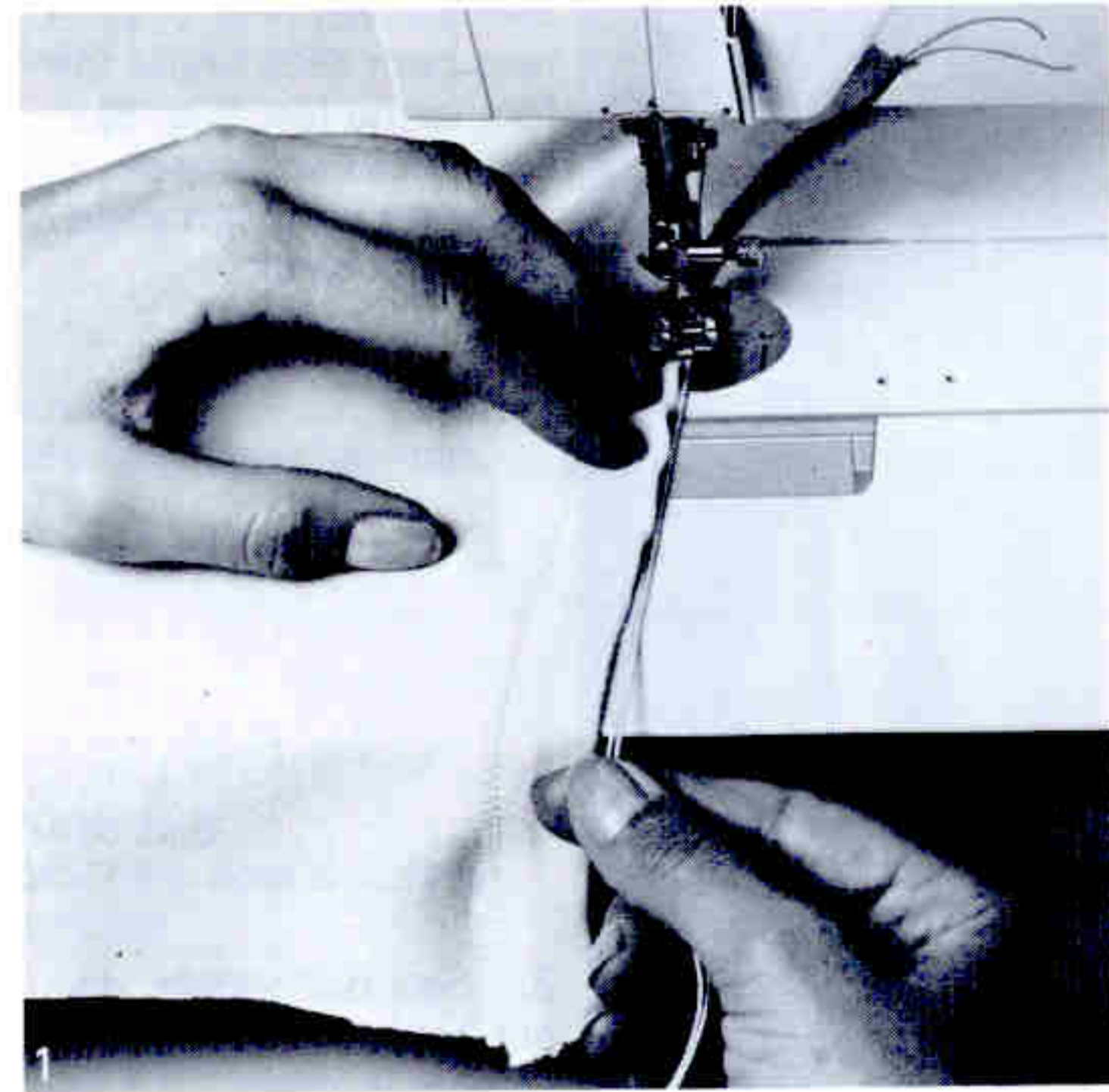
Cut out a replacement piece from the good part of a no longer worn, similar garment, rounding off the corners, to preserve the elasticity in all directions. Pin on the replacement piece and baste with small basting device stitches along the edge if possible. Then sew on with jersey stitch, 1-2 rows. Finally, cut out damaged portion.

Edging with elastic thread

Elastic thread is used to restore distorted edges to their original shape.

Presser foot:	000
Thread:	darning thread
Needle:	80
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	3
Stitch length:	1-1½
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Guide two elastic threads along the edge and sew on with zig-zag stitches, pulling threads slightly (Fig. 1).

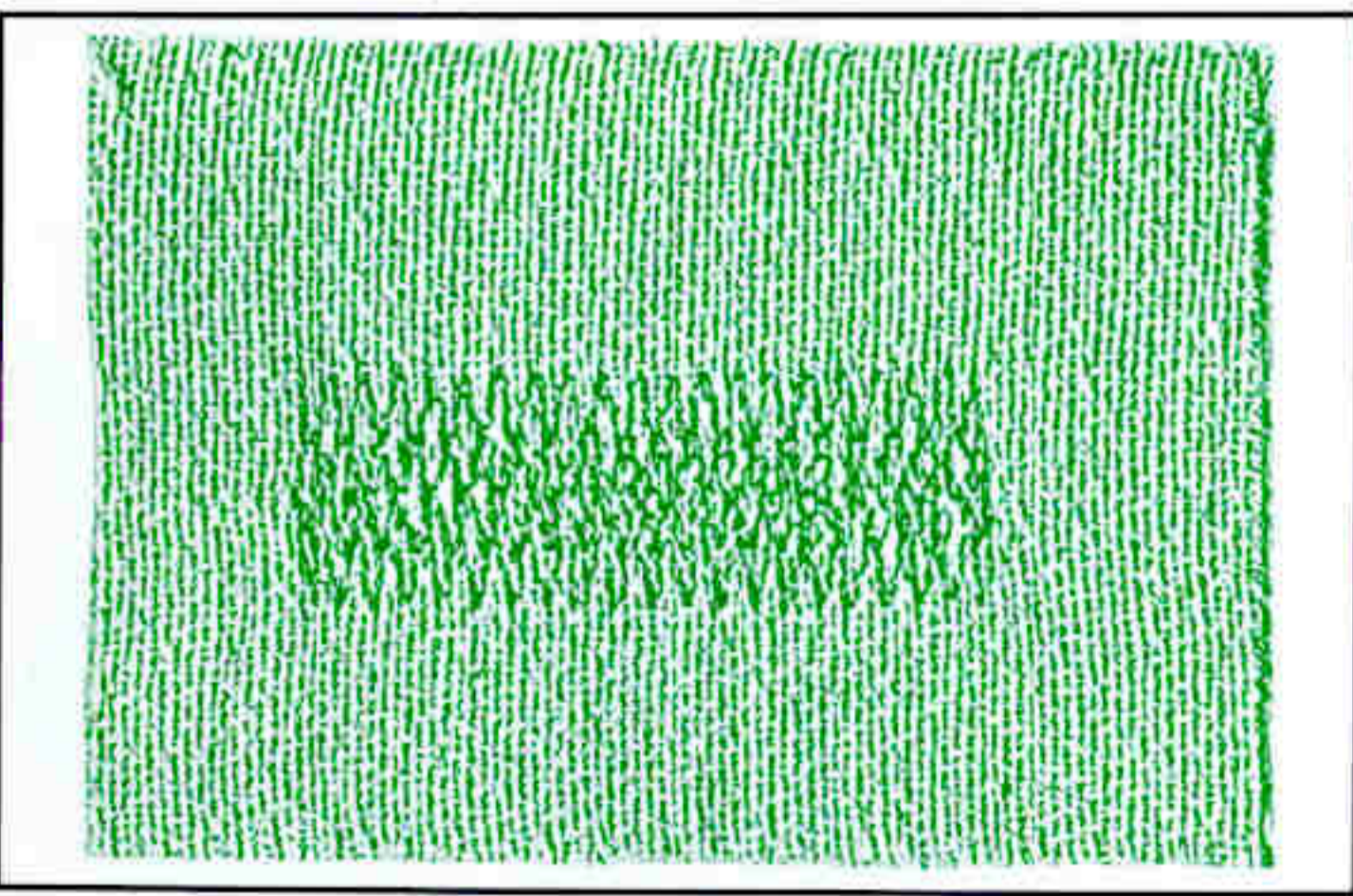
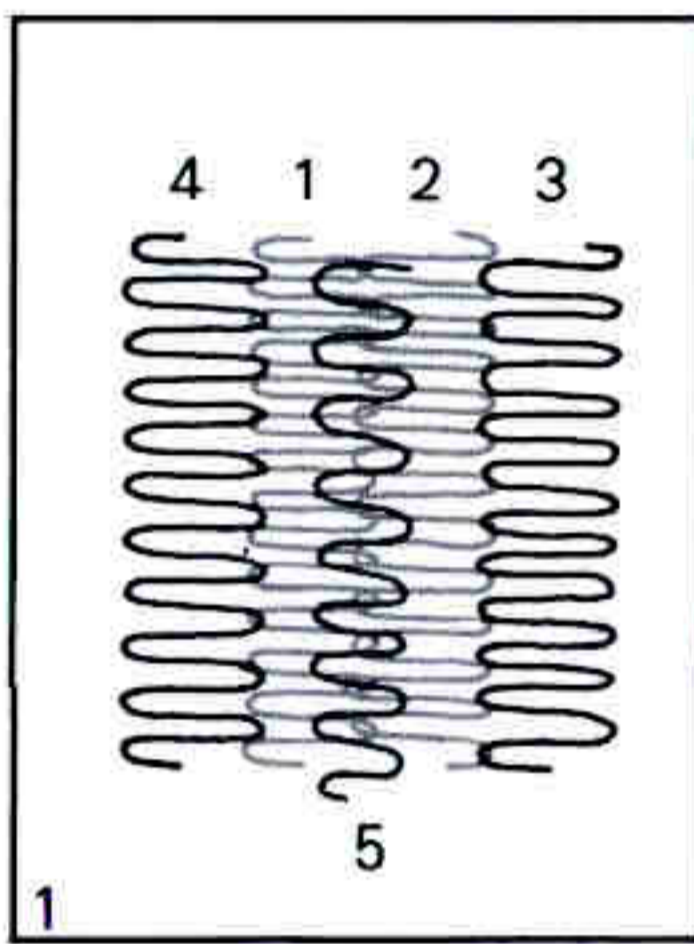


Mending Fabrics

Mending tears with running stitch
(modern darning) For tears and thin places in practically all materials

Presser foot:	000
Thread:	darning thread
Needle:	80-70
Stitch selection:	selector lever 8 changeover lever 1-20
Stitch width:	4
Stitch length:	almost 0-1/4
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Always place a fine backing fabric underneath. Sew 3-5 rows of running stitch for tears, depending on the type of fabric and damage (Fig. 1).
On thin areas sew a sufficient number of parallel rows to cover. Overlapping each row slightly.



Patching with honeycomb stitch
For outer-wear and children's jeans

Presser foot:	560
Thread:	darning thread
Needle:	80
Needle position:	centre
Feed-dog:	sewing

1st operation

Switch on basting device

Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	0
Stitch length:	1 approx.
Colour mark:	●

Do not cut out damaged places. Pin replacement piece on right side and baste along edge with small stitches in darning thread.

2nd operation

Switch off basting device

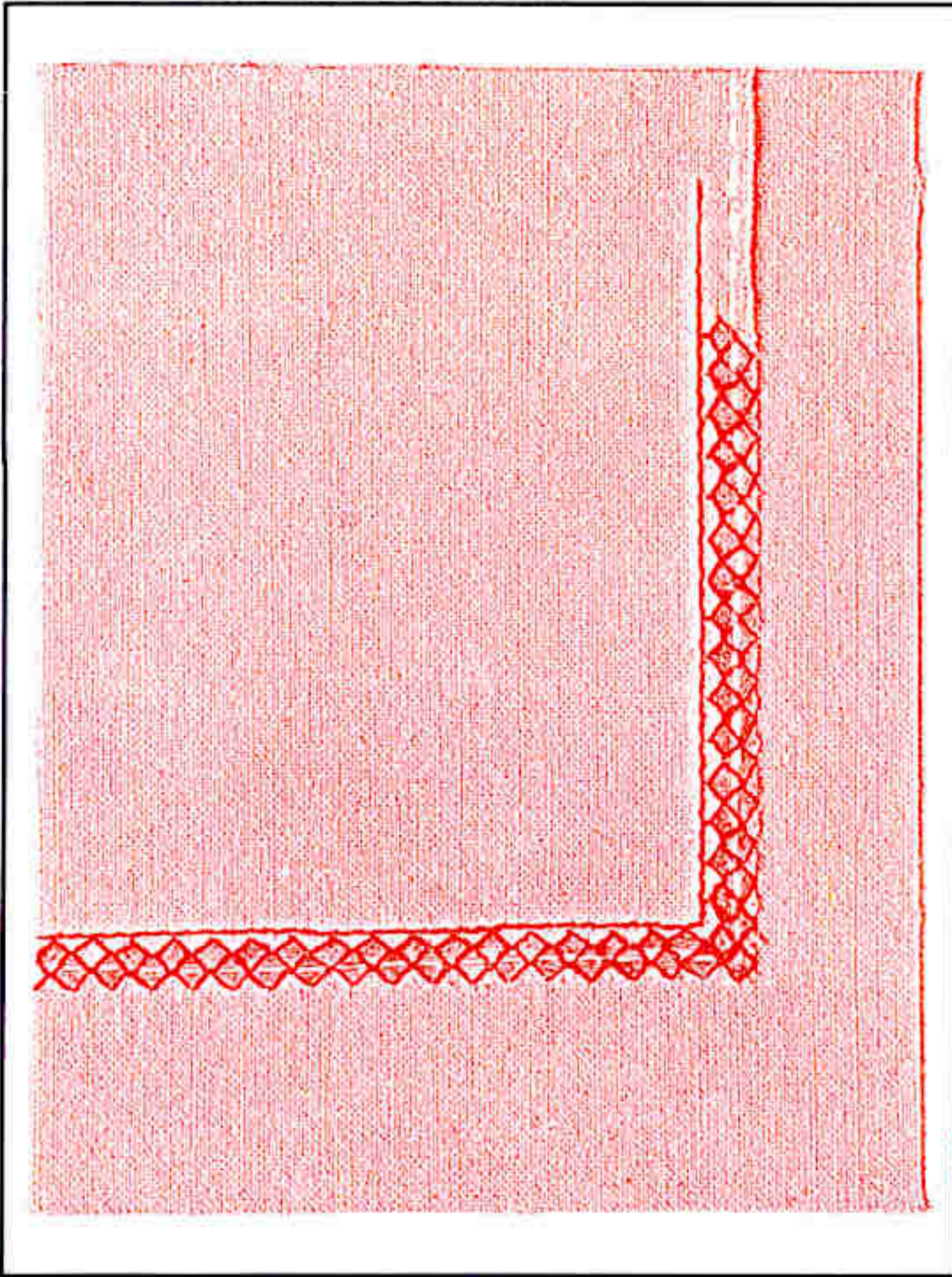
Stitch selection:	selector lever 1 changeover lever 1-20
Stitch width:	4
Stitch length:	2
Colour mark:	●

Oversew edges with honeycomb stitch. Ensure that the honeycomb stitch seam lies completely on the replacement piece and that the needle pierces exactly beside the edge of the replacement piece.

3rd operation

Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	0
Stitch length:	1/2 approx.
Colour mark:	●

Sew straight stitch on the inside edge - along the honeycomb stitch, then cut out the damaged piece. The straight stitch makes it easier to cut out.



Darning

Principle of darning

The feed-dog must be lowered for darning to ensure that the material will not be moved by the feed dog. The material is moved to-and-fro by hand. It is important to guide evenly when darning and this requires a little practice.

Recommendation

- Use a darning ring if possible, to keep the darning area taut.
- Move ring to-and-fro **without pressure**, otherwise jerky movements and torn threads occur.
- Starting from the left

side of the hole work up and down gradually across the hole towards the right. Finish with needle in work on the right and pivot the work 90 degrees. Sew second run at right angle to the first rows. Still working up and down fill in any gaps.

- Suitable method of holding ring: the 4 outer fingers hold it fairly tightly to keep it securely in the hand (Fig. 1). This also helps to guide the work regularly.
- Use sewing table, support elbows if possible. Set up machine a sufficient distance from edge of table.

Darning technique

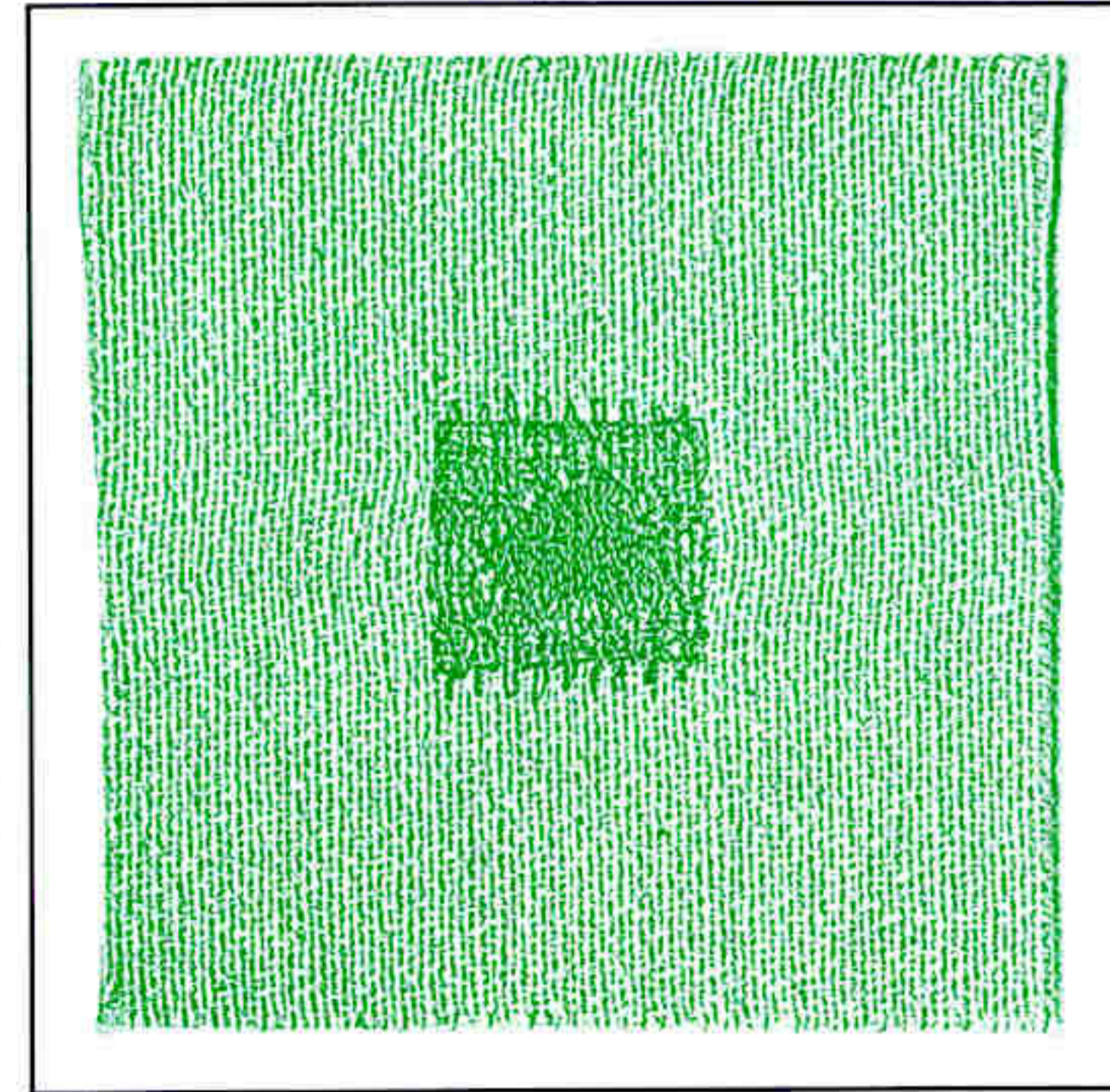
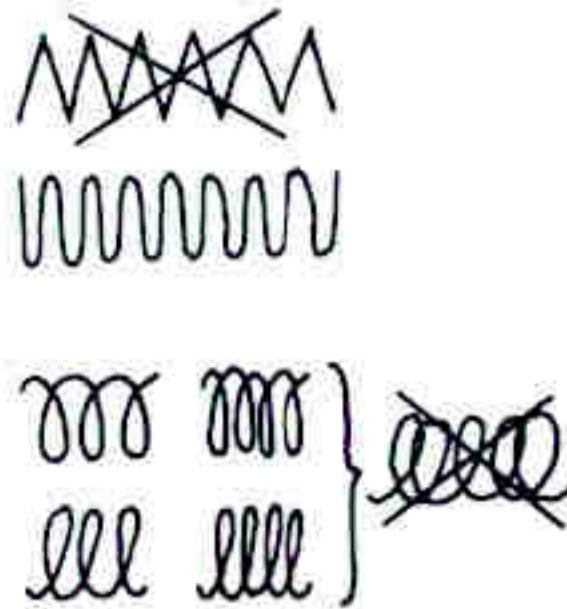
There are various methods of darning. The following is one which can be learnt easily:

Presser foot:	285
Thread:	darning thread
Needle:	80–70
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	0
Stitch length:	0
Needle position:	centre
Feed-dog:	lowered
Colour mark:	●

The Three Steps

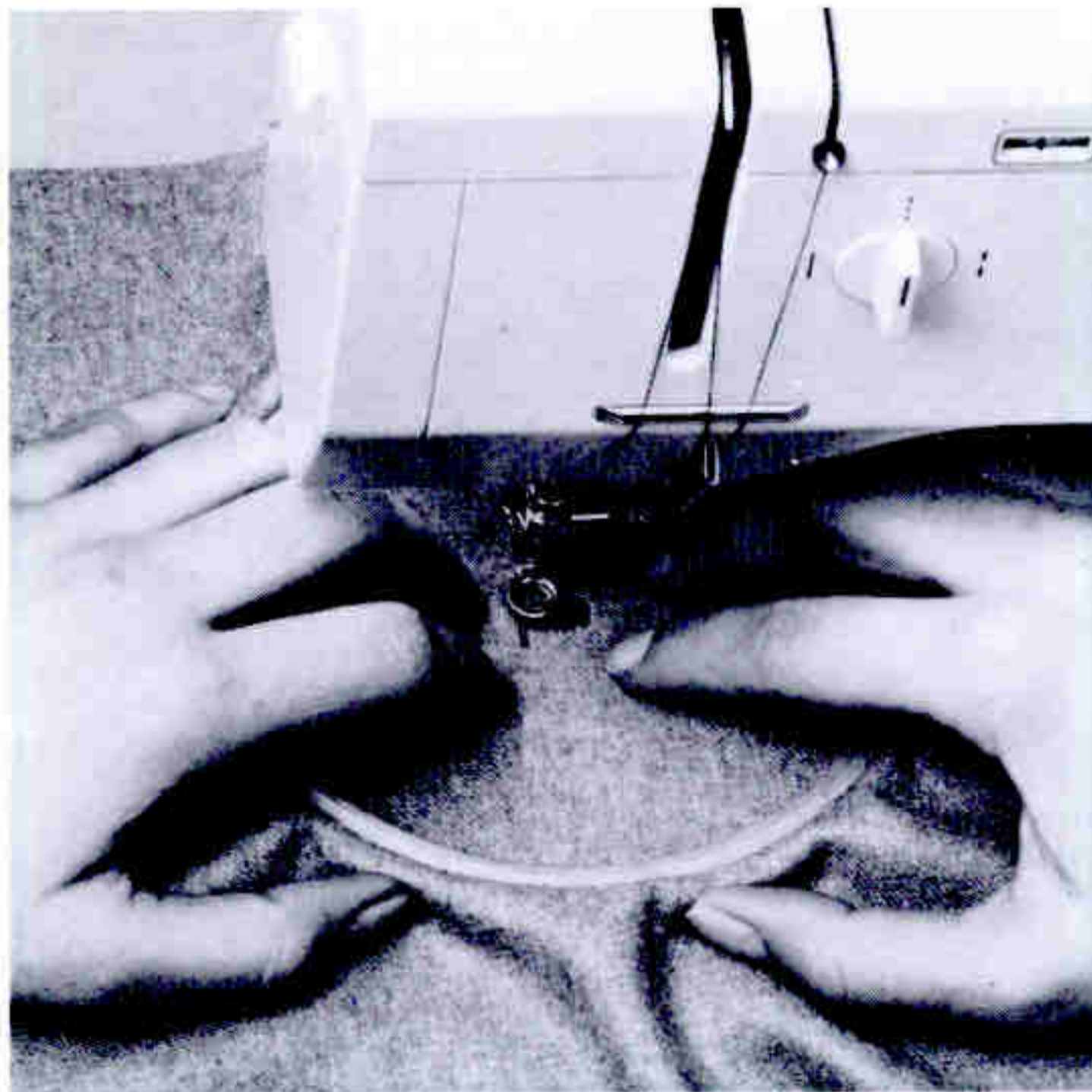
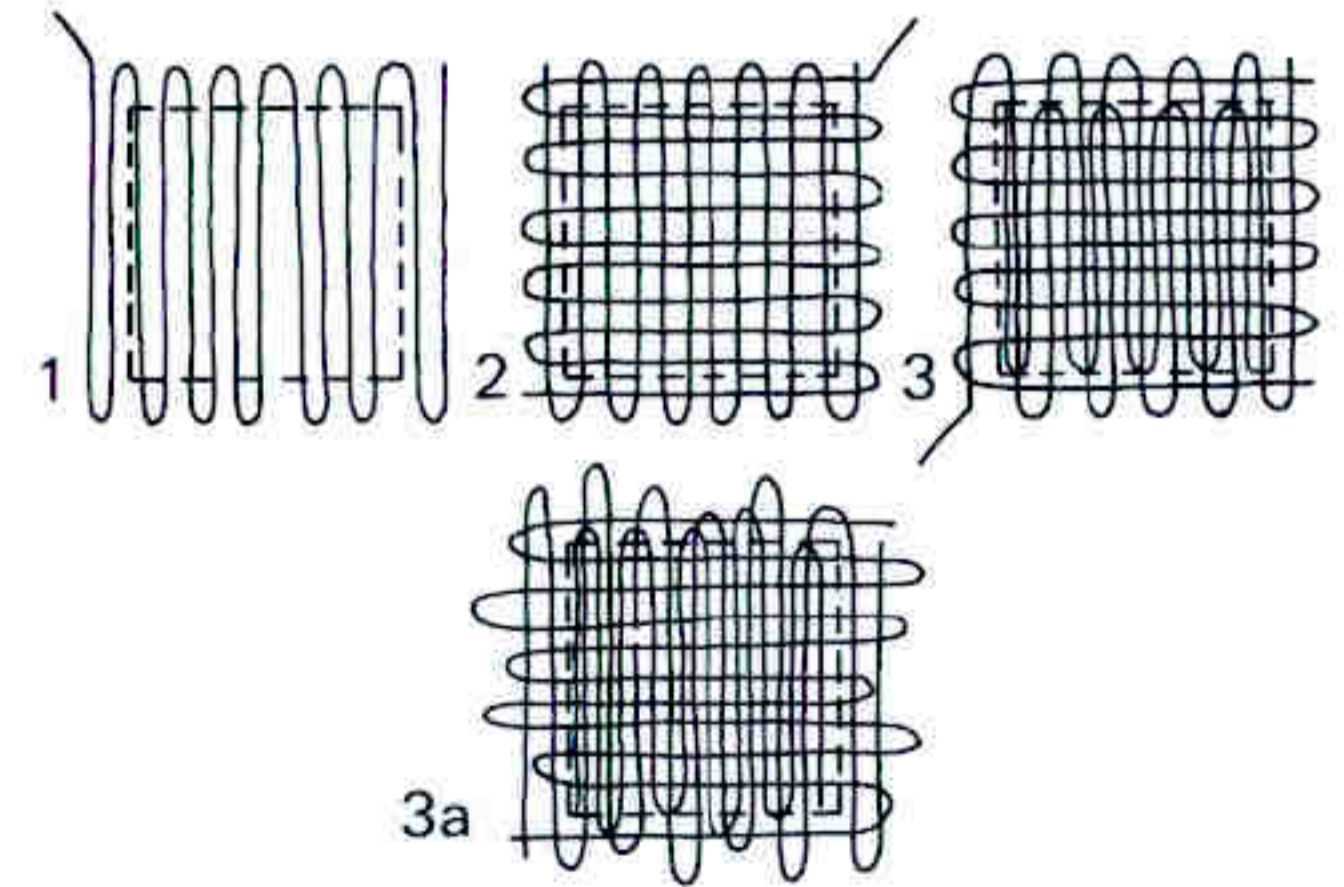
1. Stretch work in darning ring. Bring up bottom thread at top left corner of hole. Moving ring up and down cover hole with first rows of stitches (not too many stitches or the darn will be «hard»). Finish at top right.
2. Turn work and repeat from left to right so that 2nd rows of stitches are at right angle to first rows.
3. Fill in any gaps, stitching in the same direction as 2nd rows so that the stitches sink in. Always follow the grain and if the material surrounding the hole is worn thin vary the length of the rows to avoid strain.

Important: do not darn too sharply, but in curves, otherwise there is a danger of tearing. The l- or m-motion is particularly popular with beginners. Ensure that these do not result in a circular motion.



Main faults:

- Thread breaks frequently:
- work guided **irregularly** or too quickly.
- Small knots form on the underside:
- work moved **too slowly** or machine running too fast.



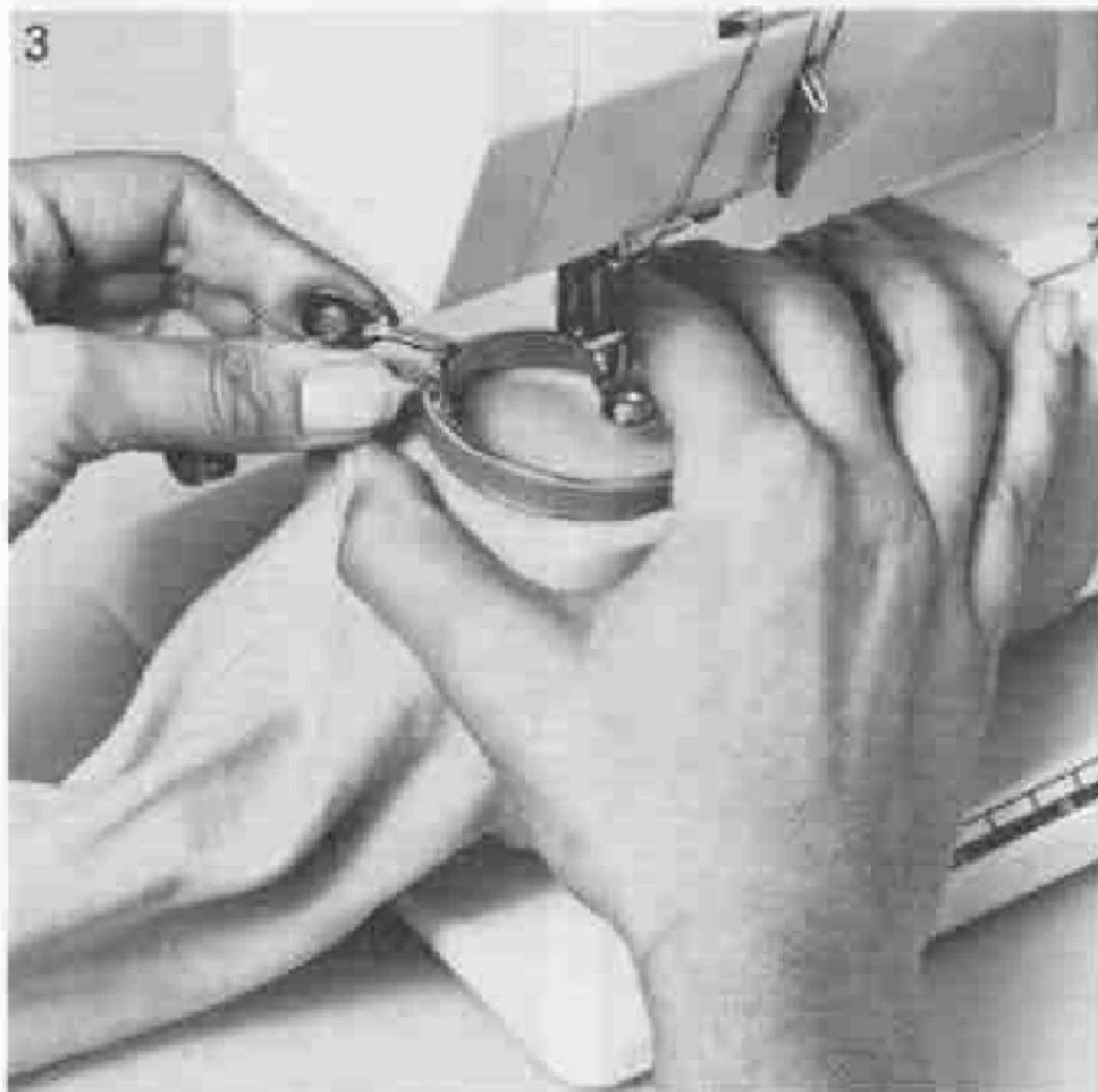
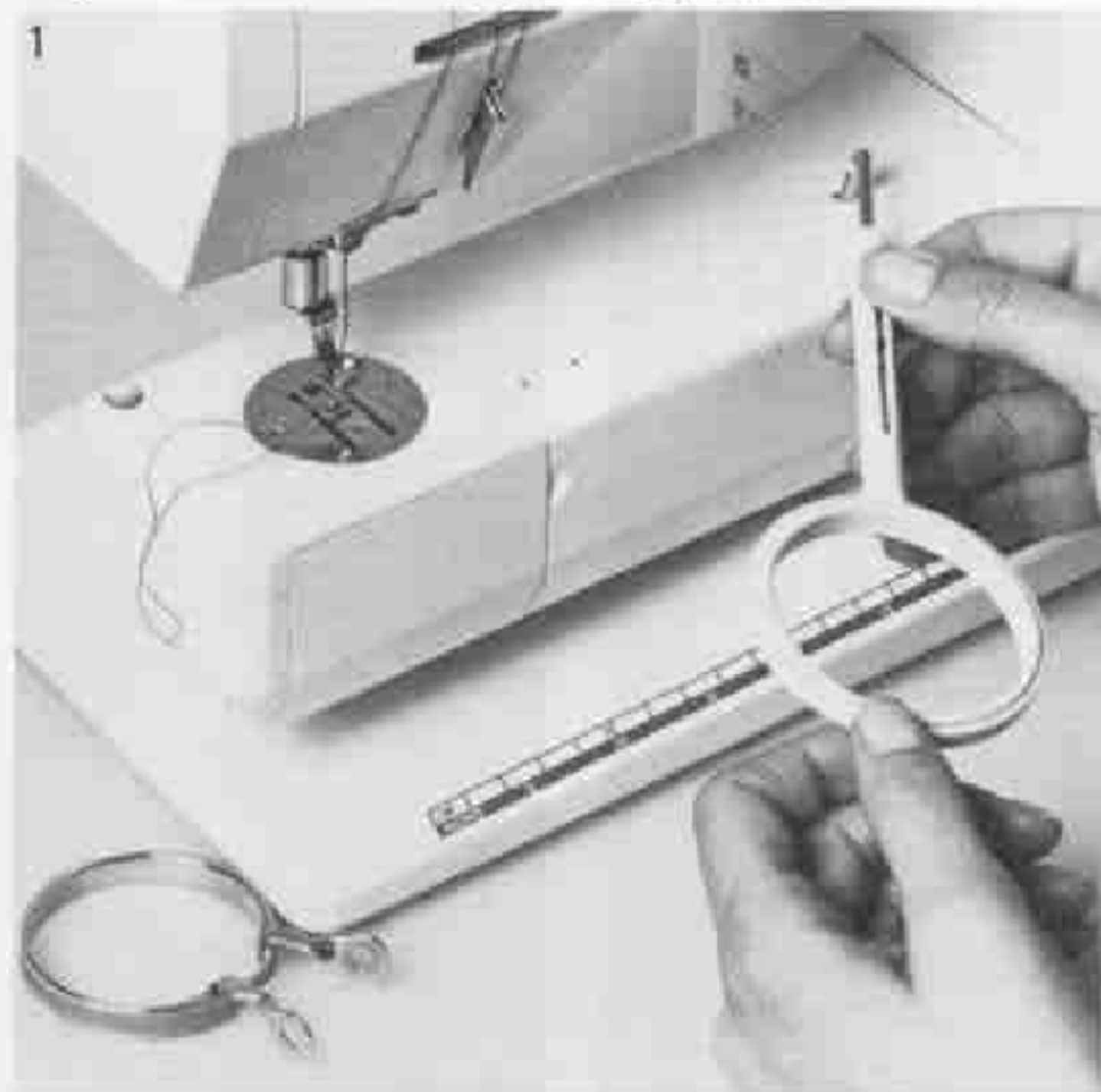
The small darning ring

The small darning ring is particularly useful for darning small holes in work that will not easily fit into a large ring, such as socks, sleeves, trouser legs, etc., or where you wish to use the free-arm.

Stretching the work

- Place darning ring without spring clip on free-arm (Fig. 1)
- Pull material evenly over free-arm and darning ring

- Stretch darning ring fully to left
- Place index finger and thumb of right hand around the small darning ring (Fig. 2)



- With the left hand stretch darning material to extreme point of free-arm. The tension produced in this way is held with the thumb of the right hand.

- Insert the spring clip as follows with the left hand: close spring clip, insert under the index finger of the right hand and **hold firmly** (Fig. 3). Only then press spring clip fully into darning ring.

Darning technique

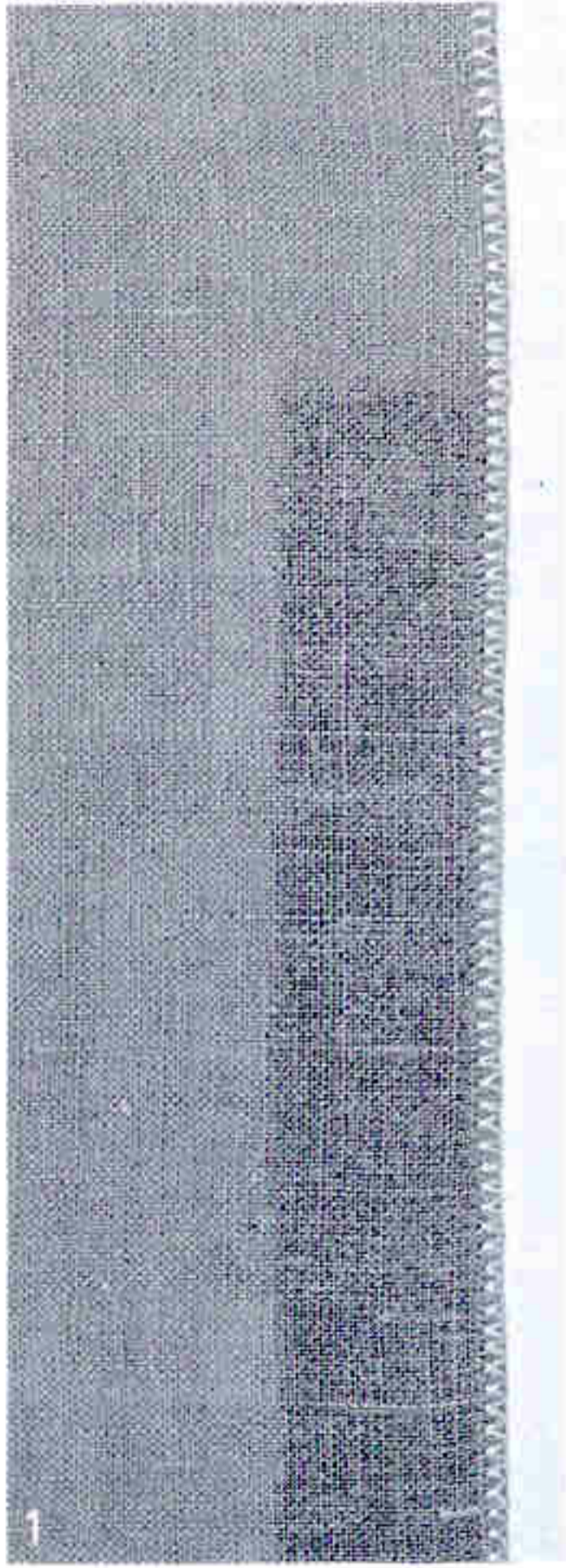
When the work is stretched in the small darning ring over the free-arm sew the 1st run lengthwise and the 2nd run widthwise, since the work cannot be turned.

Edgings on Woven Material

Fine edge finishing
For frills, scarves (neckerchiefs), serviettes, etc.

Presser foot:	000
Thread:	darning thread
Needle:	80-70
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	1½-2
Stitch length:	½ approx.
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Press turnings of approx. 1 cm to wrong side. Sew zig-zag over this pressed edge. Guide pressed edge to centre of foot as for oversewing. Then cut off remaining material on back against zig-zag stitches (Fig. 1).



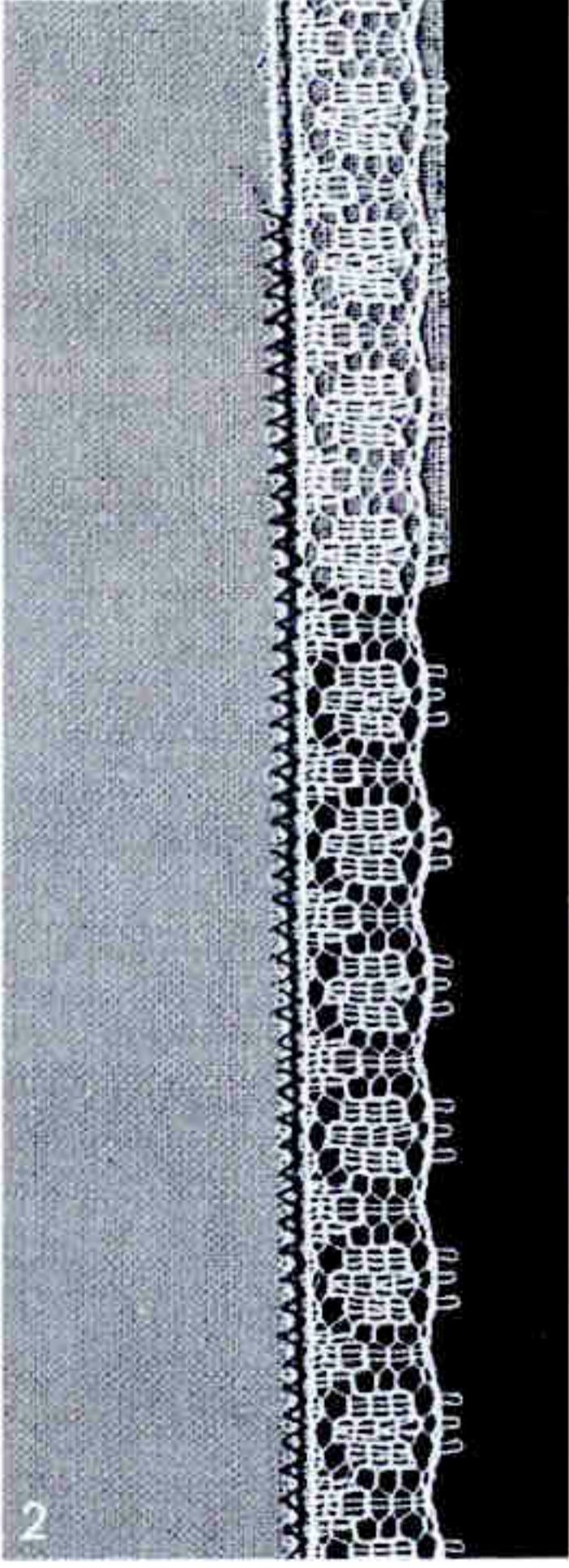
Lace and insertions on woven material

Presser foot:	000
Thread:	darning thread
Needle:	80-70
Stitch selection:	selector lever 0 changeover lever 0
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

1st operation
Stitch width: 0
Stitch length: approx. 1
Pin on lace, baste and sew on with straight stitch.

2nd operation
Stitch width: 1½-2½ (depending on lace)
Stitch length: ¼-½ (depending on lace)

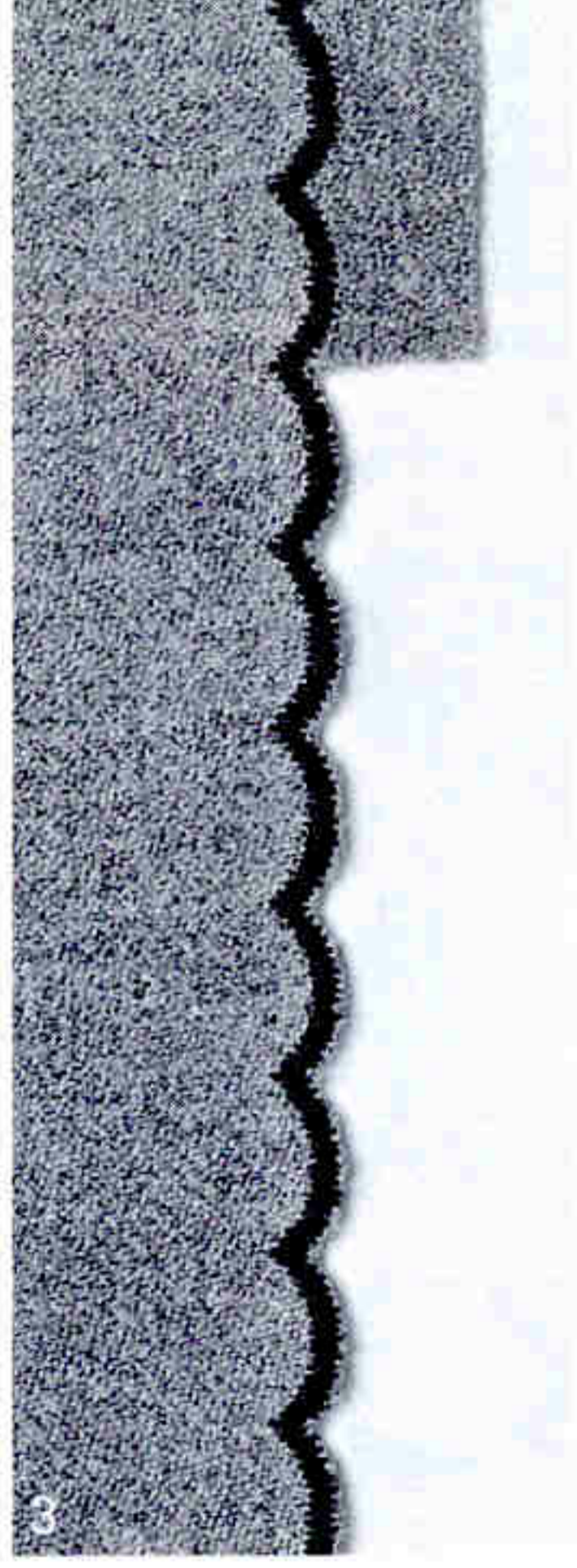
Press raw edge under. Oversew edge of lace with zig-zag on right side. Cut off remaining material on back against zig-zag stitches (Fig. 2).



Scallop edging
For collars, cuffs, neckerchiefs, frills, tablecloths, serviettes, lining hems, etc.

Presser foot:	030
Thread:	embroidery thread No. 30
Needle:	80-70
Stitch selection:	selector lever 9 changeover lever 1-20
Stitch width:	4
Stitch length:	almost 0
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Mark desired line and place paper underneath. Sew scallop, remove paper and cut round scallop (Fig. 3).

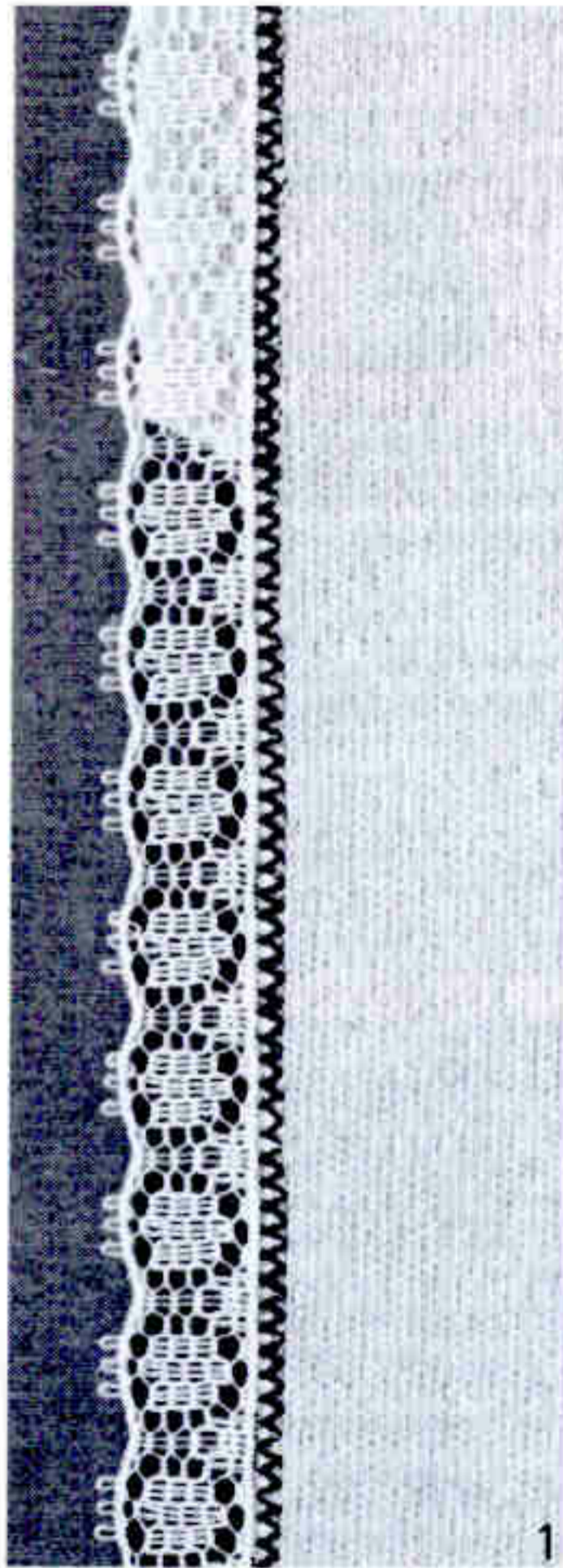


Edgings on Jersey

Lace on jersey

Presser foot:	000
Thread:	darning thread
Needle:	80-70
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	1½-2
Stitch length:	½ approx.
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Pin on lace, baste with short basting device stitches, sew on with zig-zag over edge of lace. Cut off remaining jersey on back against zig-zag stitches (Fig. 1).

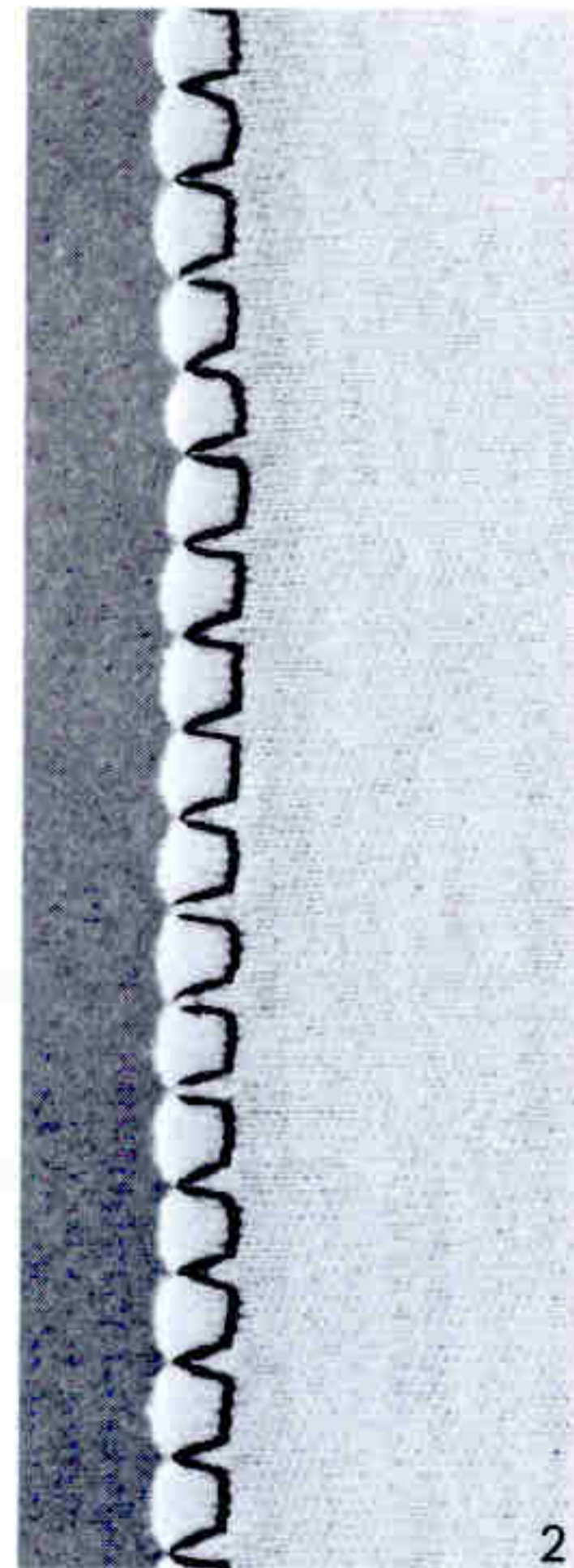


Shell edging

Specially for fine materials and jerseys

Presser foot:	000
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 2 changeover lever 1-20
Stitch width:	4
Stitch length:	1
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Place material under presser foot so that the edge for the shell edging is on the **left**. The needle on its left swing should just go over the edge (Fig. 2).



Elastic

Specially for sports- and other underwear

Presser foot:	000
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 3 changeover lever 1-20
Stitch width:	3
Stitch length:	1
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

It is easier to gather jersey first: sew long straight stitches – then pull lower thread and gather jersey to the necessary width.

Pin on elastic and sew in place. Cut off surplus on back (Fig. 3). Remove gathering thread. Elastic must **not** be stretched during sewing.



Tailor Tacking

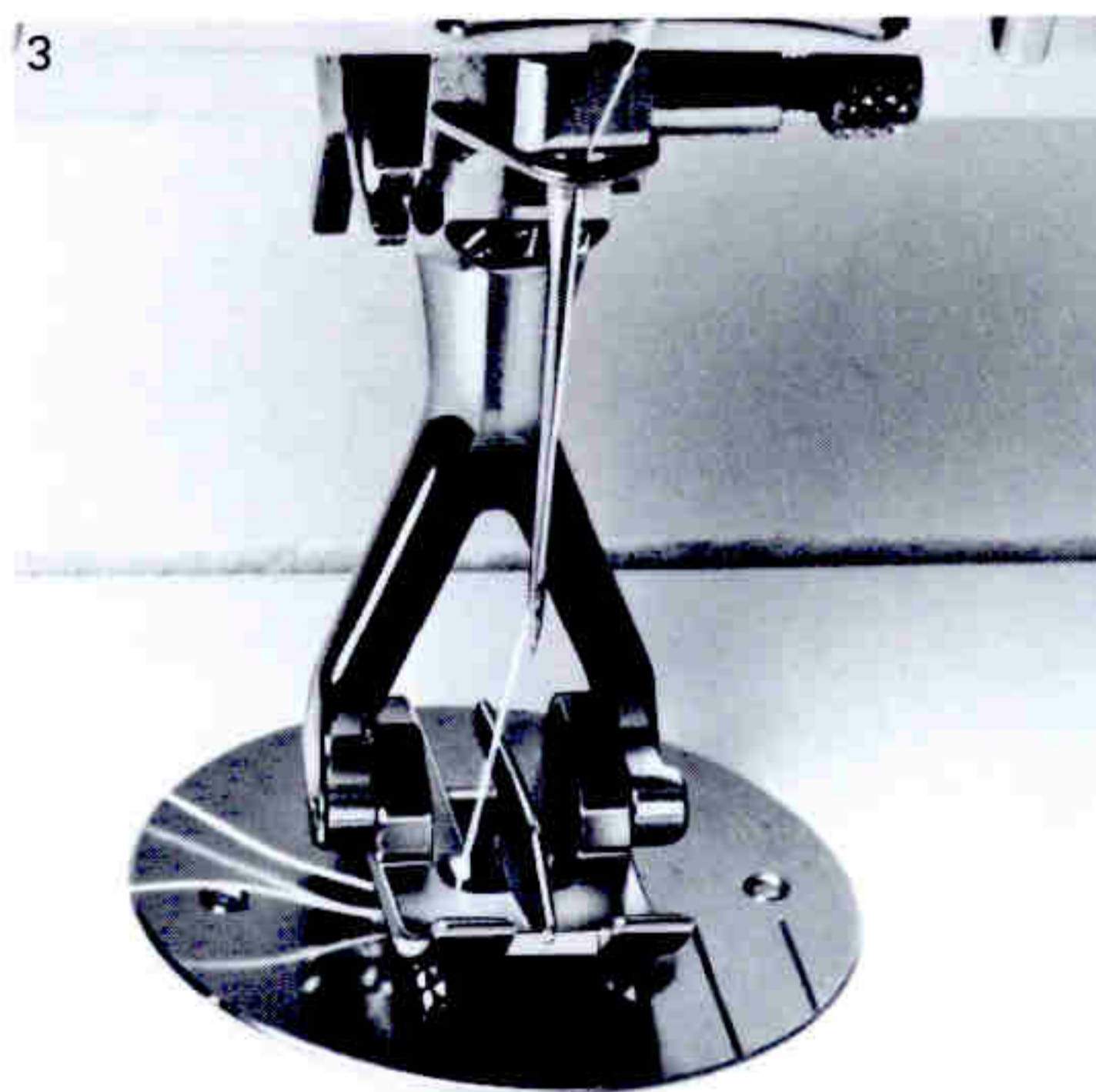
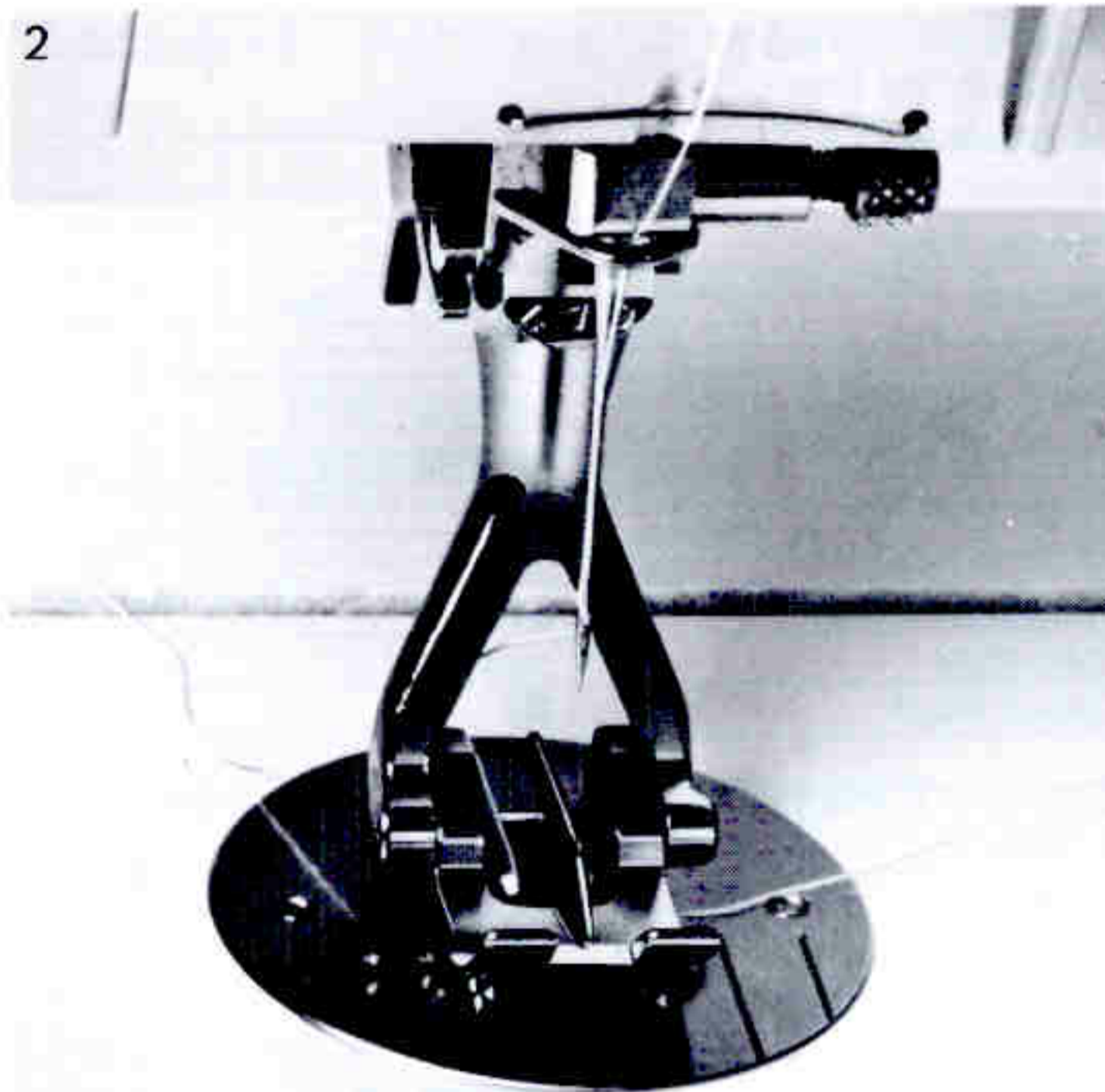
Patterns can be transferred in a simple way onto the fabric with the aid of the tailor tacking foot.

Presser foot:	419
Thread:	sewing thread
Needle:	80 (70 / 90)
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	2
Stitch length:	4
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Preparation:

1. First set stitch width. Check that the needle is at its highest position, **only then** attach presser foot.
2. Loosen upper thread tension (Fig. 1) so that loose loops can form. (Reset thread tension to normal after tailor tacking.)
3. Take the top thread through to the back of the foot (Fig. 2). Before starting to sew, place both ends under the foot to the left (Fig. 3).

The first few stitches should be **sewn slowly**.



Tailor tacking with darning thread (in thin materials)

Needle: 70

Tailor tacking with sewing thread

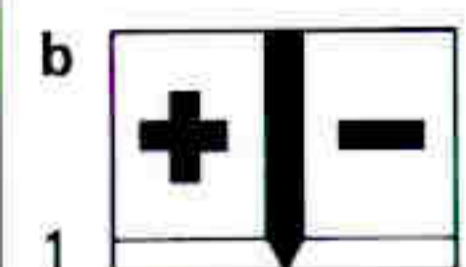
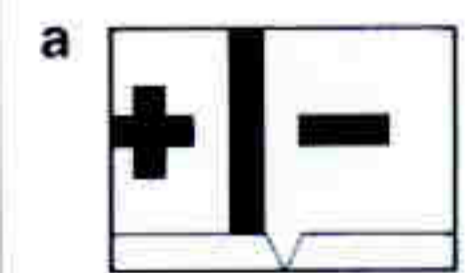
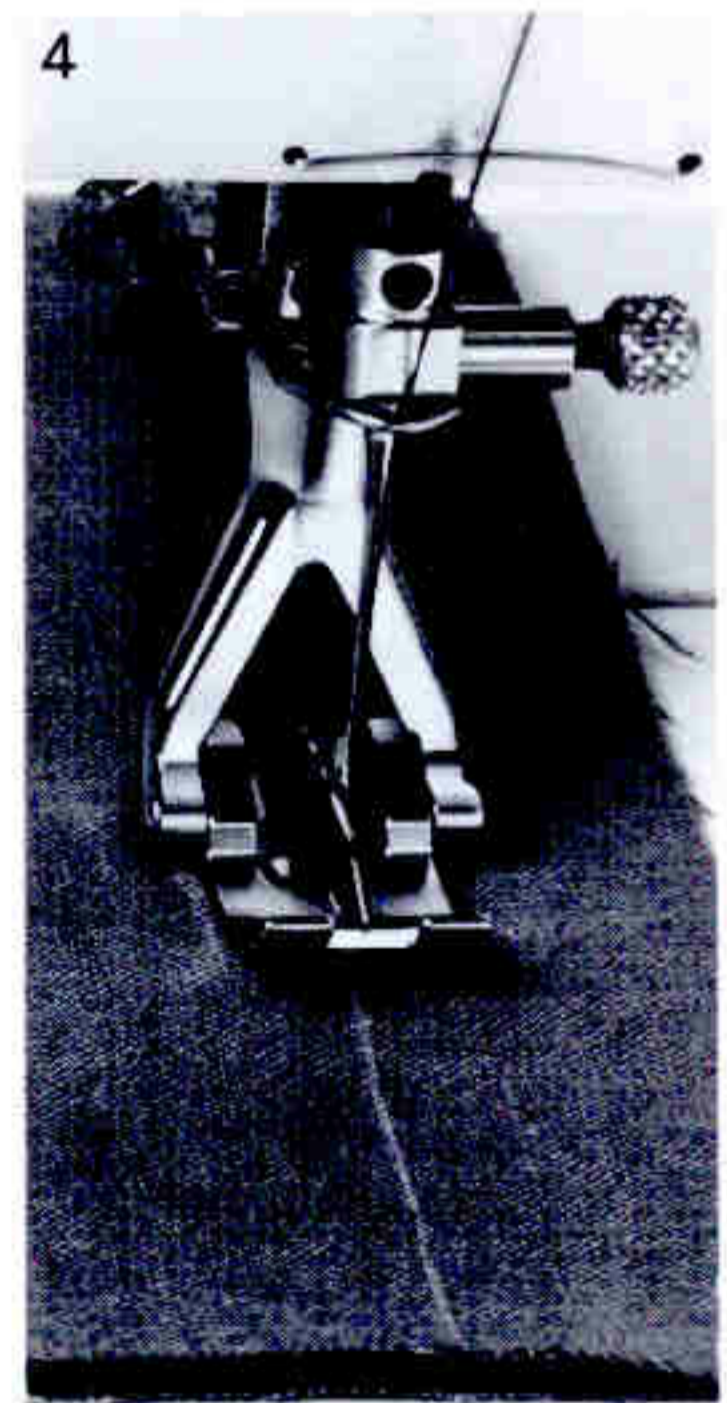
Needle: 80

Tailor tacking with basting thread (particularly in woollen fabrics)

Needle: possibly 90

Basting thread **only** top; normal thread below

First chalk mark the lines on to one side of fabric. Remove pattern, pin the two layers of fabric firmly and tailor tack along chalk line (Fig. 4).

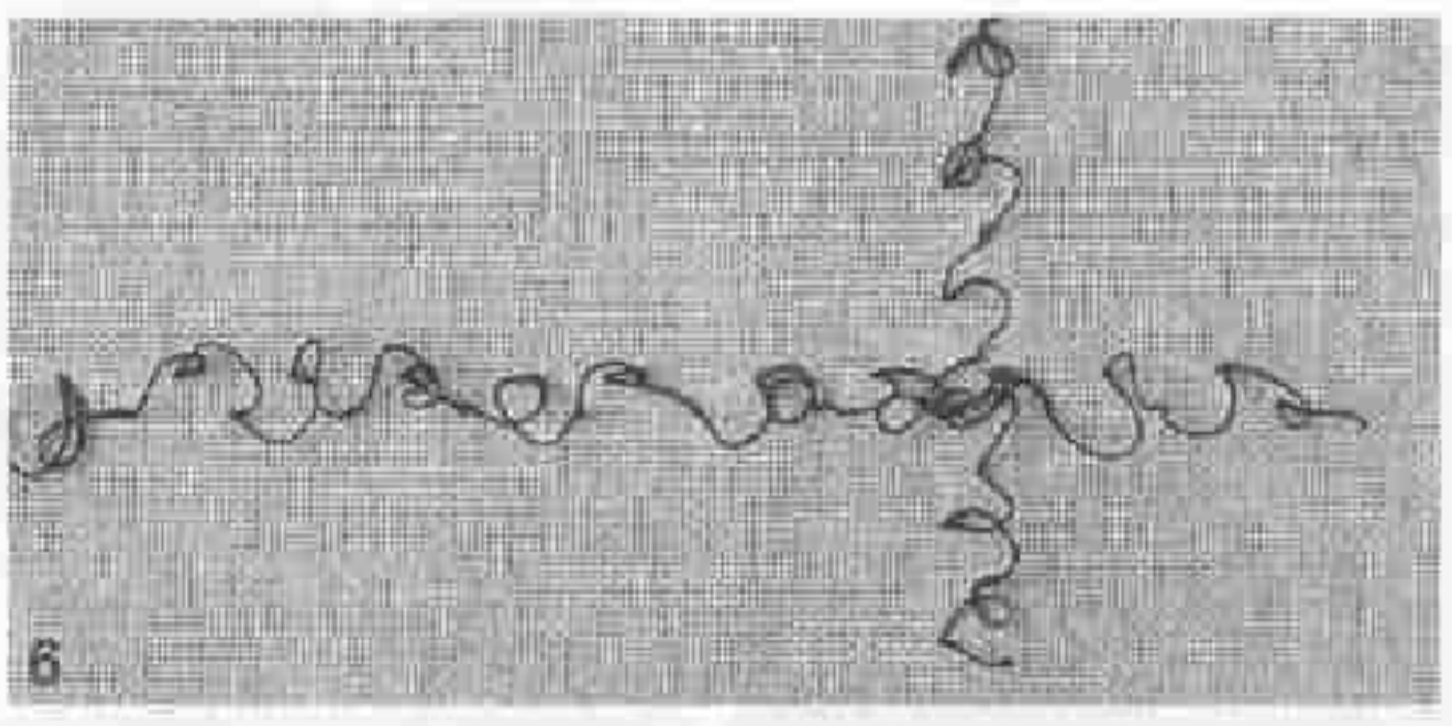




Long seams need not be tacked for the whole length. Sew a few tacking stitches, raise tacking foot, draw material about 5 cm along, sew a few more stitches, etc. (Fig. 8 left). Cut through the long intermediate stitches on both sides before cutting open (Fig. 8 right).

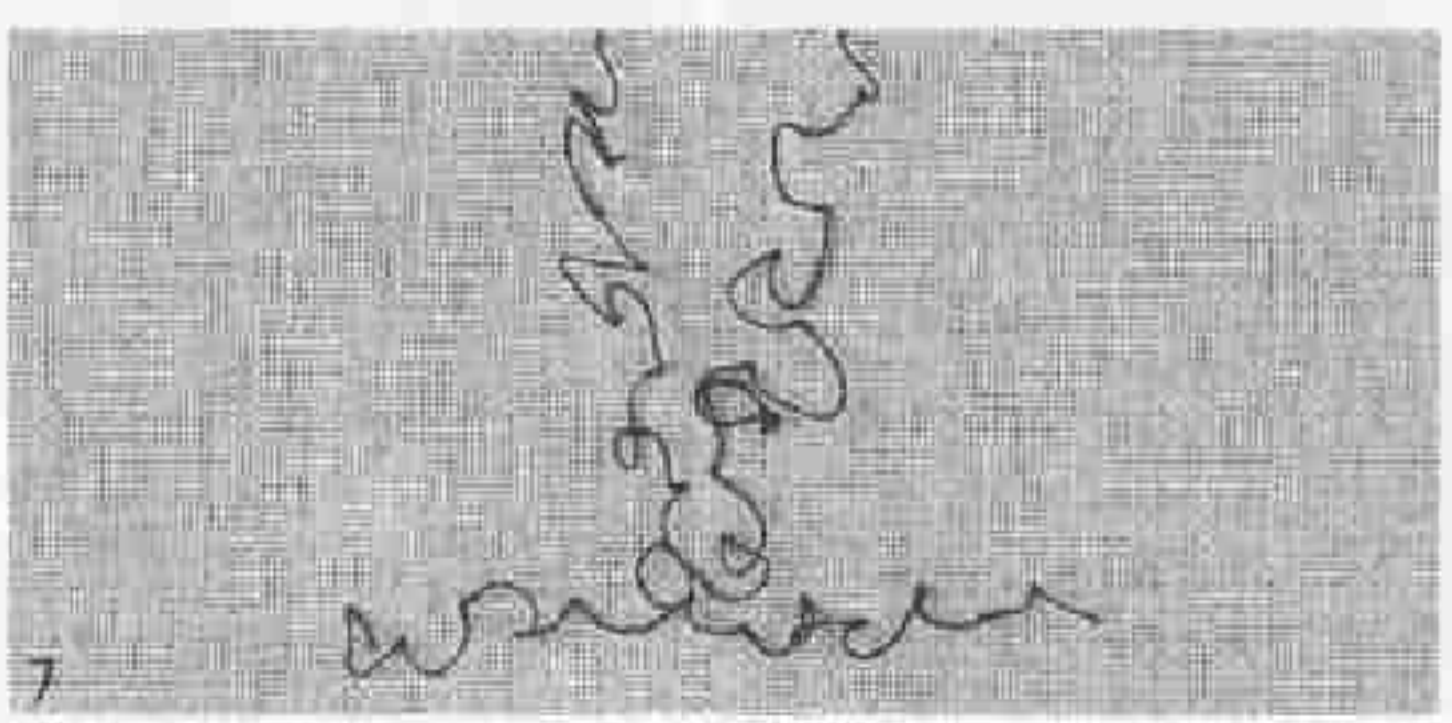
5

The two layers of material are then pulled apart and the threads cut through (Fig. 5). After cutting, the lower thread is cut through several times on the back.



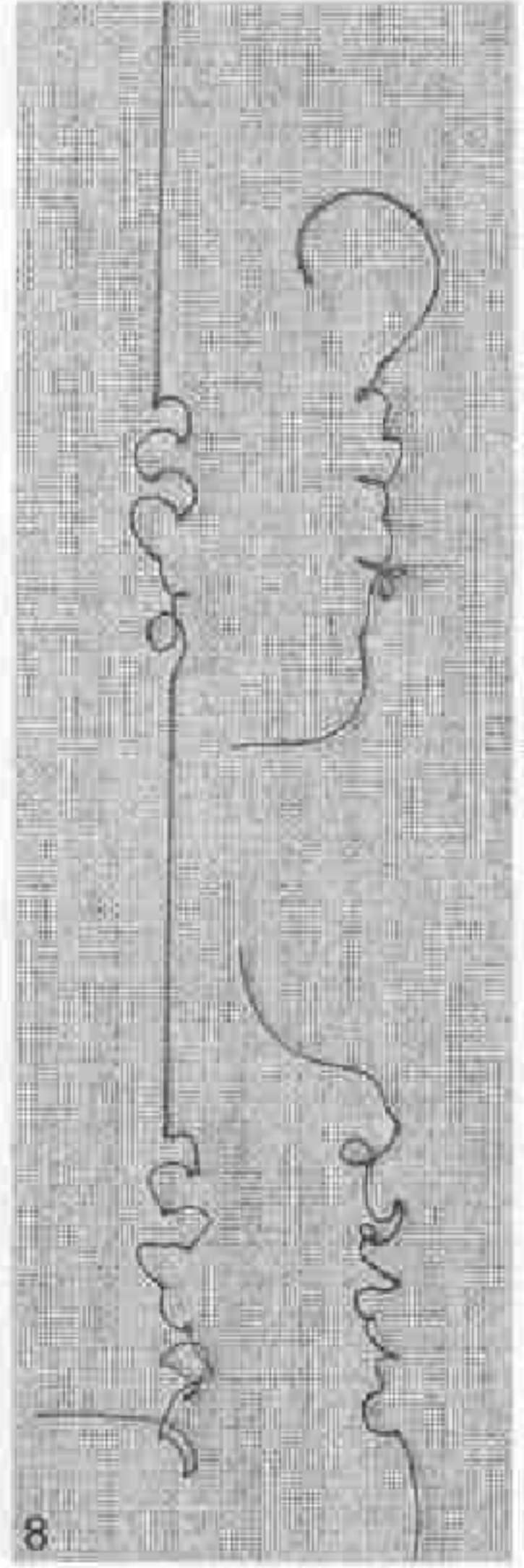
6

How to tack the corners ... (Fig. 6)

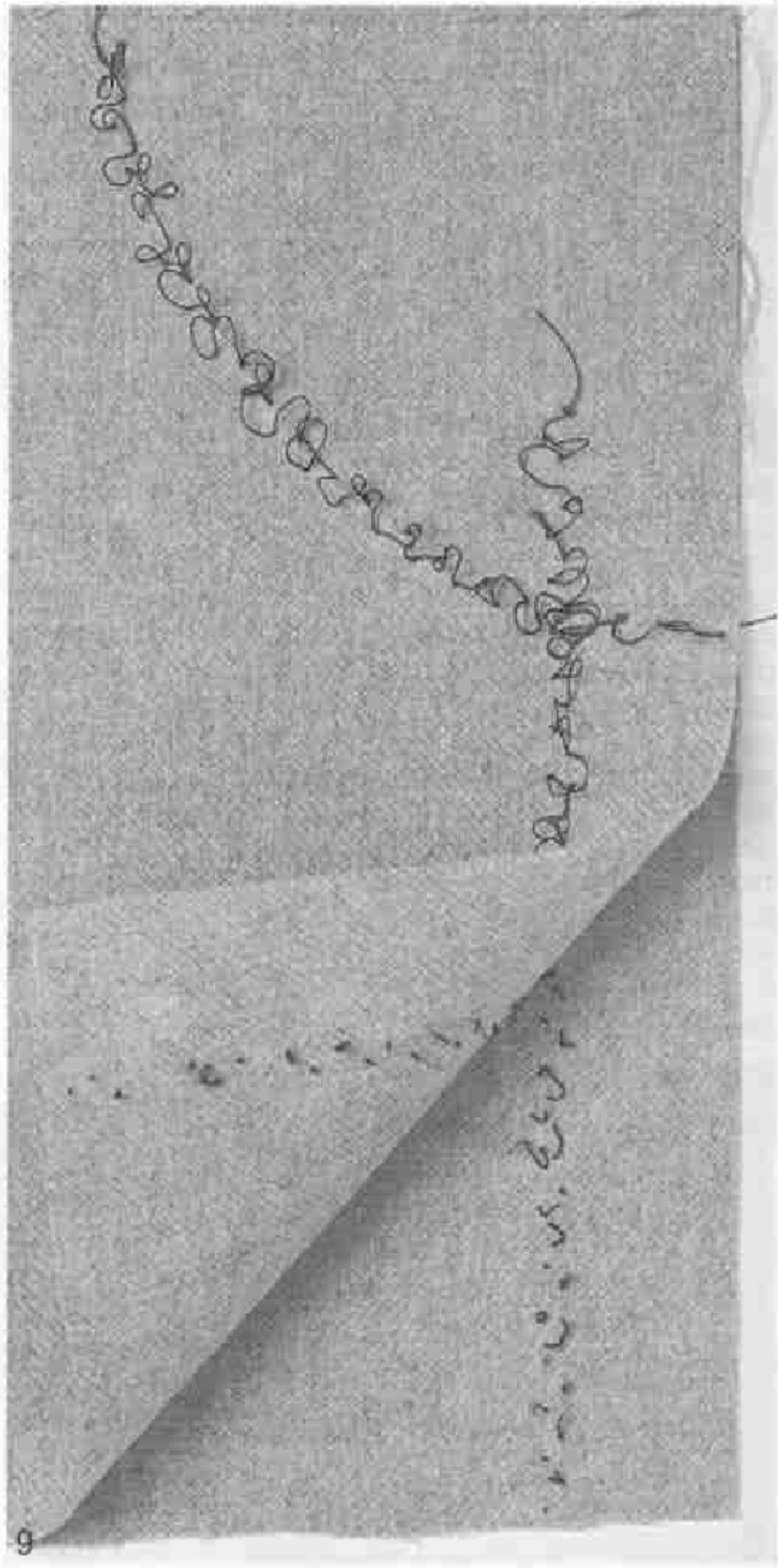


7

and the darts (Fig. 7)



8



9

Gathering

Gathering with cord

Long pieces of material

Presser foot:	452
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 6 changeover lever 1-20
Stitch width:	4
Stitch length:	1-2
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Both gathering rows can be sewn in one operation.

Procedure:

Check whether needle comes to the centre of presser foot. Place material, wrong side up, under the foot, lower the needle, but do not lower foot yet.

Take cord (2 × length of fabric piece + 20 cm) in the middle, place over middle stem of buttonhole foot and hold to the back as for buttonhole.

Lower presser foot. Lift thread loop from presser foot (Fig. 1) and pull thread forwards until the ends of the thread only project about 10 cm at rear. Then sew. The thread runs in the two grooves of the buttonhole foot and is oversewn. Finally, hold both threads and gather the material (Fig. 2).

Normal gathering

Use presser foot 000. Small pieces or very thin fabrics can be gathered as follows:

Stitch width:	0
Stitch length:	4

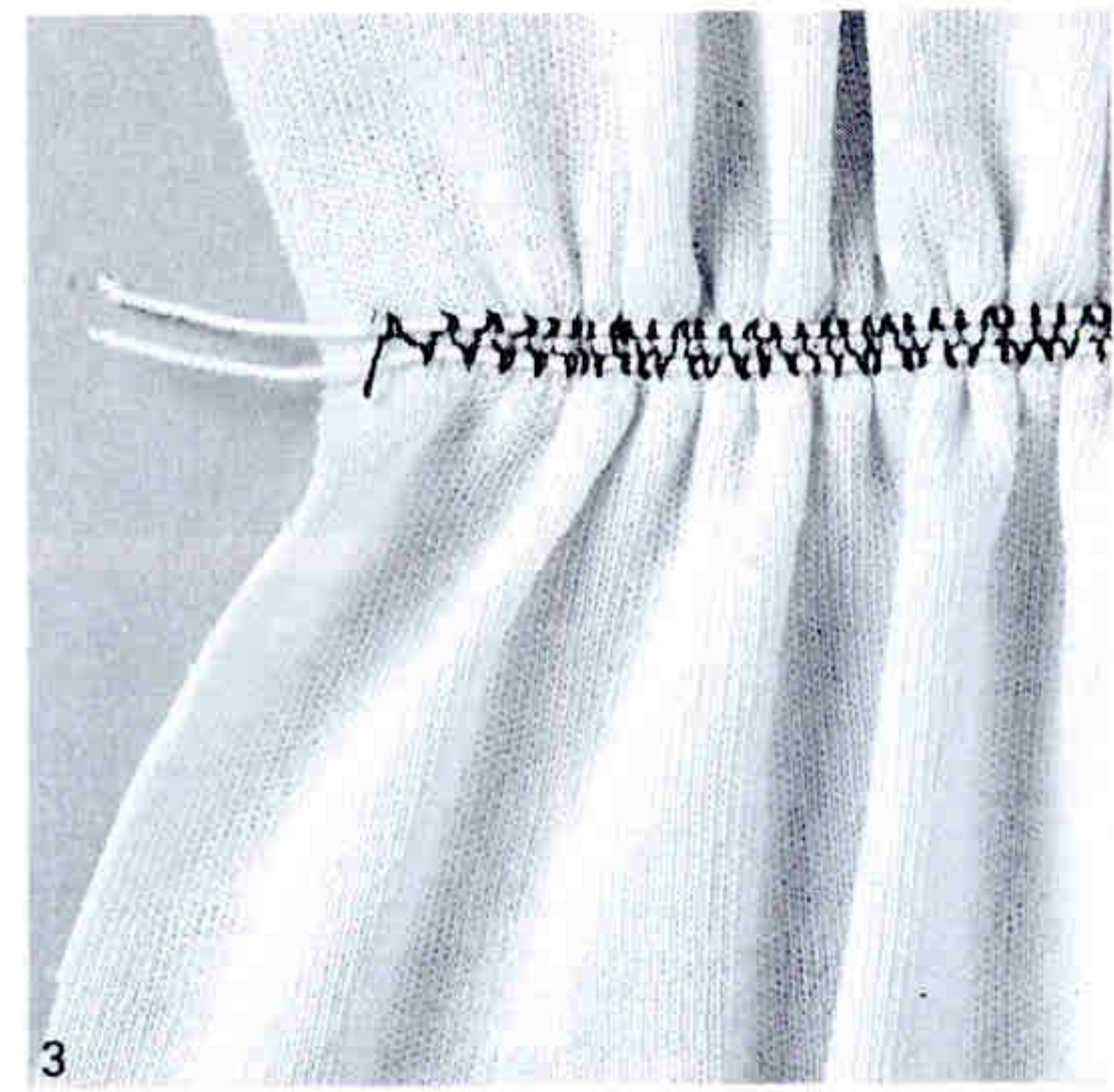
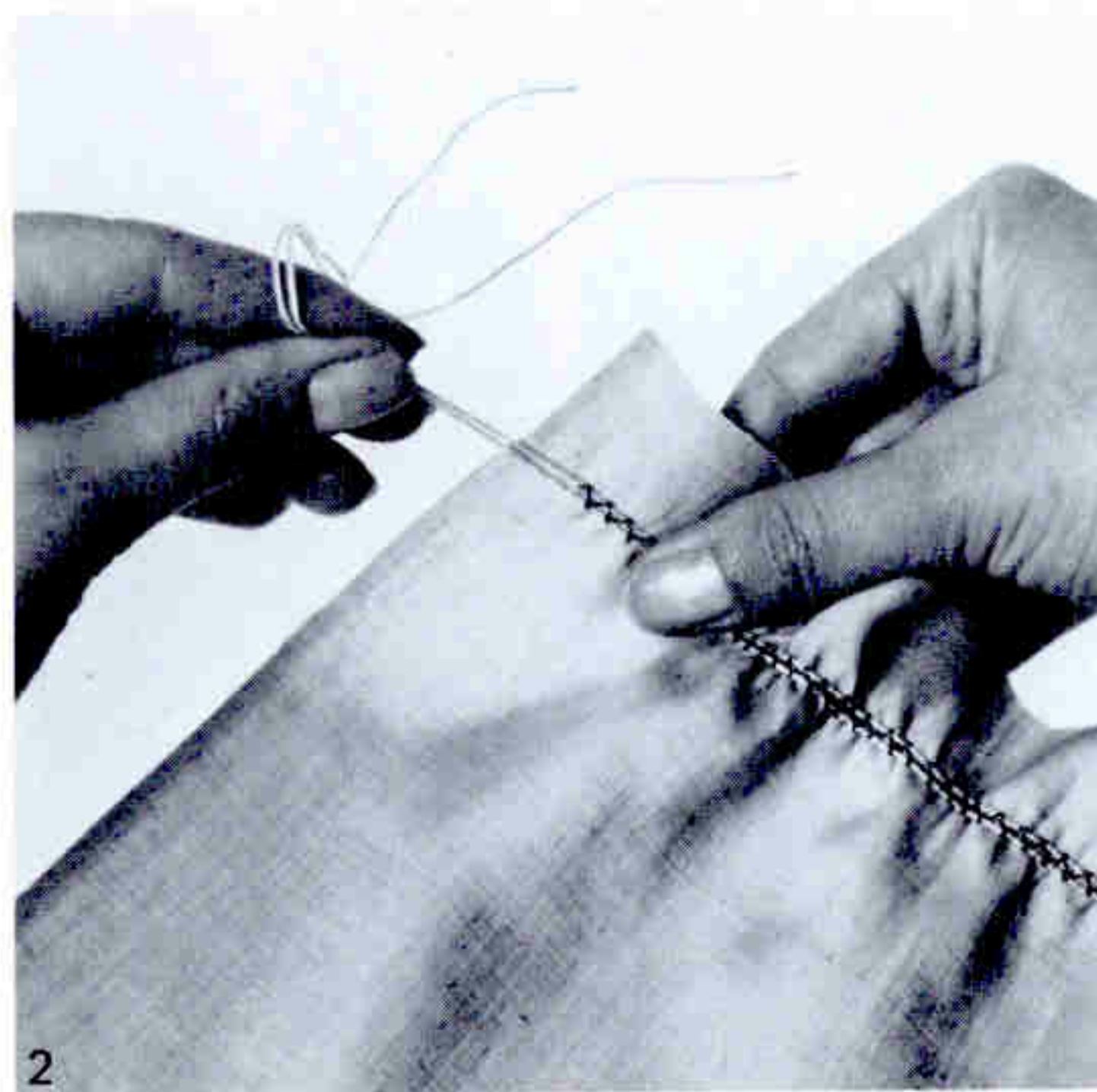
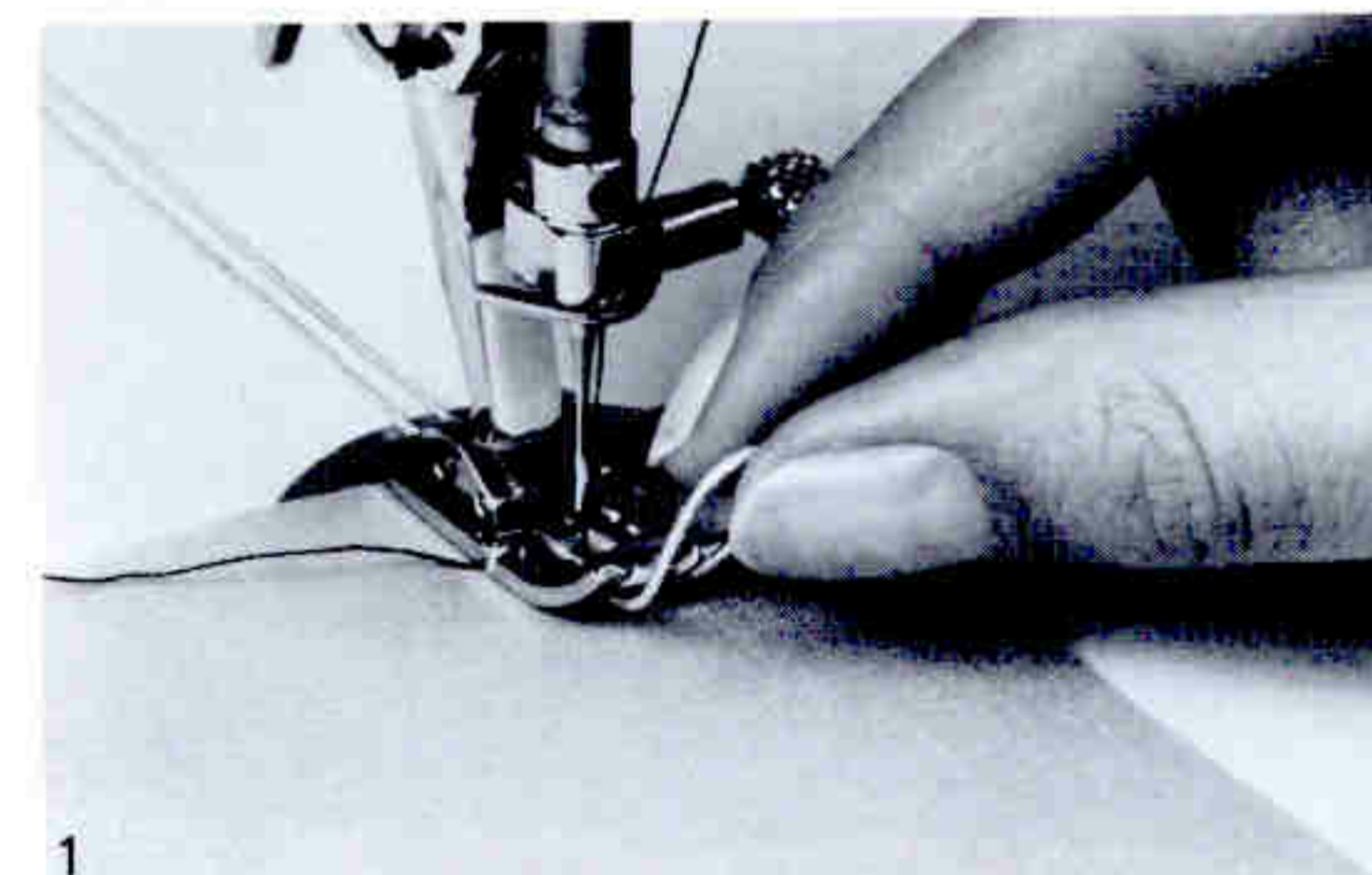
Sew two parallel lines of straight stitches. Then hold the two lower threads and gather the material to the desired width.

Gathering with elastic thread

Presser foot:	452
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 6 changeover lever 1-20
Stitch width:	4
Stitch length:	1½-2
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

The procedure with elastic thread is the same as with cord, except that the elastic thread is pulled tight **during sewing**. The amount it is pulled depends on the desired amount of gather (Fig. 3).

Sew a trial piece.



Monograms

The following data apply to «freehand» monograms

Presser foot:	– (possibly 285)
Thread:	darning-/ embroidery 30
Needle:	80
Stitch selection:	1
Stitch width:	4–2
Stitch length:	0
Needle position:	centre
Feed-dog:	lowered
Colour mark:	●

Monograms can be embroidered in various ways. Full details can be found in Bernina Sewing Manual No. 16, which also contains patterns for alphabets of various sizes and scripts.

Work **without presser foot**. But: **still lower lever for lowering presser foot**, otherwise loose stitches will be produced. Always stretch material in the hoop. Lay paper under thin materials.

Those who are afraid at first to embroider without a presser foot can use the darning foot 285.

In most cases darning thread 30 is used. Embroidery thread is also suitable for large monograms, e.g. on towels.

Practice makes perfect

– Monograms are easier worked «freely» rather than trying to follow a marked line.

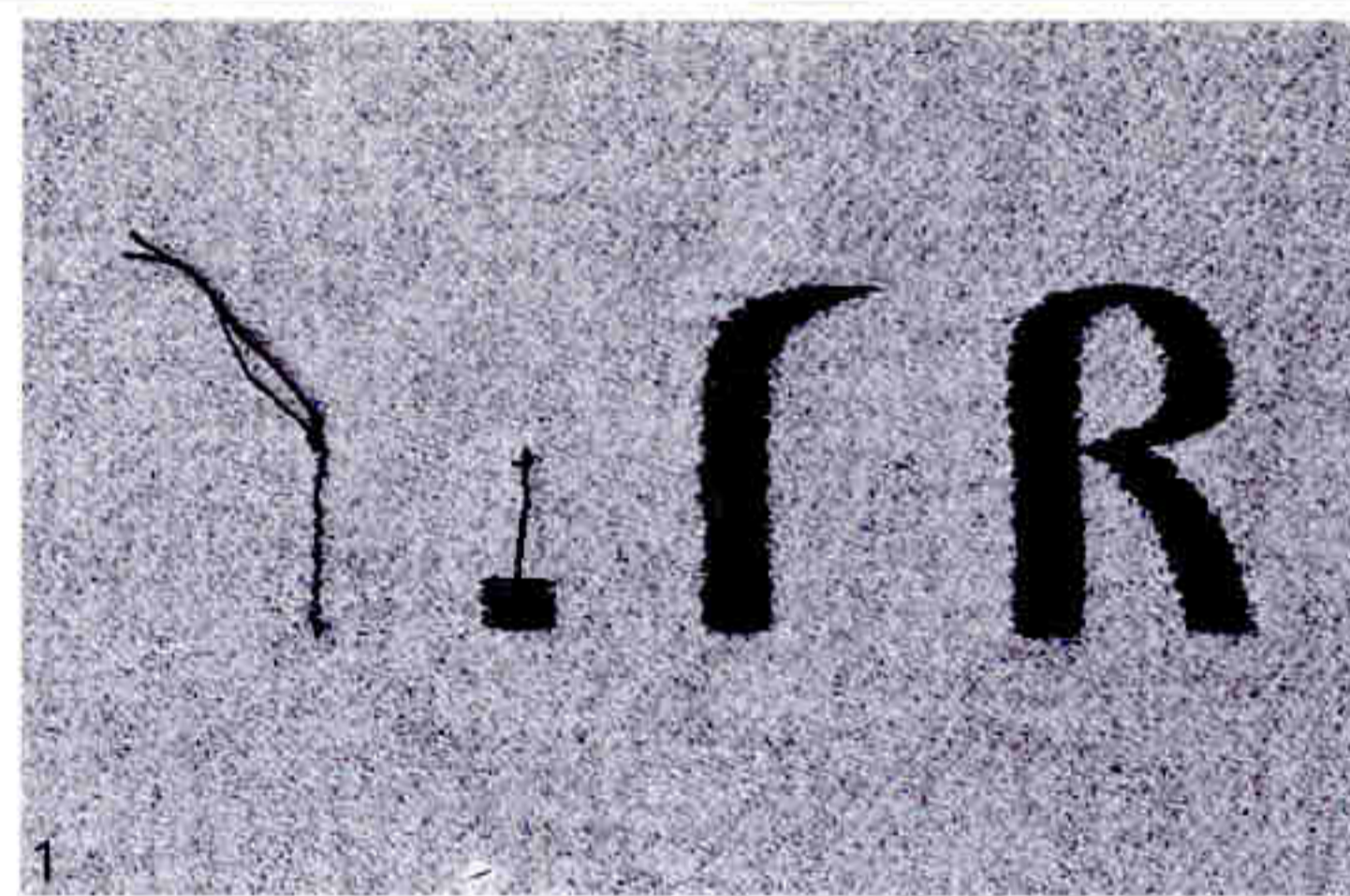
– Select stitch width 4 and do not sew letters larger than 2–3 cm.

Large monograms are more difficult as you must hold the hoop steady for longer.

– The letters R and B are particularly suitable for practising.

– Practice some pre-traced monograms later. The line traced should lie in the middle of the zig-zag stitch.

– Run machine at about three-quarters speed, but guide the frame **slowly**, regularly and smoothly!



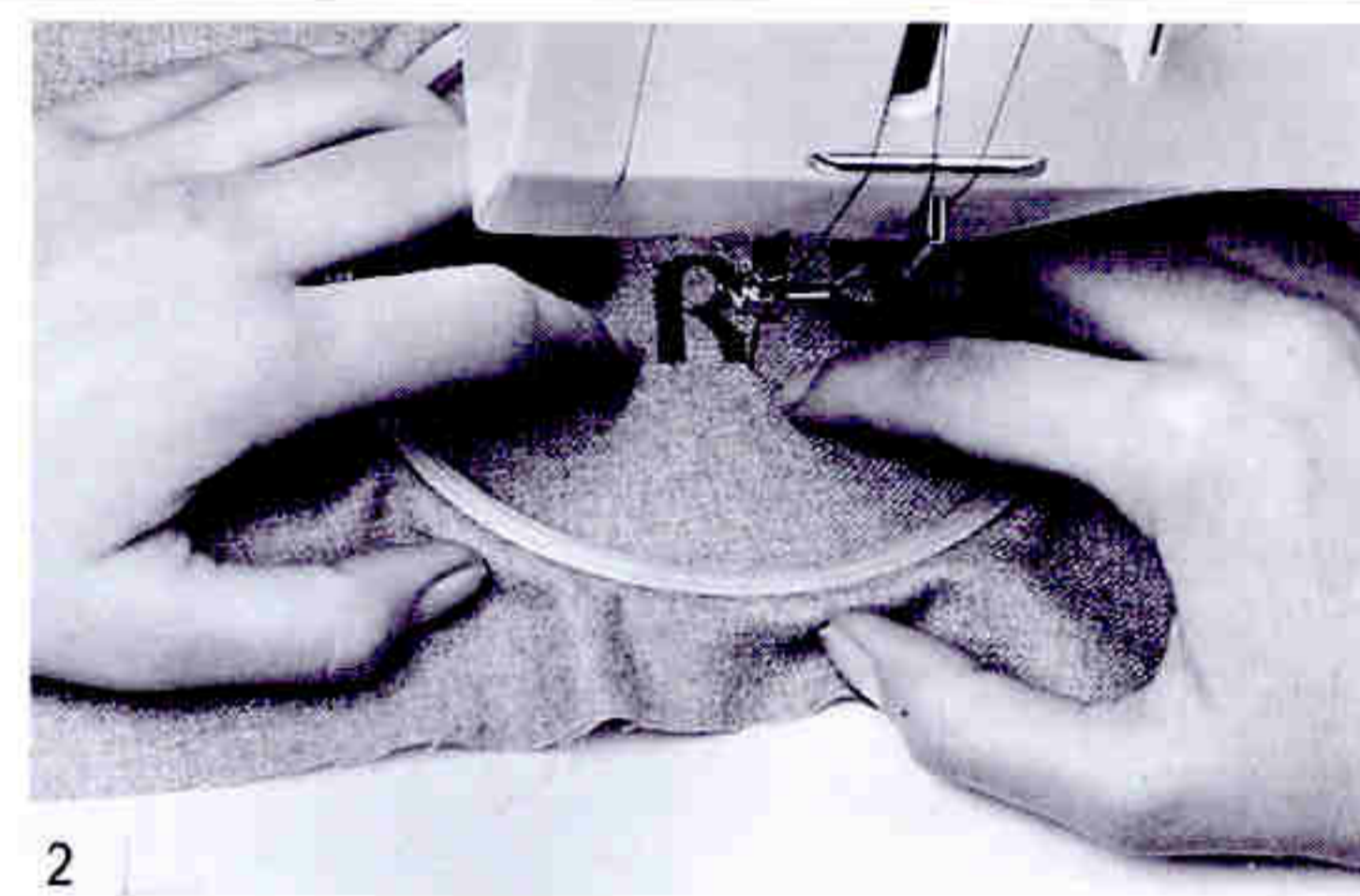
Procedure: (Fig. 1)

a) Bring up the lower thread through the material. Secure with a few straight stitches. Cut both thread ends.

b) Set zig-zag, sew 1–2 rest stitches with the aid of the hand-wheel, ensuring that straight stitches are covered by the zig-zag stitches.

c) Move frame outwards as though writing with it. **But do not twist it under any circumstances**, the narrow and wide sections are produced automatically. When the curved section begins, guide the frame along the curve without twisting it.

d) Finally secure with a few straight stitches.



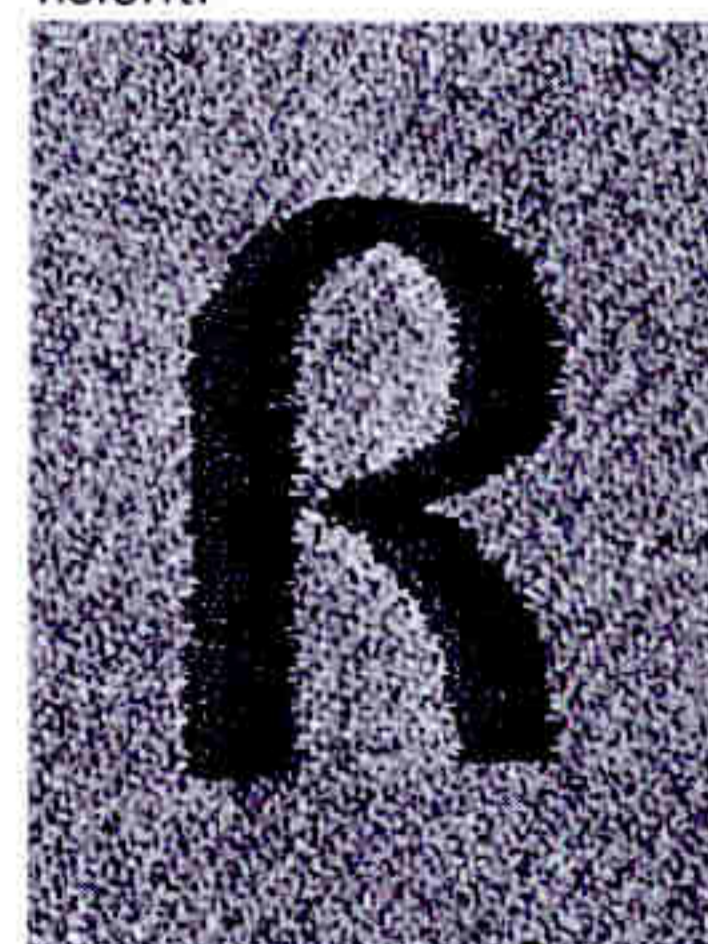
Guiding the embroidery frame

The stitching of an even monogram largely depends on the correct holding of the frame. Hold frame as when darning (Fig. 2). Too much pressure by the fingers on the material produces irregular, jerky movements and therefore uneven monograms.

Important:

Work as closely to the centre of the frame as possible, otherwise regular guiding is very difficult.

Note:
Small, thin letters are more difficult to embroider. Practice with larger letters at first until you have become proficient.



Appliqué

Appliqué is a method of embroidery for sewing on shapes and figures. It allows free reign to the imagination. There is a wide range of methods for sewing on the shapes. The basic technique is explained below.

Guiding the material

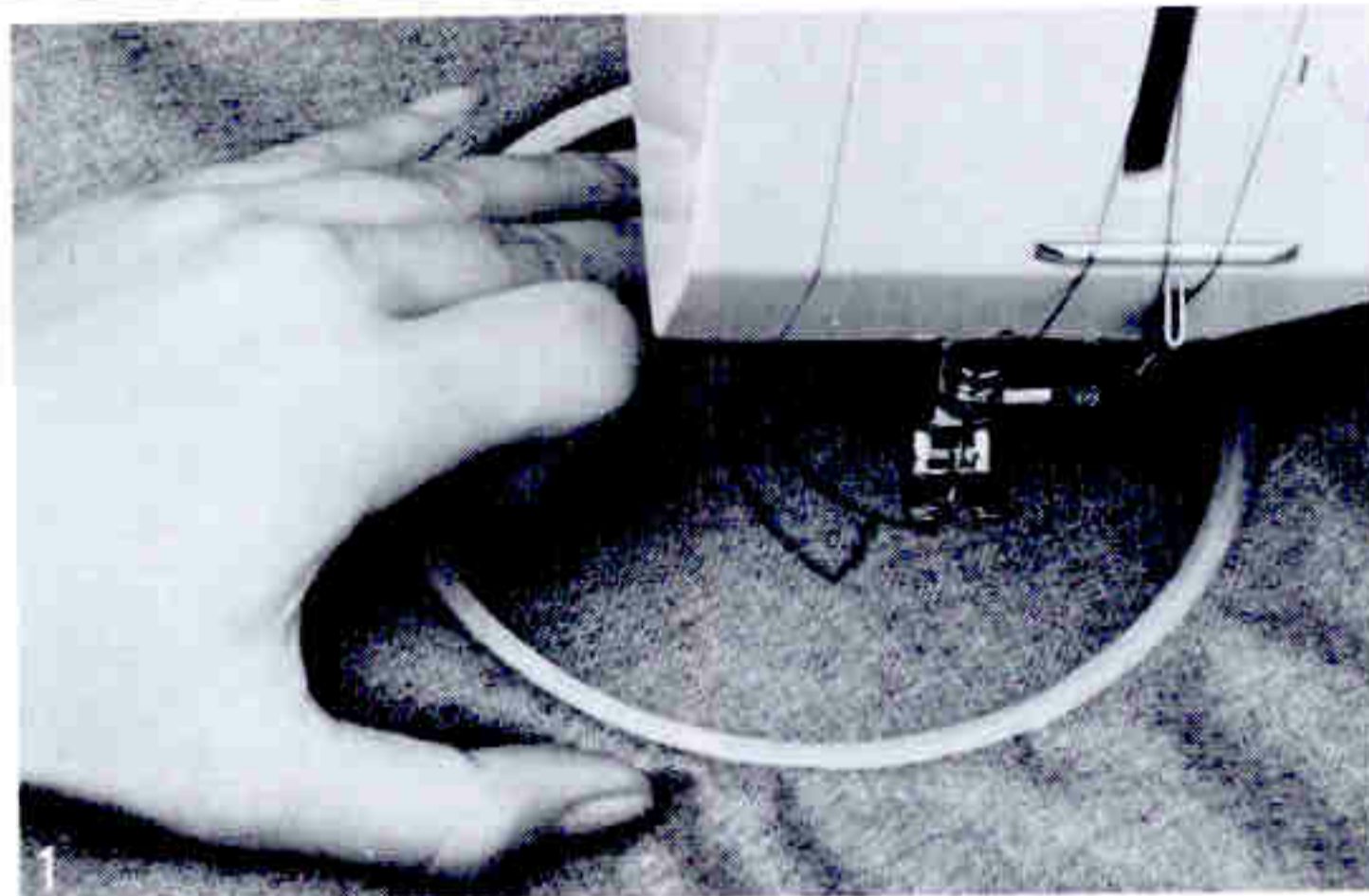
You can work with or without a frame, but stretched material can be guided more easily.

The most important basic principles:

- Guide the work by watching the needle in the slot of the presser foot.
- Stop machine when altering position of hands.
- To obtain a smooth curve guide material whilst sewing, stopping and turning will give a «ragged» effect.
- Exception: very small curves and corners.

Guiding with frame

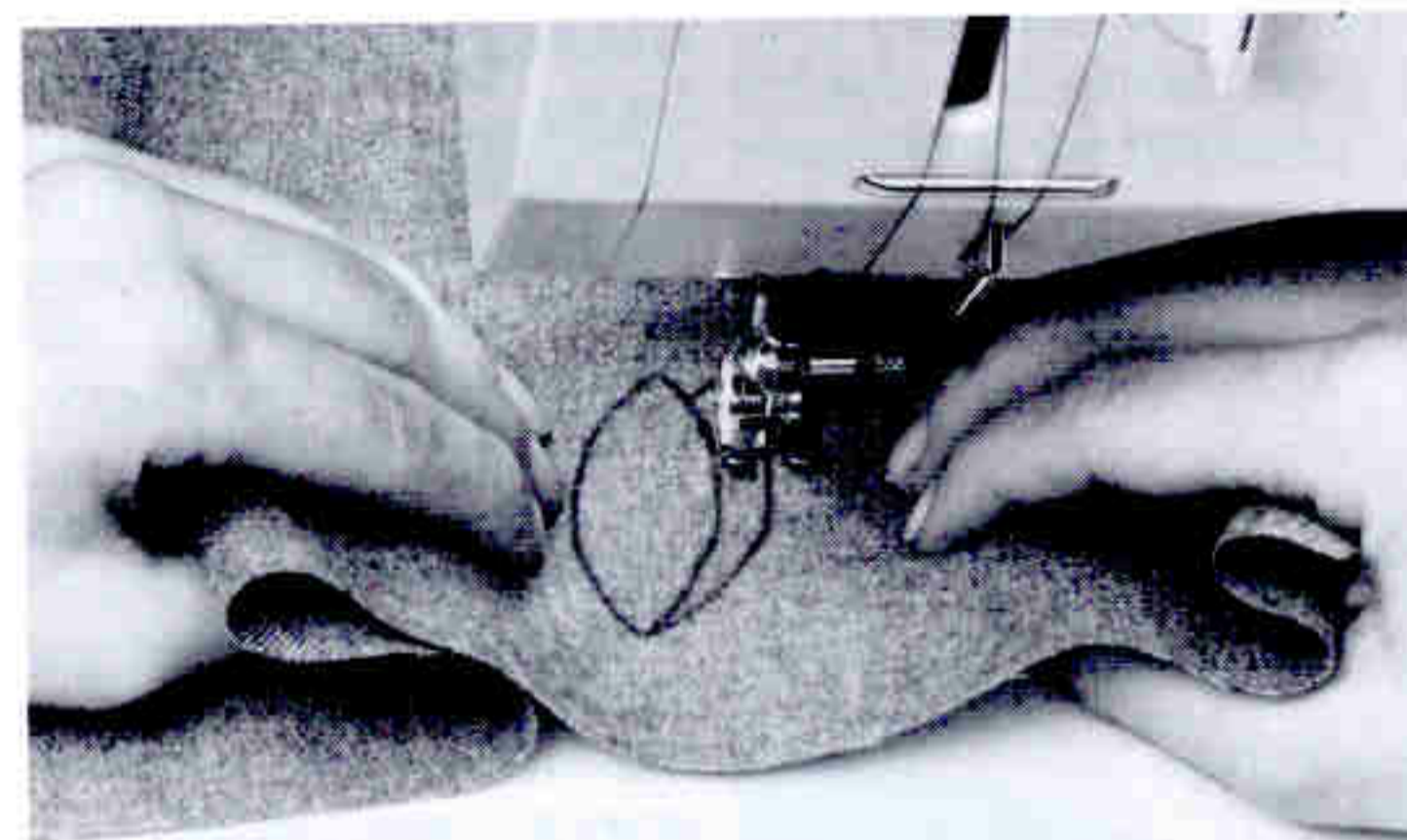
The frame is mainly guided by the left hand. It must be held firmly and be able to turn easily. The right hand must be able to operate the hand-wheel at all times.



Hand position initially as when darning. Then draw index finger straight back (Fig. 1) to the inner edge of the frame. Middle and ring-fingers remain stretched.

Important note:

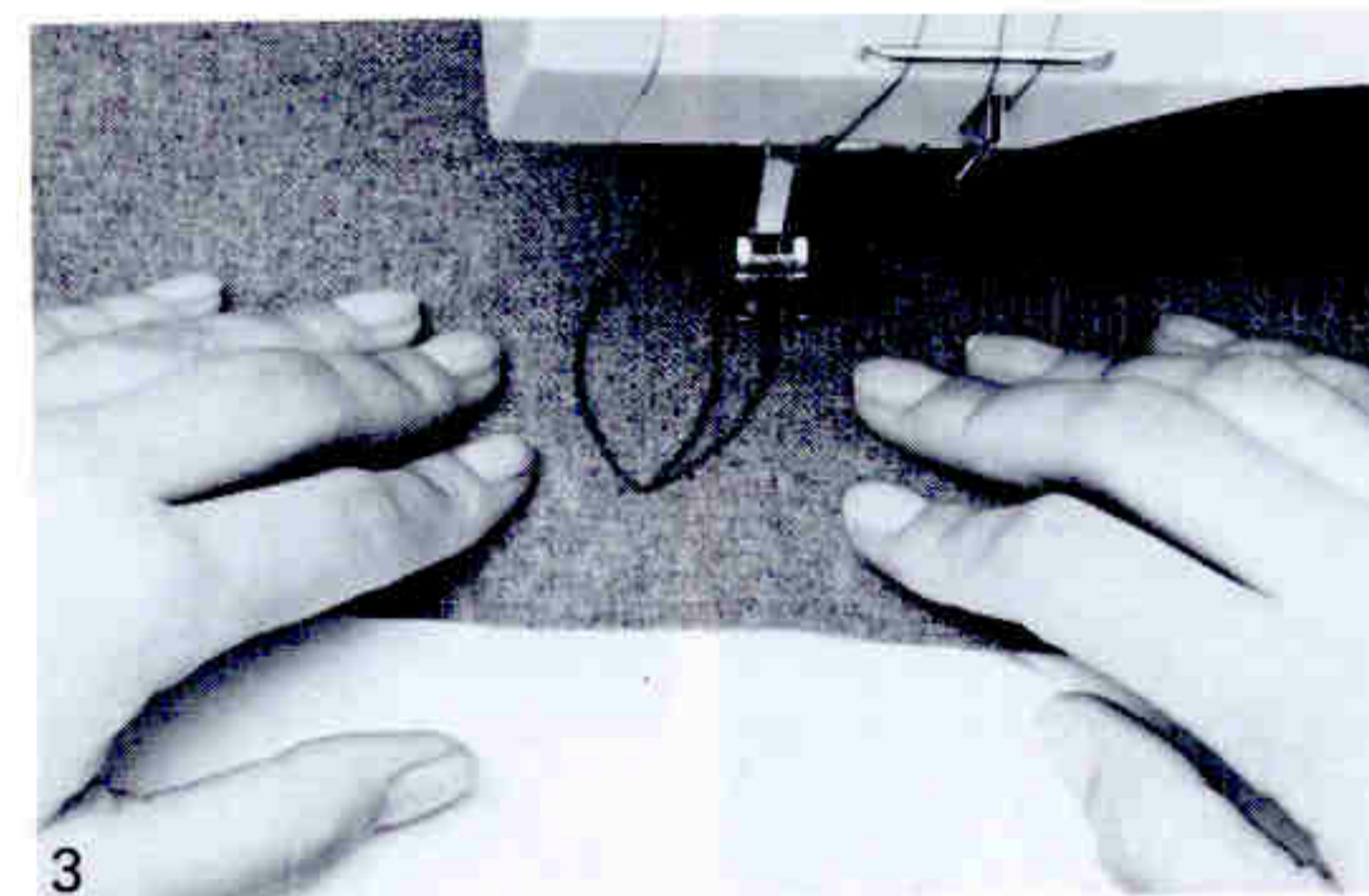
Do not place index finger parallel to the thumb, otherwise movement of the hand is restricted



Guiding without frame

Some textiles, e.g. velvet, cannot be stretched in the frame. Nevertheless, they should be guided in as stretched a condition as possible. Place thumbs under the material. Make a fold if the workpiece is large. Guide near presser foot. In this way, the material can be stretched a little and turned easily (Fig. 2).

This method of guiding is unsatisfactory, slight pressure is exerted on the material and guiding is difficult (Fig. 3).



Single-colour appliqué

Presser foot:	030
Thread:	darning-/ embroidery 30
Needle:	80
Stitch selection:	selector lever 0 changeover lever 0
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Procedure

Trace the design onto the wrong side of the background material with tracing paper. N.B. This will be reversed on the right side.

The design can also be traced on thin Vilene* and ironed onto the back of the material. This is recommended for coarse and irregular fabrics on which it is difficult to trace.

Stiffen appliqué material with Vilene* and baste onto the right side of background material.

If vilene is not used, paper must be used underneath all satin stitches. This is torn away afterwards.

* Vilene = fine iron-on, non woven interfacing.

1st operation

Stitch width: 1/2–1
Stitch length: 1/4 approx.

- a) Sew along the traced lines on the wrong side of background.
- b) Trim away the surplus material of the appliqued piece against the zig-zag stitches. Take work out of the frame for this purpose.

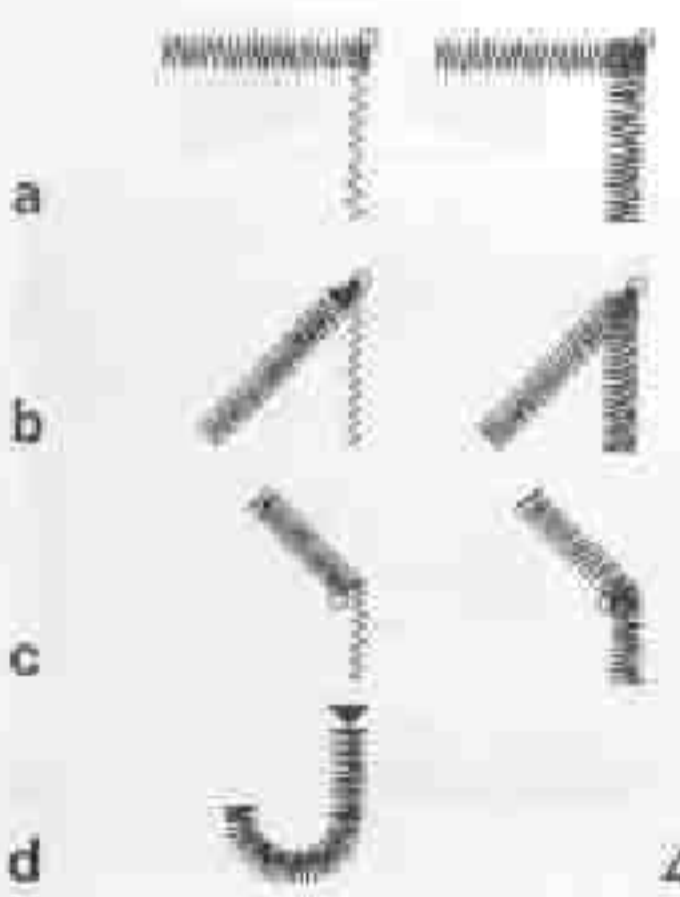
2nd operation

Stitch width: 1 1/2
Stitch length: almost 0

Cover the cut edge and the zig-zag stitches working on the right side with a satin stitch. Sew corners and small curves stitch-by-stitch. Finish by tracing the lines through that were not appliqued and sew over from right side.

Corners and small curves (Fig. 4).

- a) **Rectangular corners:** Stop with the needle at outer edge, turn the work and continue sewing. The corner will then be over-sewn.
- b) **Pointed corners:** sew to 1/2 cm before corner. Then turn zig-zag back to 0 while sewing. Raise presser foot, turn work, set zig-zag again to 1 1/2 and continue sewing carefully.
- c) **Blunt corners:** sew until the needle is exactly at the **middle of the angle**. Then sew out from centre, replacing the needle in the middle after every stitch. Raise presser foot and turn material slightly.
- d) Sew small curves in the same way.



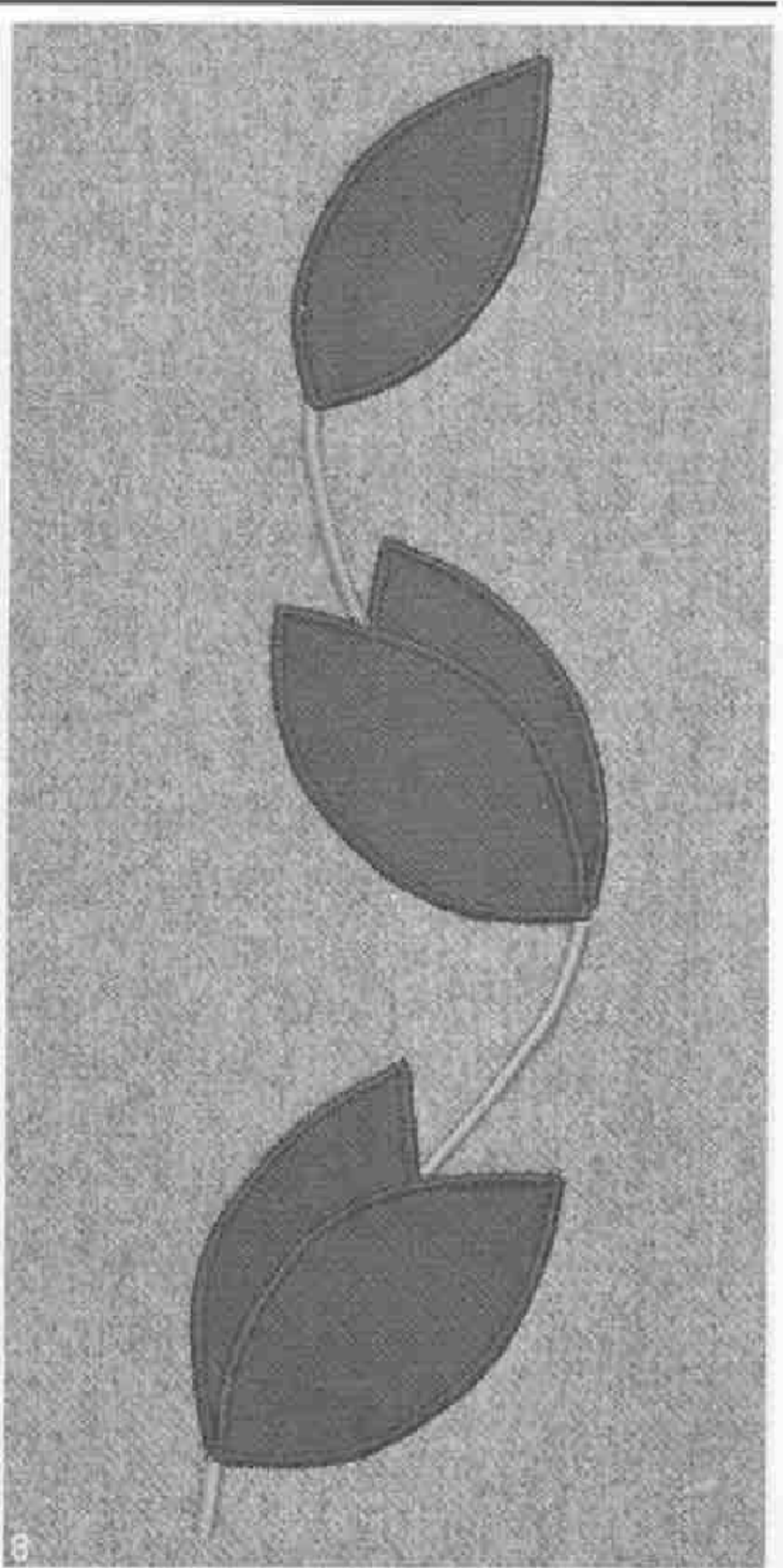
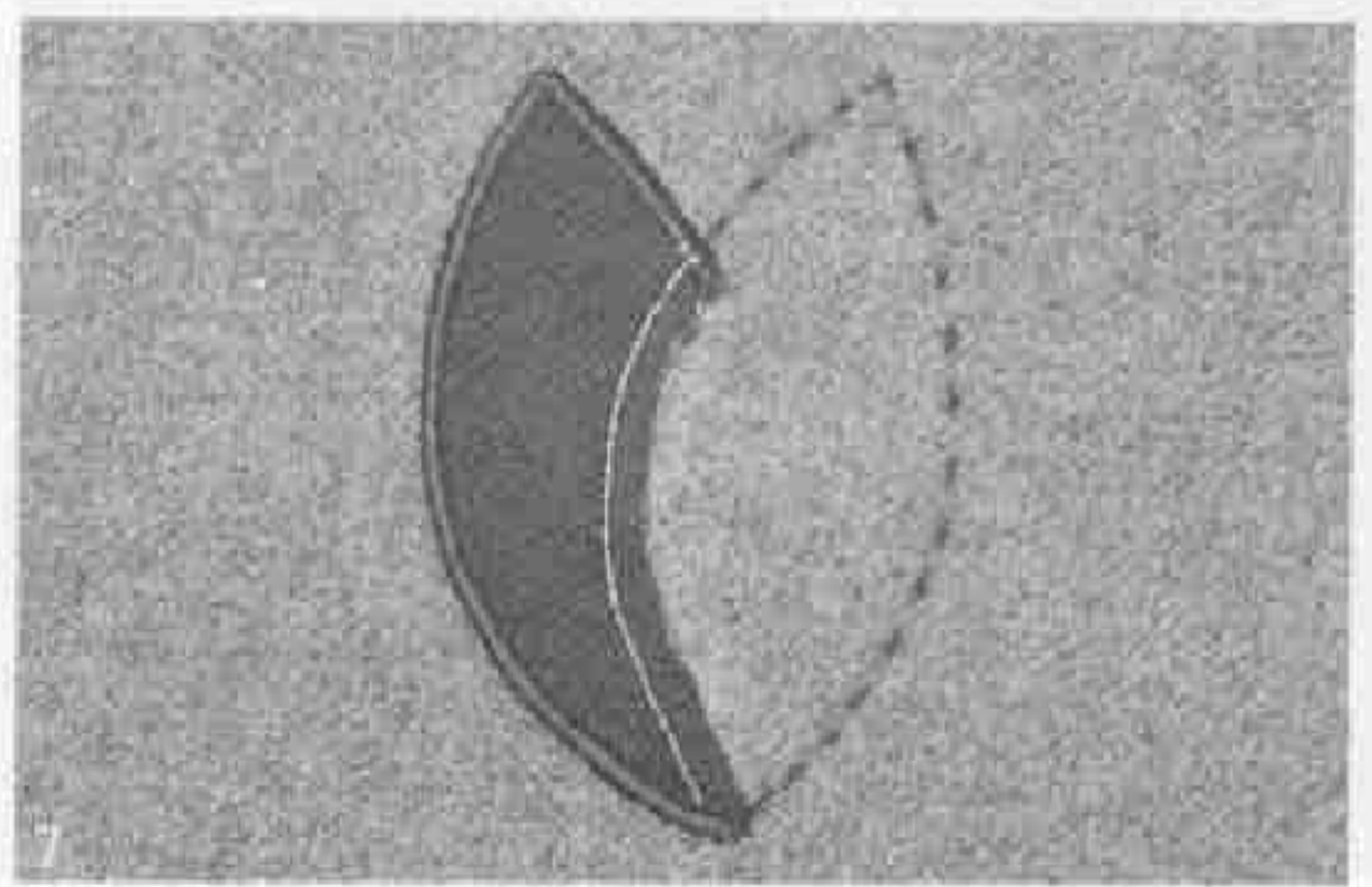
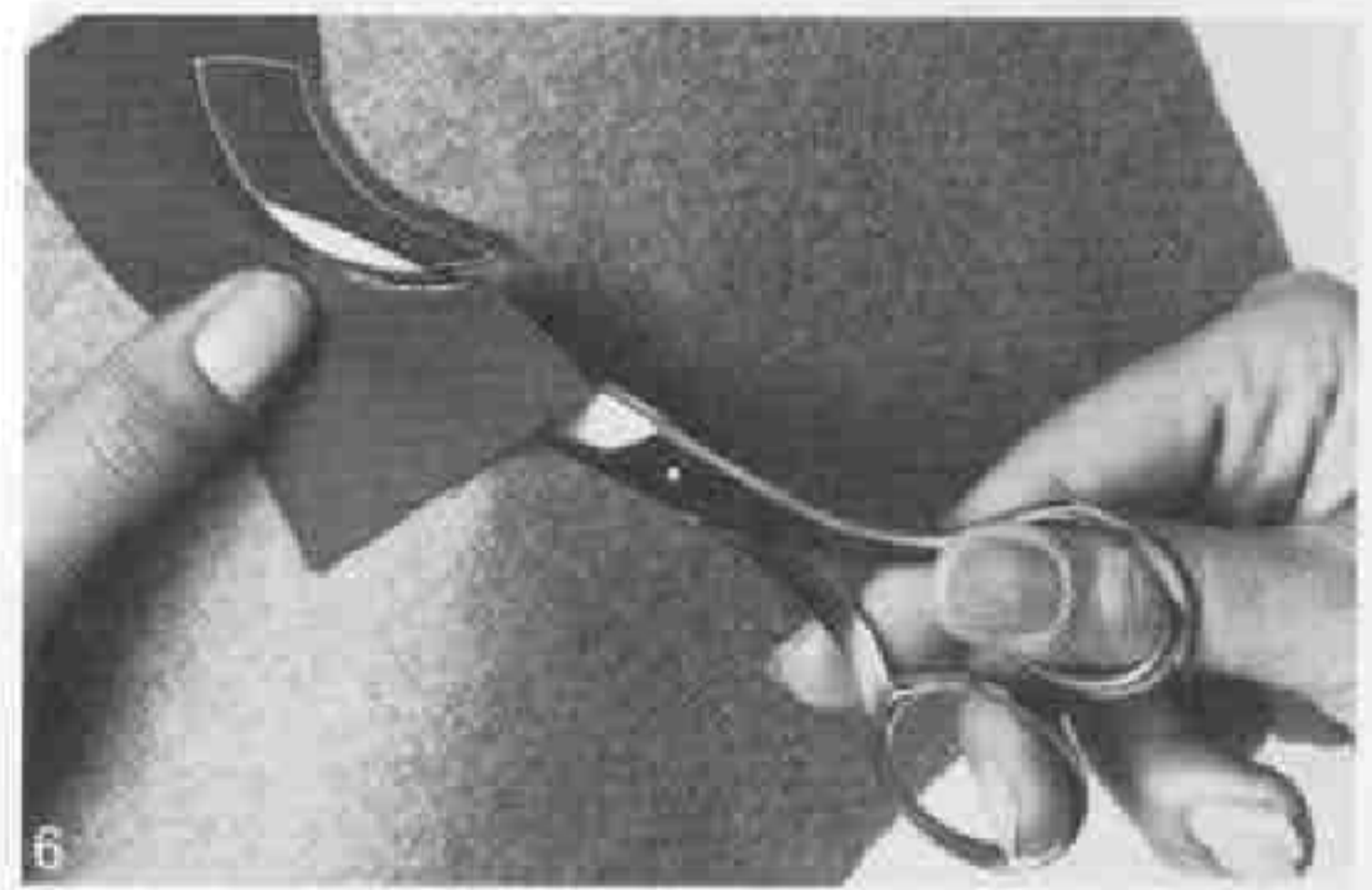
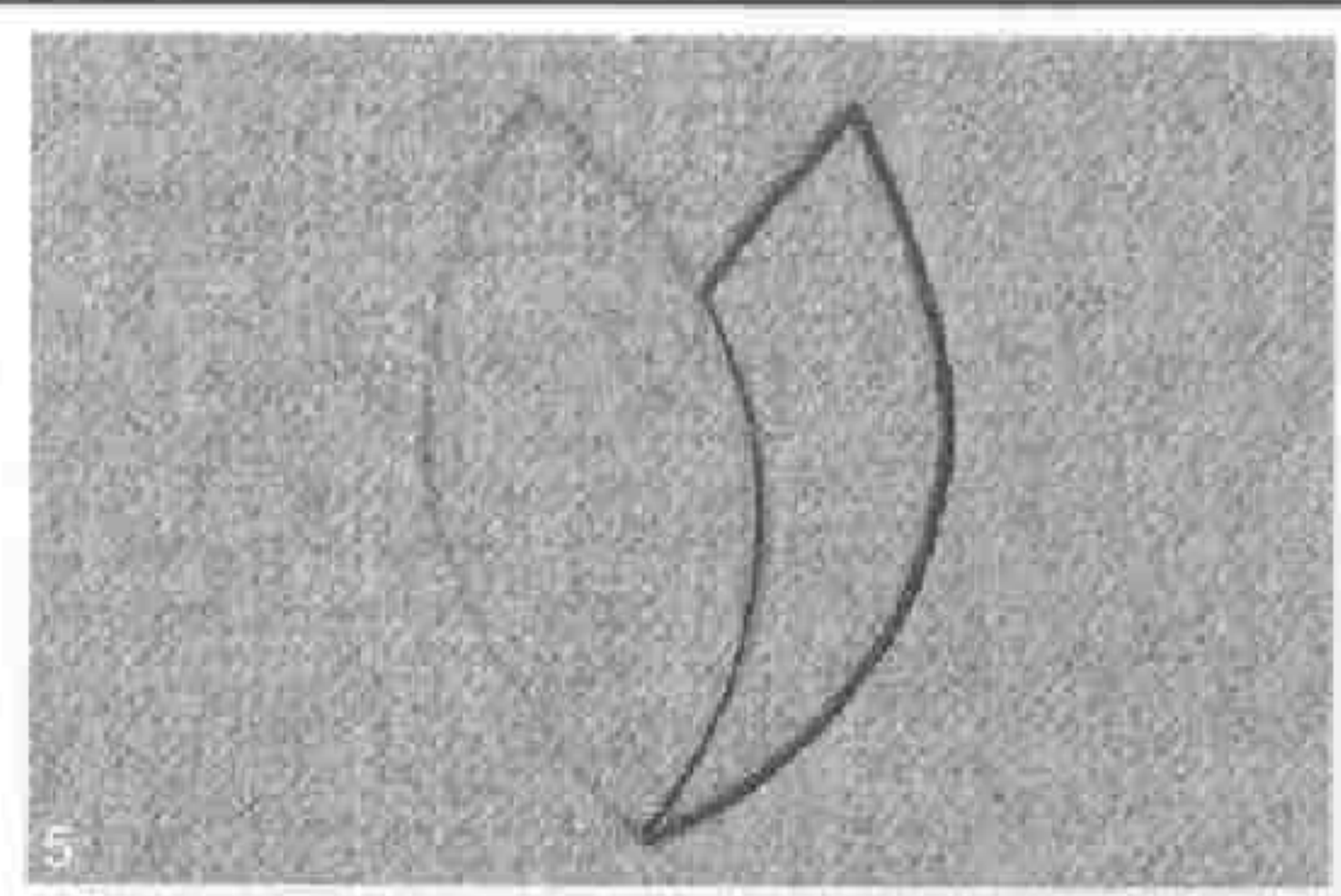
Multi-colour appliqué
The appliqué pieces must overlap.

Lower appliqué piece:
1. Baste on appliqué material. Sew first operation: where colours intersect sew only with straight stitch, the remaining lines with zig-zag (Fig. 5).

2. Cut off surplus material. **Warning:** leave 2 mm where straight stitch is sewn; cut off all material where zig-zag is sewn (Fig. 6).

3. Omit the straight stitch lines when covering the edges. These are covered by the next appliqué (Fig. 7).

Upper appliqué piece:
work as for normal appliqué.



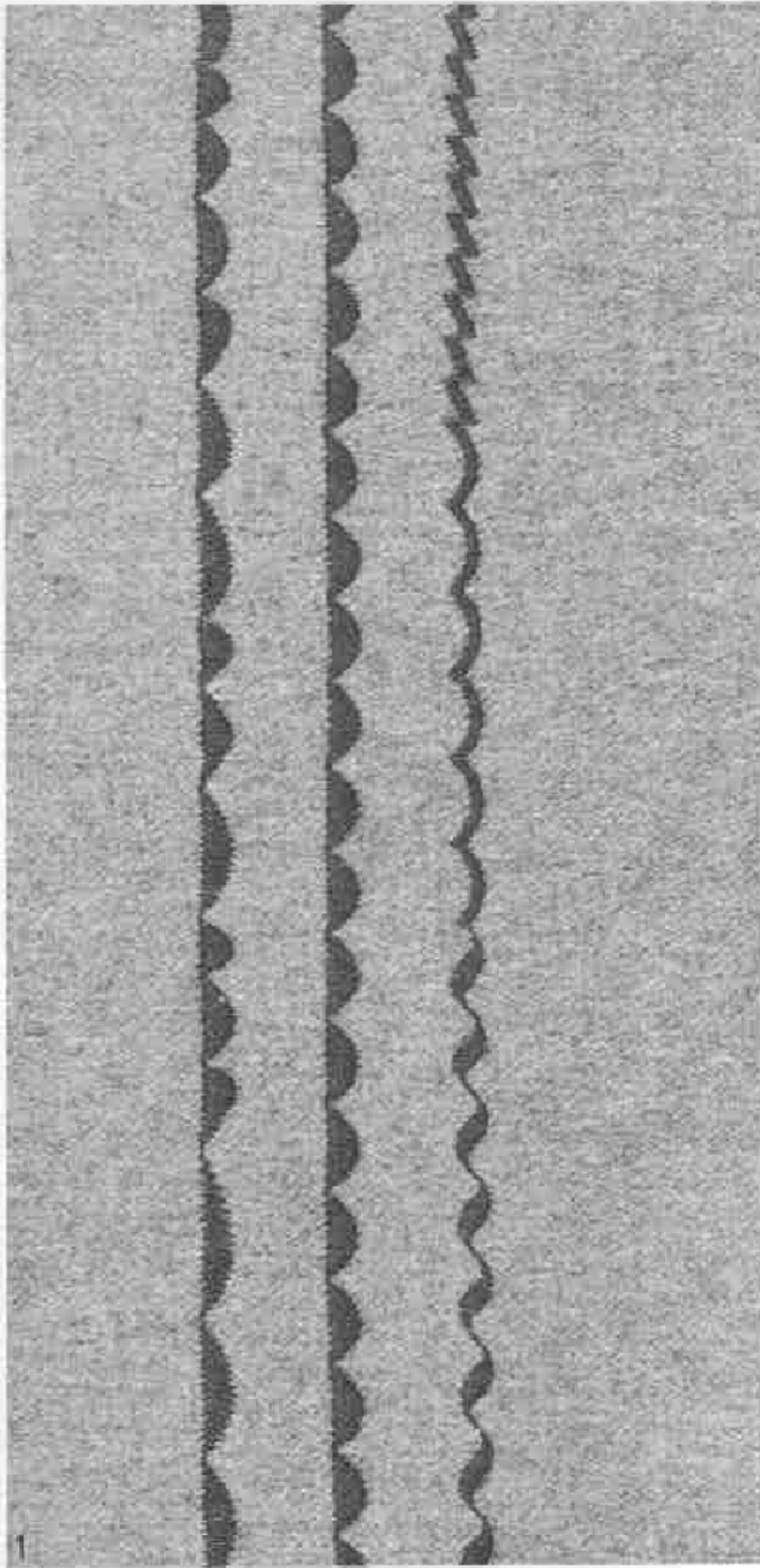
Embroidery with Decorative Stitches

Like all other needlework, whether free-hand embroidery, knitting or weaving, embroidery with decorative stitches on the machine requires some basic knowledge and a little practice for success. Practice makes perfect. With a little skill you too can produce works of art to your own design. Practice in the sequence specified. Each step is based on the preceding one. Even practice can be fun.

Basic exercises for decorative stitching

1. leaves (pattern indicator exercise)
2. flowers
3. parallel sewing of patterns
4. sewing and calculating corners
5. sewing and calculating curves

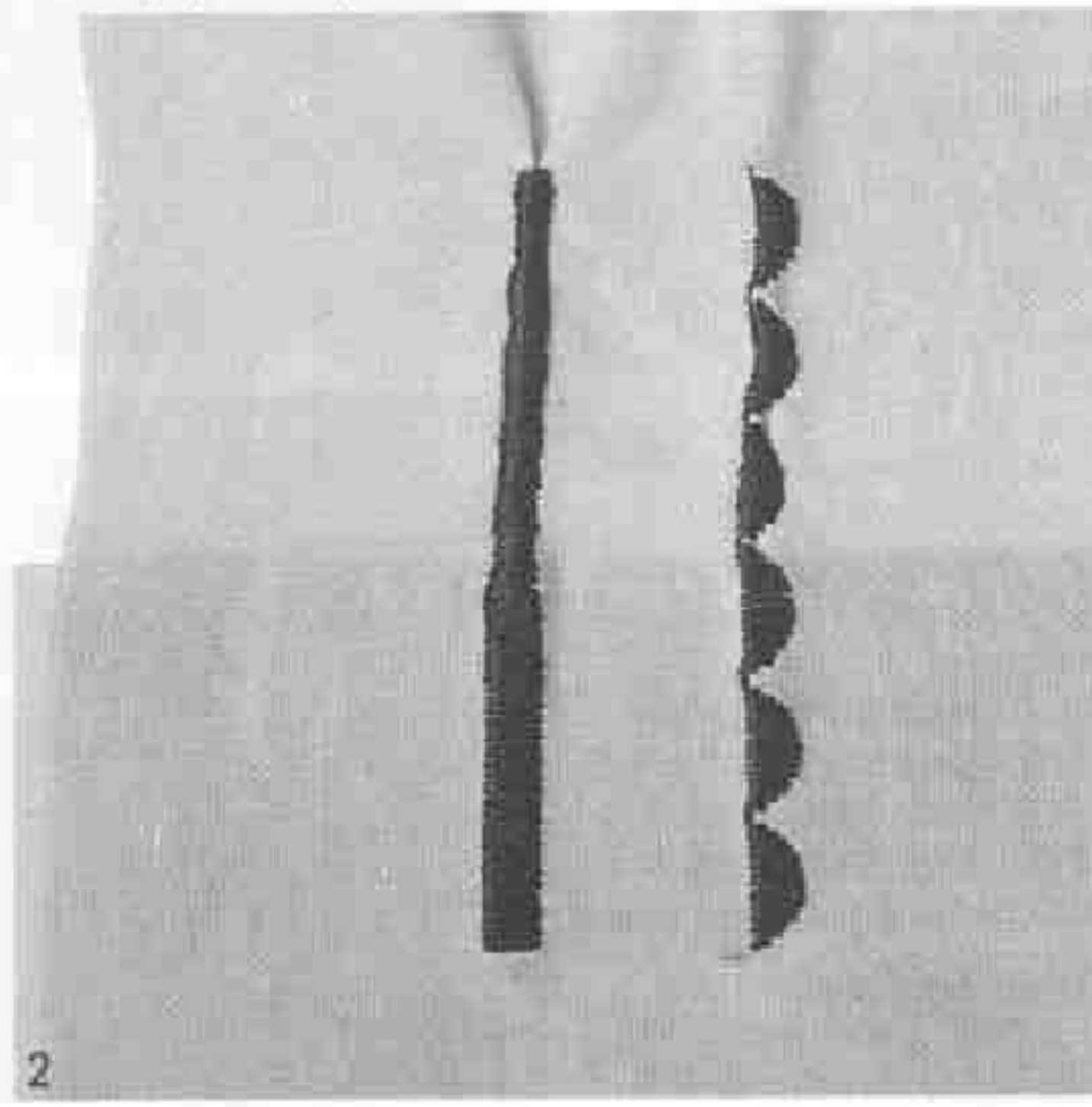
A bright, regular and rather firm cotton fabric is most suitable for practice purposes. Strengthen material a little if necessary.



Guiding the material
Ensure that the material runs **regularly** under the presser foot. Pulling, pushing or holding back the material produces irregular patterns (Fig. 1).

Use sewing table! Do not place machine at edge of table.

Paper underlay
Always use paper underneath to ensure that the material does not pull together owing to the width of the stitch (Fig. 2). Pattern paper, typewriter paper, unprinted newspaper are suitable, but not tissue paper.

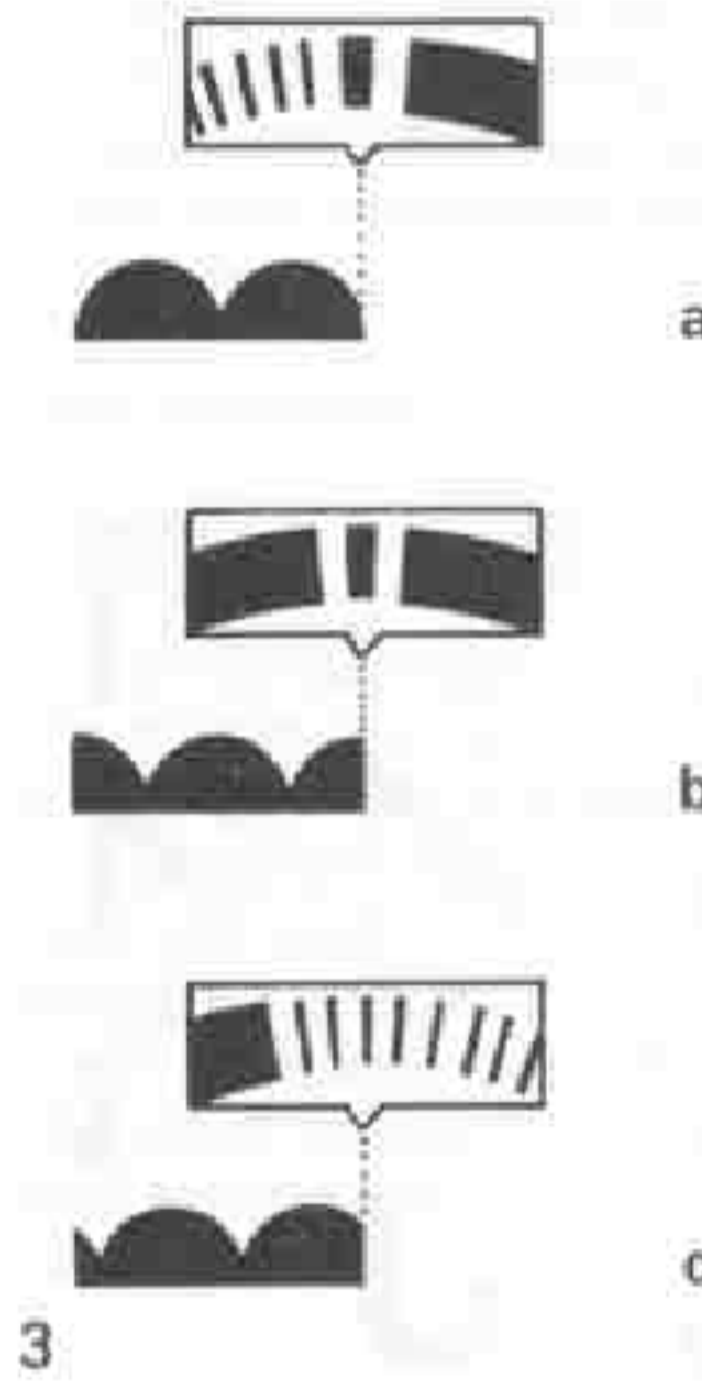


Pattern (repeat) indicator
(Fig. 3)
The pattern indicator shows how far a decorative pattern has been sewn.

a) The red line indicates beginning and end of a pattern

b) The black line indicates the centre of the pattern

c) The broken stroke (vertical black line) is a preliminary indication that the pattern will soon be complete.



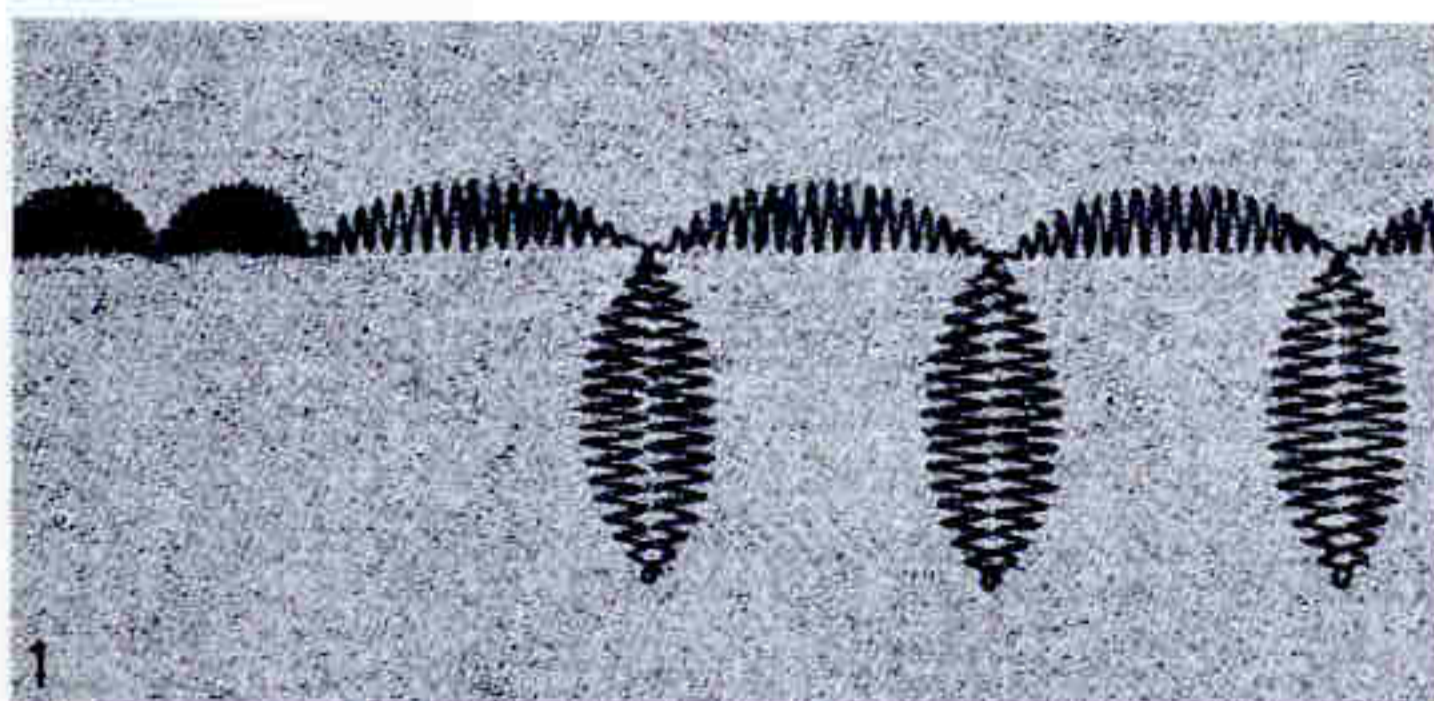
1. Leaves

Exercise for observing the pattern indicator

Presser foot:	030
Thread:	embroidery thread No. 30
Needle:	80
Stitch selection:	selector lever 15 changeover lever 1-20
Stitch width:	4
Stitch length:	1/2 approx.
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

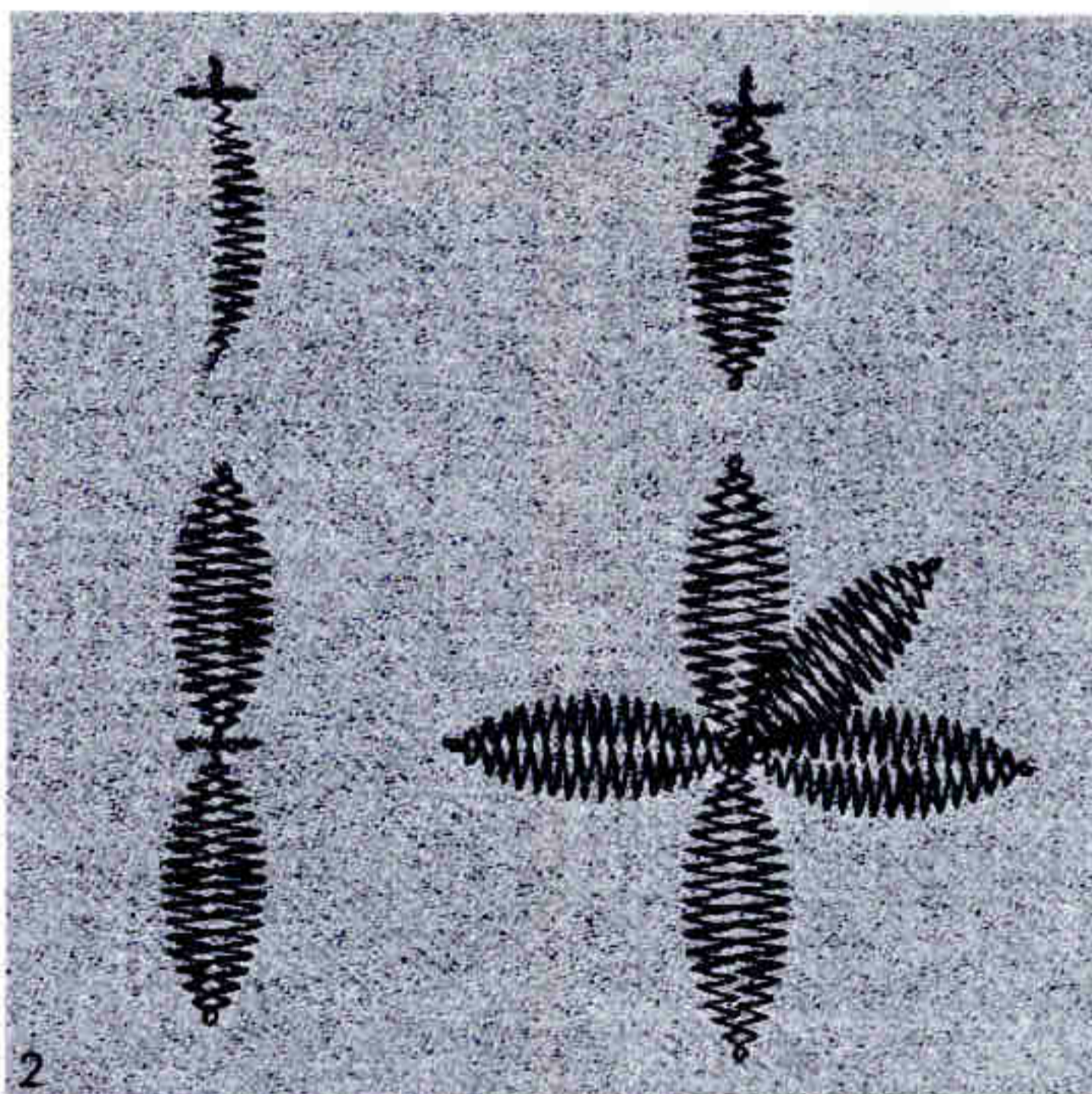
1. Sew pattern just over centre. **During this time watch the sewing** in the presser foot slot. Sew slowly after the centre of the pattern, so that sewing does not go past the end of the pattern. Towards the end of the pattern look to see whether the pattern indicator is at the broken black line. **If so, then watch the pattern indicator..**

2. Place needle into work (by turning hand-wheel)
3. Turn material and sew next half of leaf in same way (Fig. 1).



2. Flowers (Fig. 2)

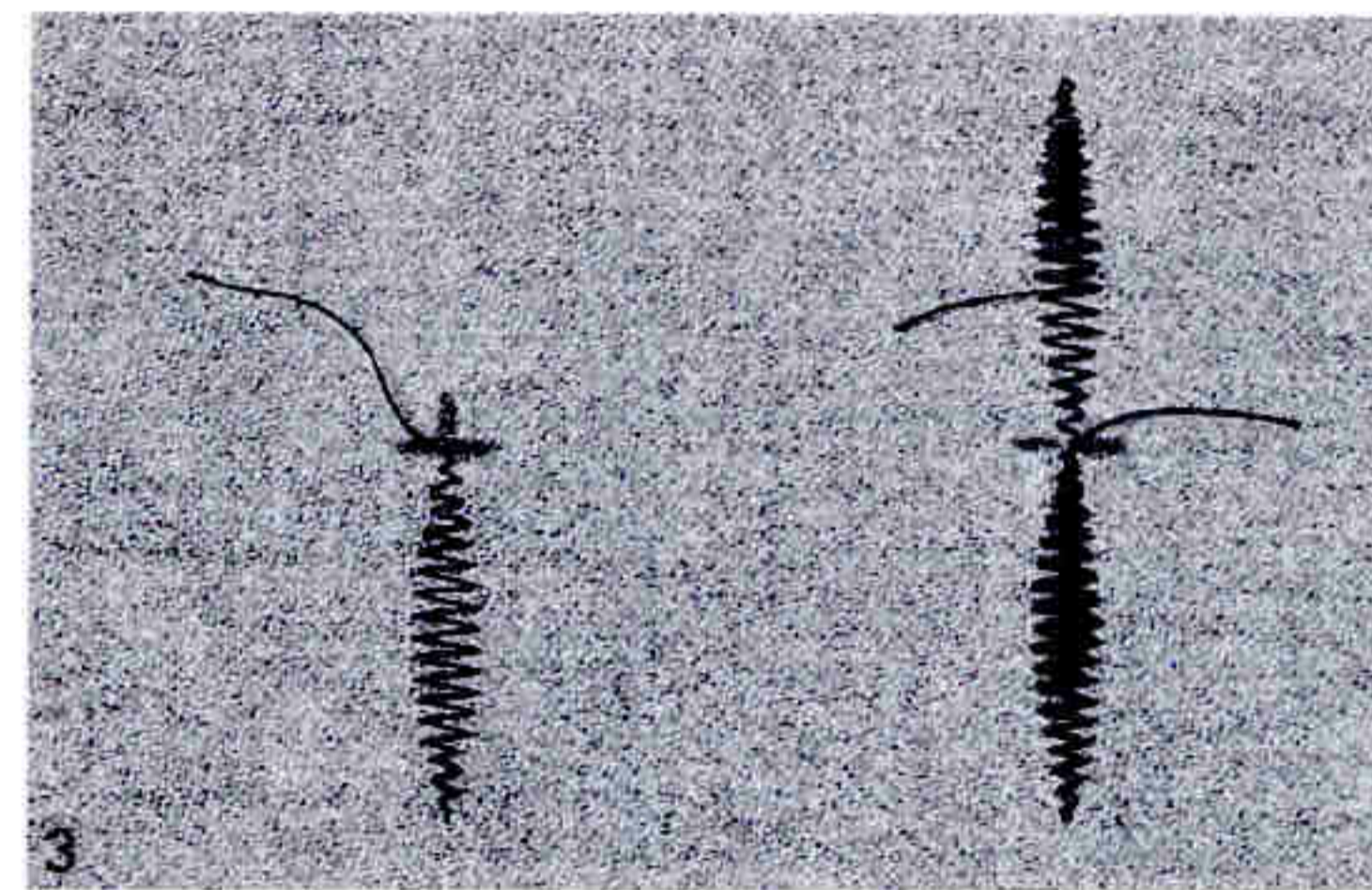
1. Always start in the middle
2. When sewing the second half towards the centre of the flower do not cross the end of the pattern, the red line, otherwise the next leaf



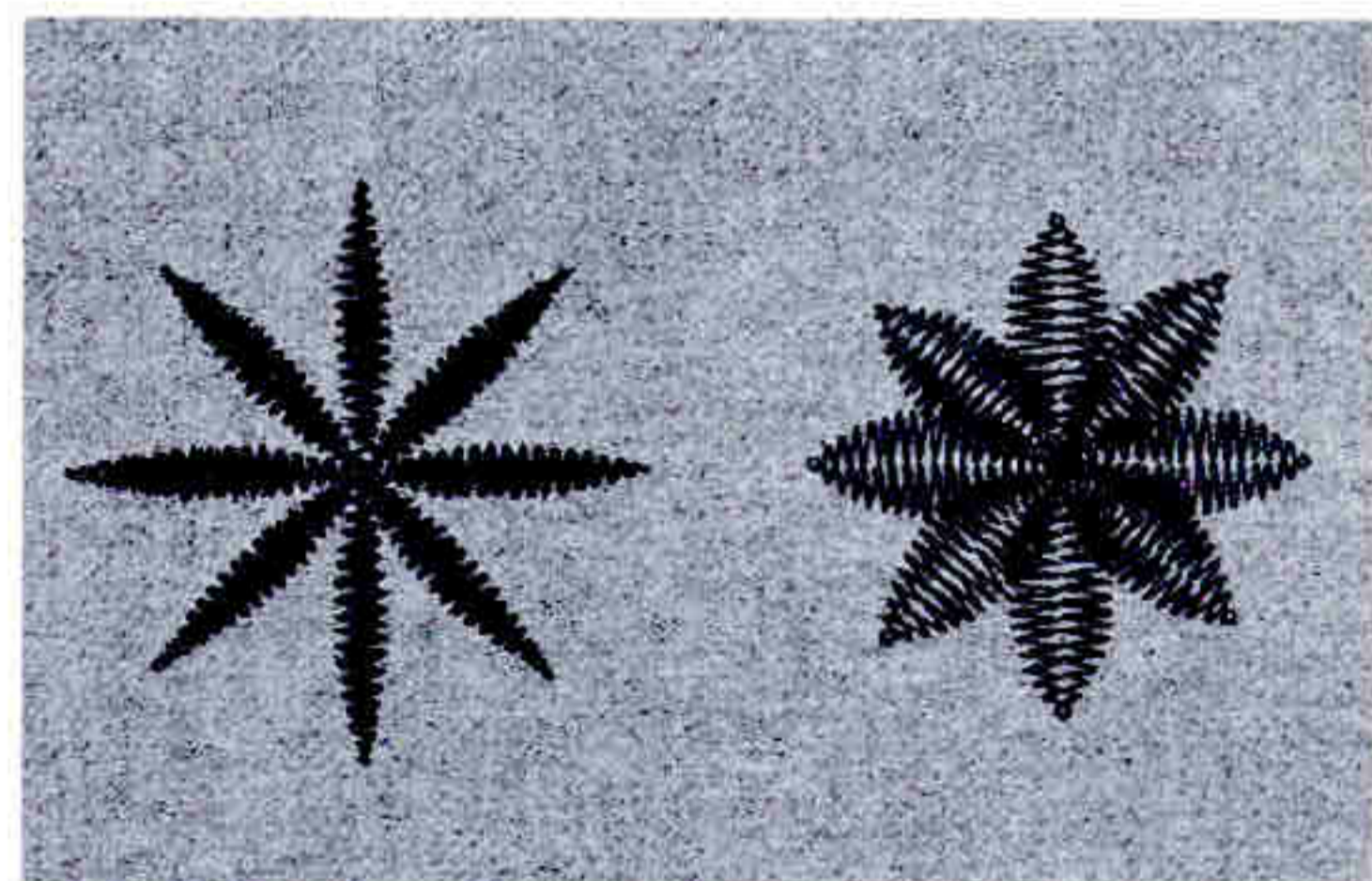
will be shorter, longer or out of line.

3. When the needle reaches the centre, check **each time** whether it is **actually** at the centre of the design. If it is not then reposition material so that it does come to the centre.

4. Set **needle** on centre-line between the leaves already sewn for intermediate leaves.



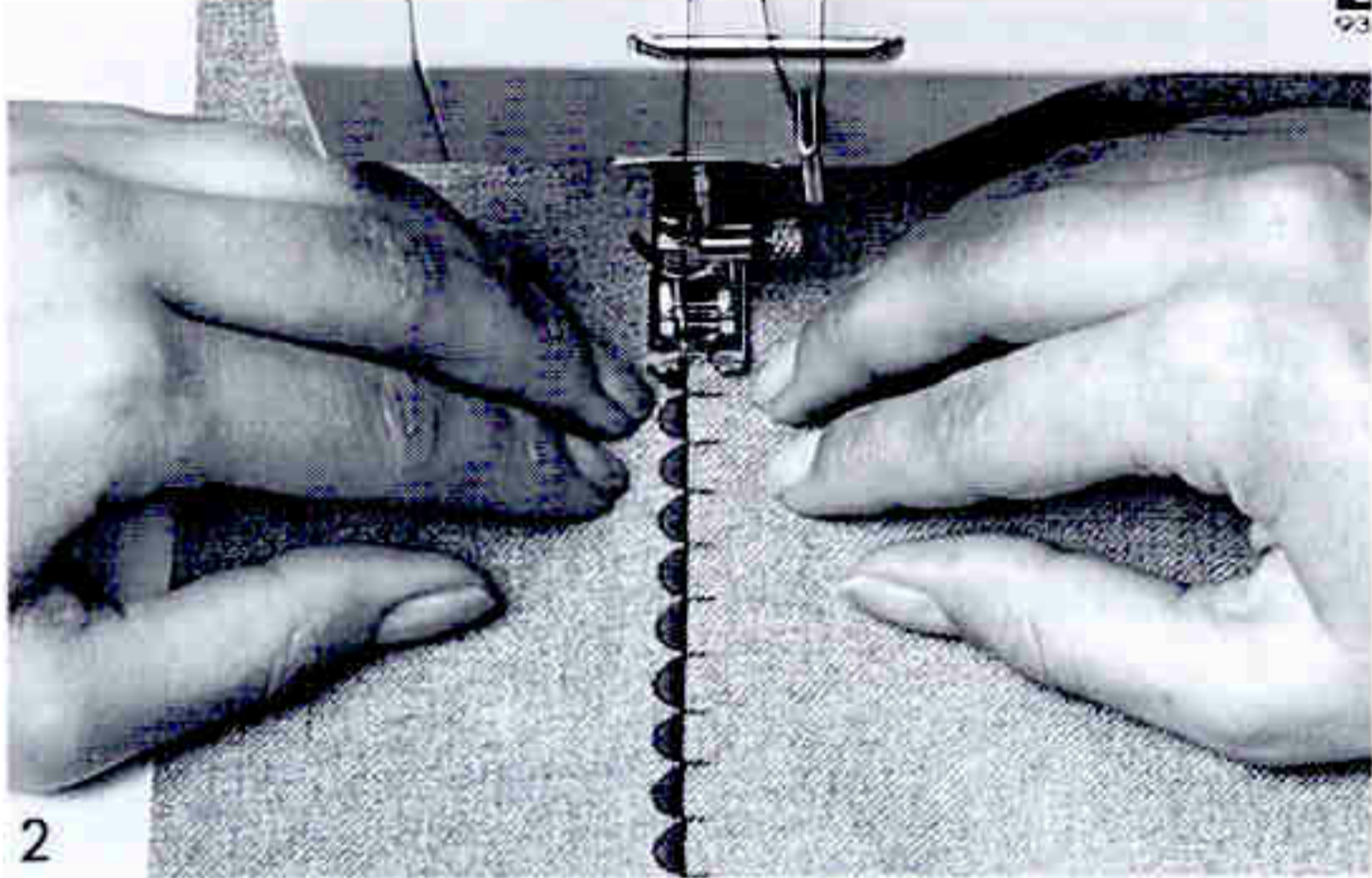
For this pattern the 2nd leaf is sewn directly over the 1st leaf (Fig. 3).



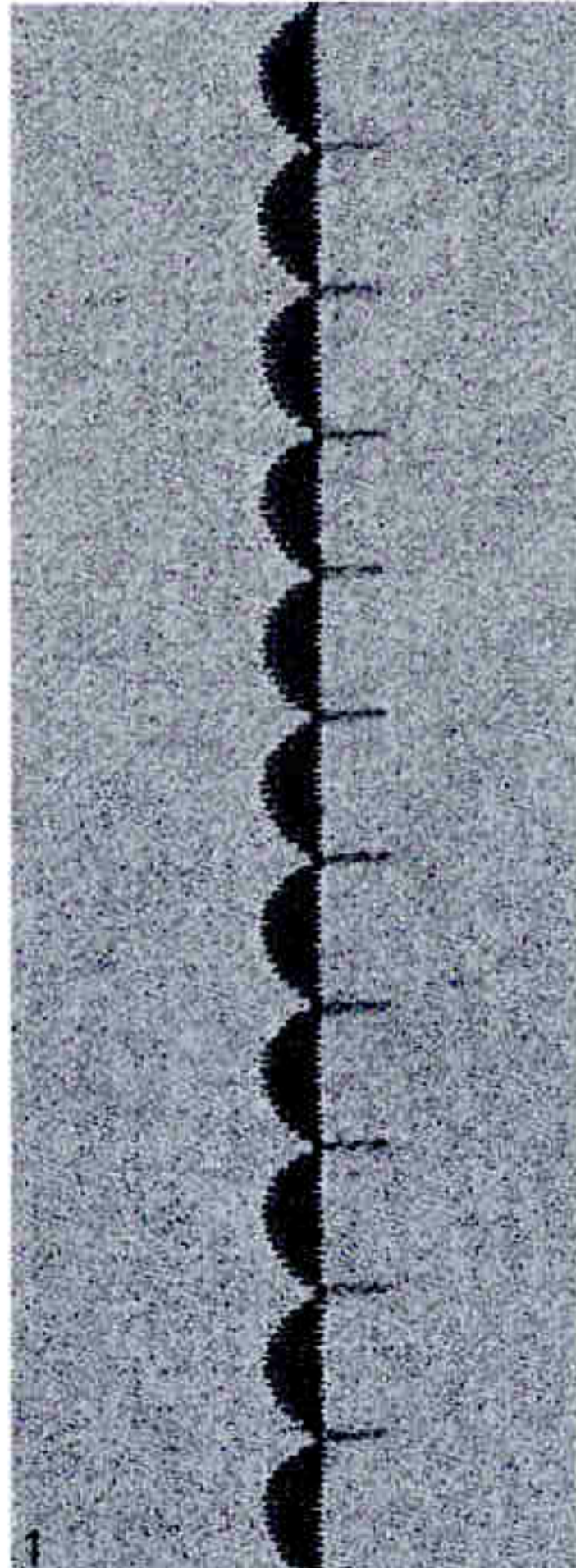
Embroidery with Decorative Stitches

3. Parallel sewing of satin stitch patterns

Presser foot:	030
Thread:	embroidery thread No. 30
Needle:	80
Stitch selection:	selector lever 9 ... 20 changeover lever 1-20
Stitch width:	4
Stitch length:	almost 0-1/4
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●



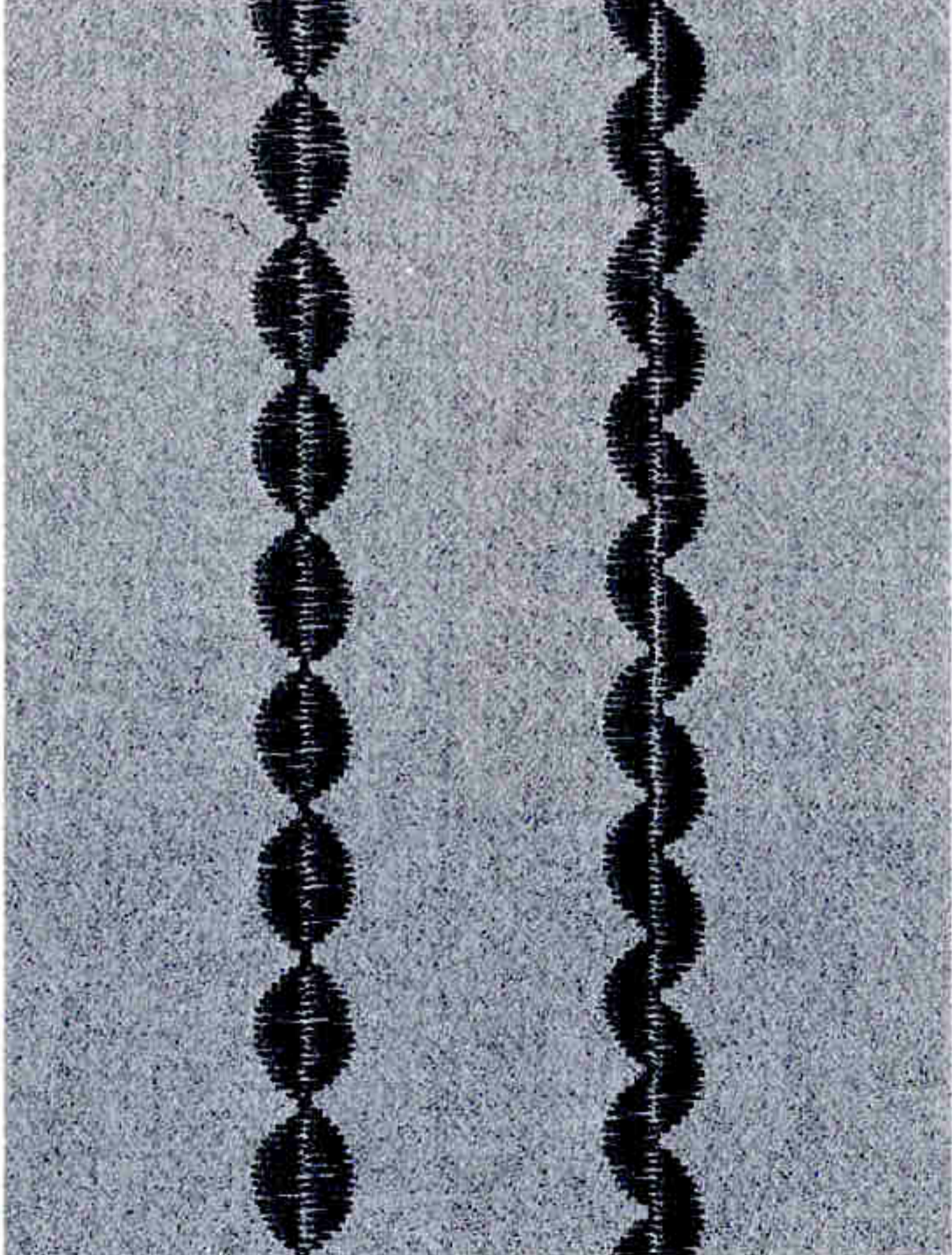
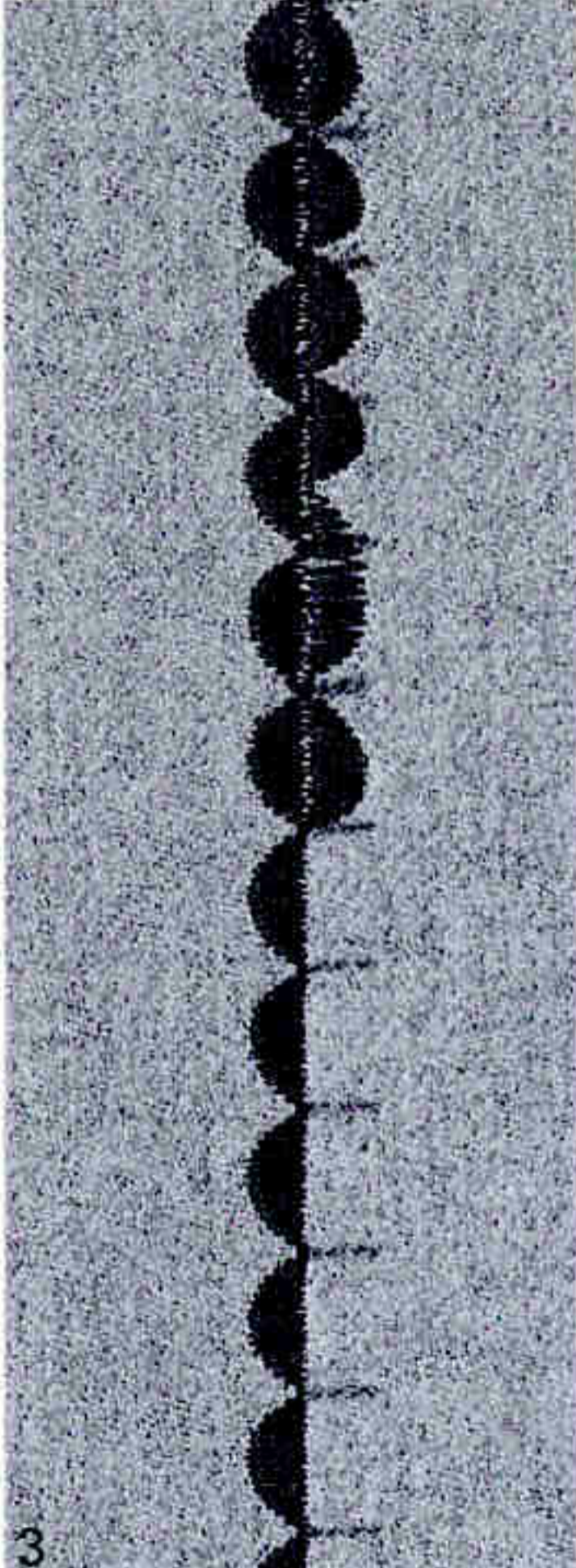
Sewing two perfectly matching parallel lines of embroidery patterns can be a problem. This is because when working the 2nd row of sewing the 1st row will also run partly under the foot. This acts as a thick material would do and shortens the stitch slightly and you must therefore compensate for this.



1. Mark a line out from the end of each pattern (Fig. 1).
42

2. For the 2nd row guide the material with fingers very close to the foot. All fingers should be on the fabric but the **middle fingers** are the ones that **do most of the work**. These should always be against the marked line. This means that at the end of each pattern your middle fingers must move down to the next marked line (Fig. 2).

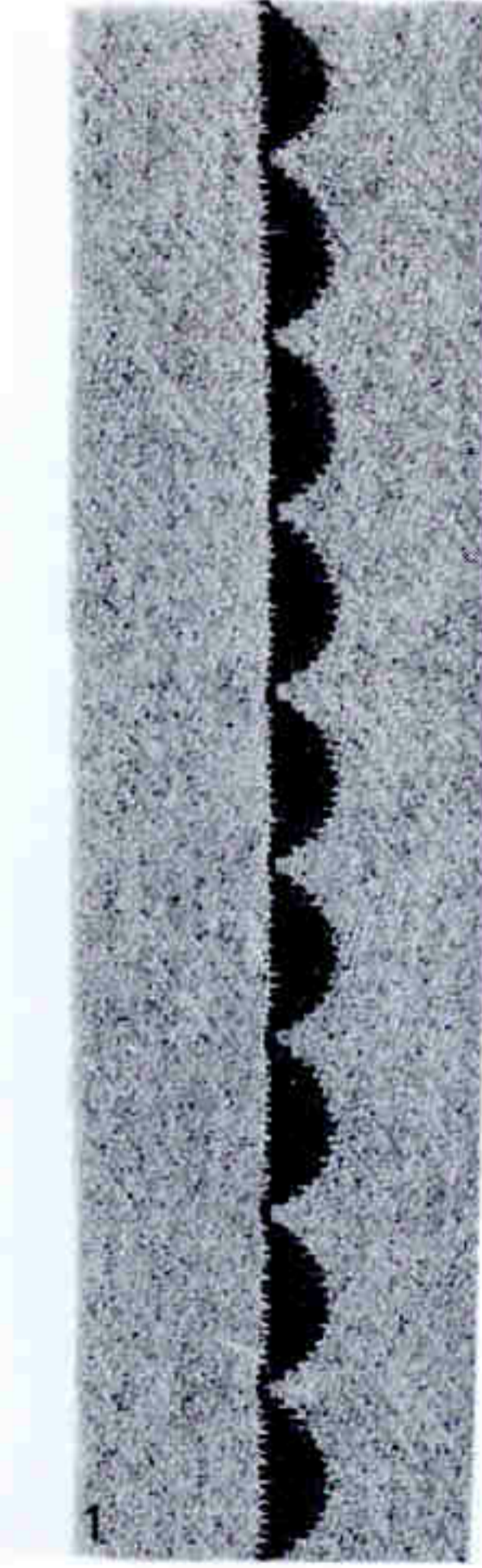
As you sew each individual pattern push the material slightly so that they match. Under no circumstances raise the presser foot and move the work. This procedure takes practice and you cannot expect perfectly matching patterns at your first attempt. Always sew slowly.



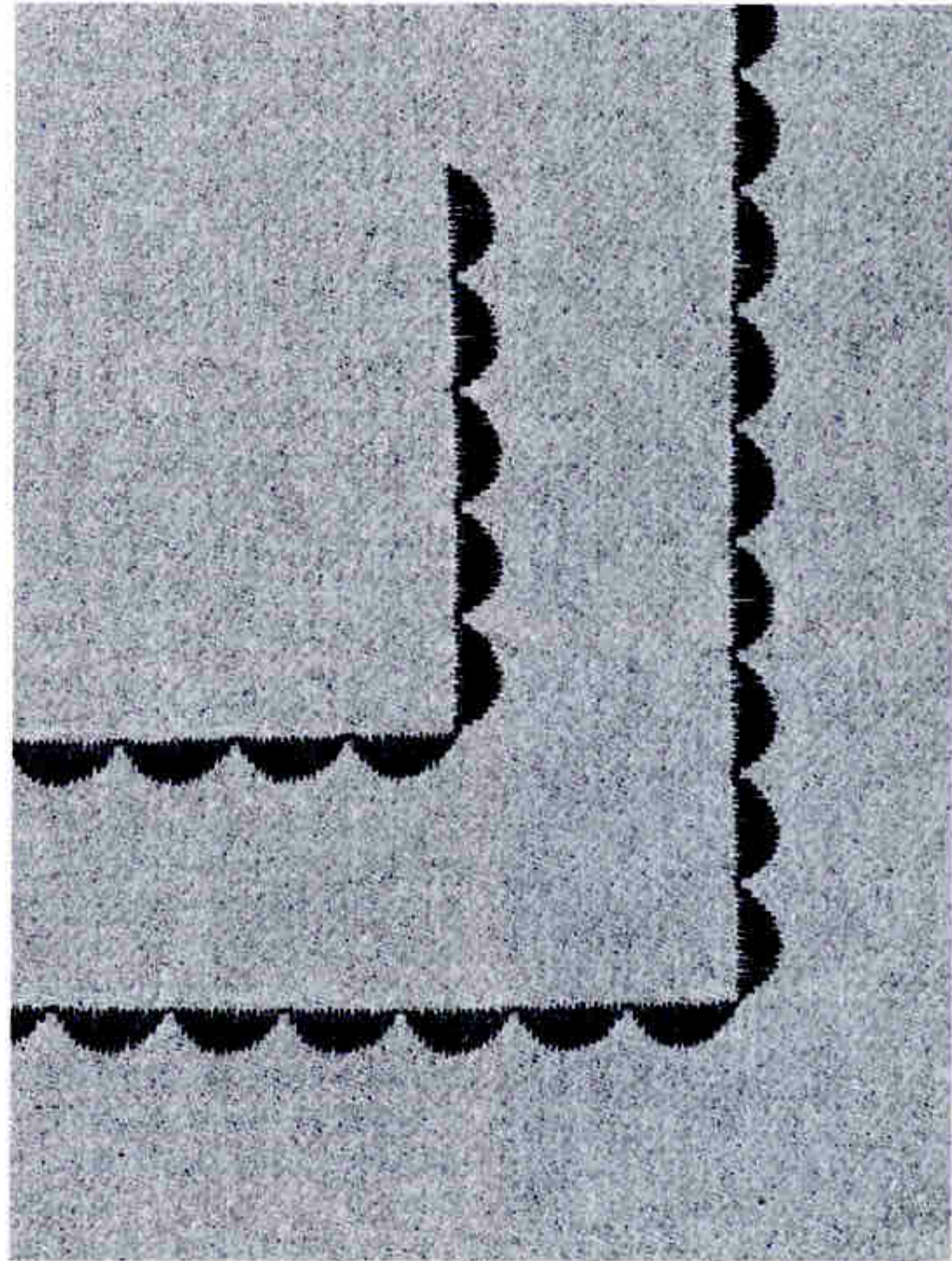
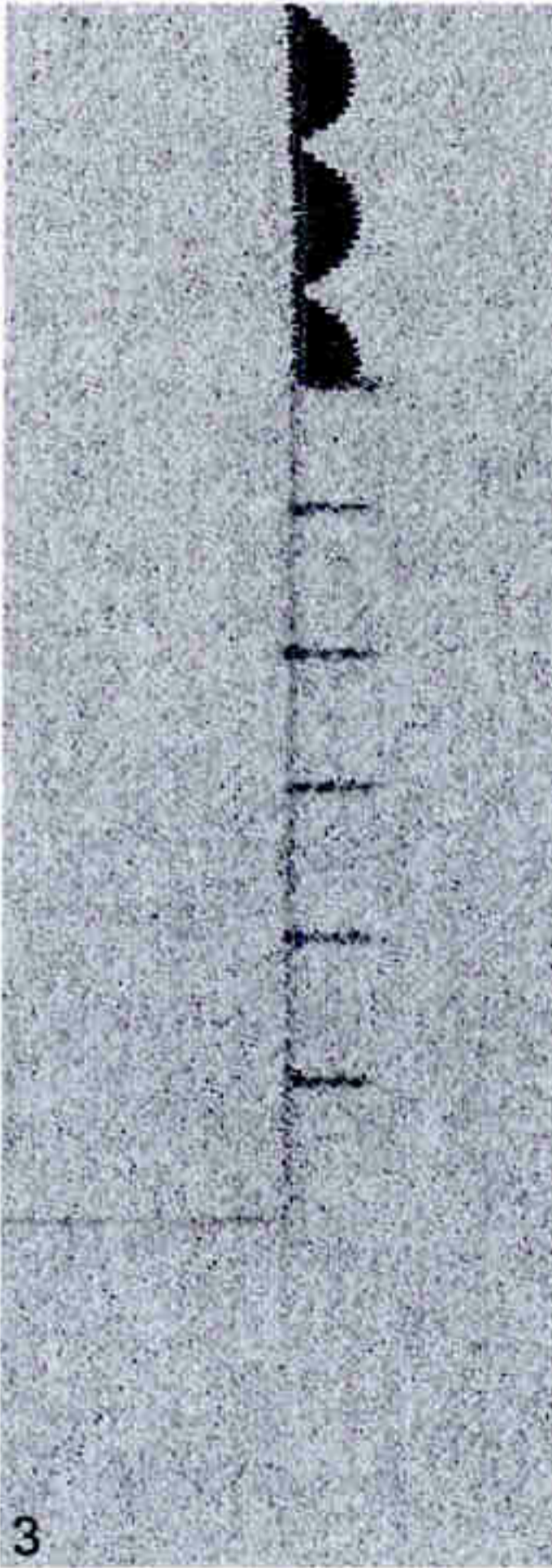
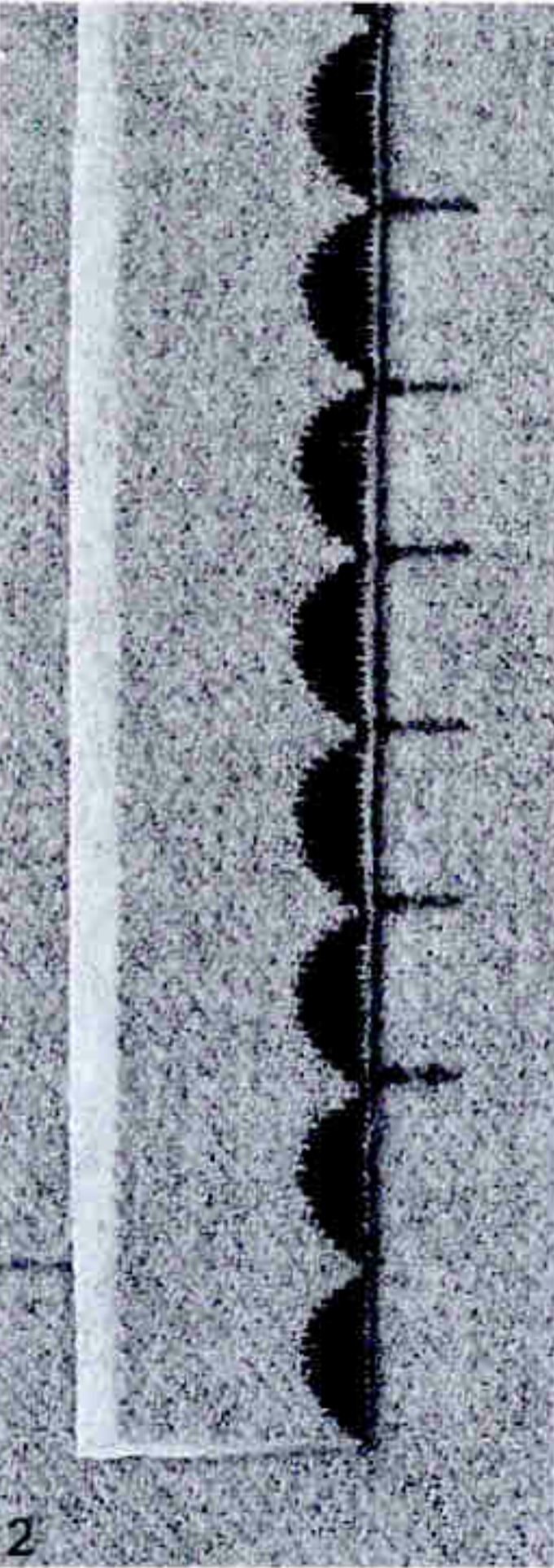
4. Sewing and calculating corners

Presser foot:	030
Thread:	embroidery thread No. 30
Needle:	80
Stitch selection:	selector lever 9 ... 20 changeover lever 1-20
Stitch width:	4
Stitch length:	almost 0-¼ approx.
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

pulling the material. In this way, should adjustment be necessary, it will hardly be noticeable spread over the 6 patterns (Fig. 3).



When sewing towards a pre-determined corner you do not know beforehand whether the pattern will end exactly in the corner.
 To ensure that the pattern ends at the corner, the following calculation can be made:
1. Sew a test piece on a remnant of the same material, at least 6 patterns, place paper underneath (Fig. 1).
2. Lay this test on the previously determined corner and mark on to the material, the end stitch of at least 6 patterns (Fig. 2).
3. When sewing towards the corner stop at least 6 patterns away. You can now tell whether the patterns will fit exactly or whether you will have to adjust the length of each slightly by pushing or



5. Sewing and calculating curves

Presser foot:	030
Thread:	embroidery thread No. 30
Needle:	80
Stitch selection:	selector lever 9 ... 20 changeover lever 1–20
Stitch width:	4
Stitch length:	almost 0
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

1. Sewing curves

A curved line can be divided into short straight sections. It is therefore possible to sew along the curve of a decorative stitch pattern in the same way by sewing the individual patterns «straight».

Practice procedure:

Divide the marked curve into straight sections corresponding to the length of the pattern with the aid of dots. Sew first pattern, lower needle, raise presser foot, turn material sufficiently for next dot to be directly in front of needle. Lower foot, sew second pattern, etc. (Fig. 1).

With a little practice, it will be simple to estimate the distance between the dots, i.e. the length of the pattern, so that the dots need no longer be marked.

2. Calculation of circles and closed figures

If a closed circle (up to 2½ cm dia.) or closed shape must be sewn, the pattern has to be calculated so that they fit in exactly.

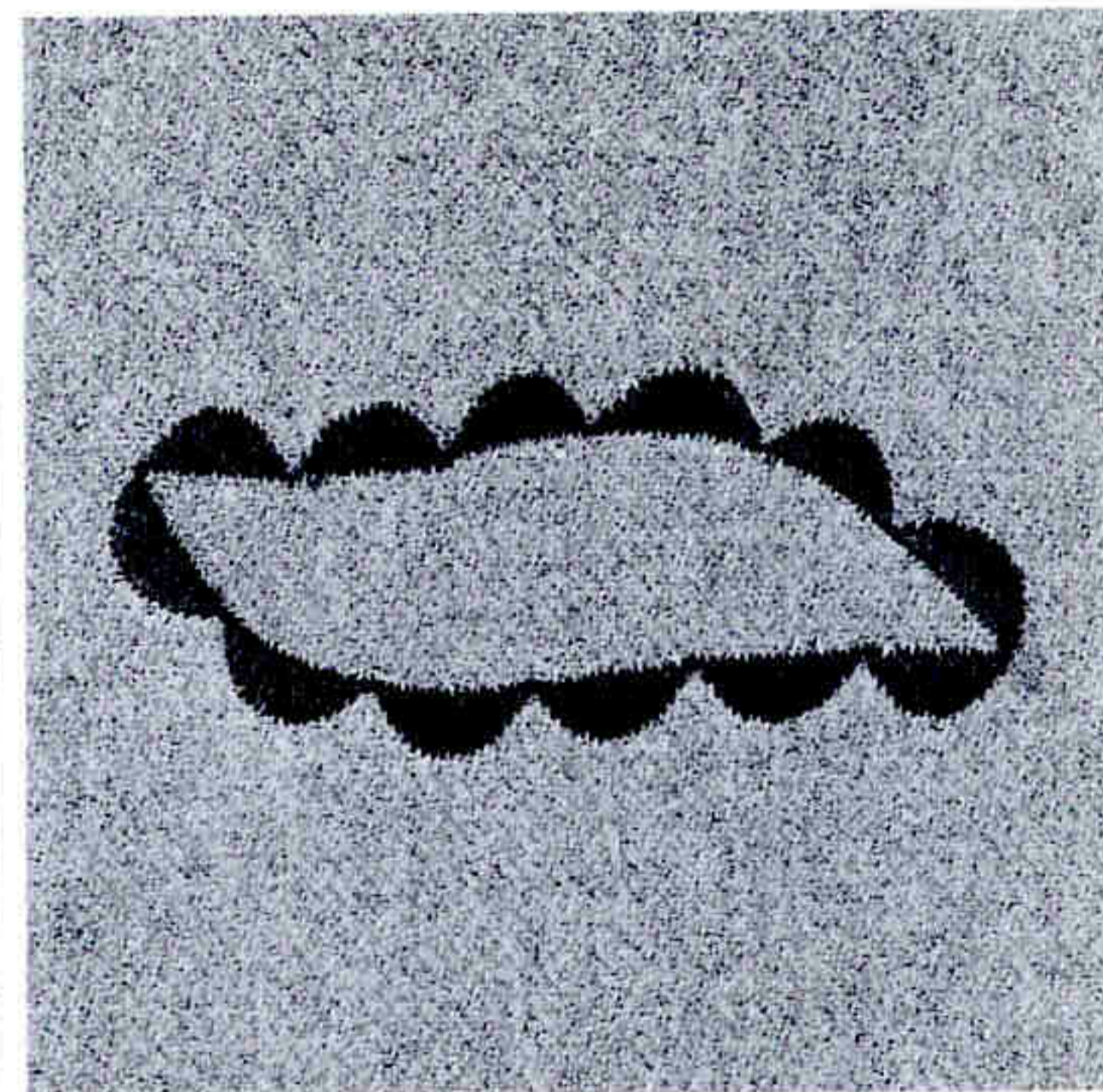
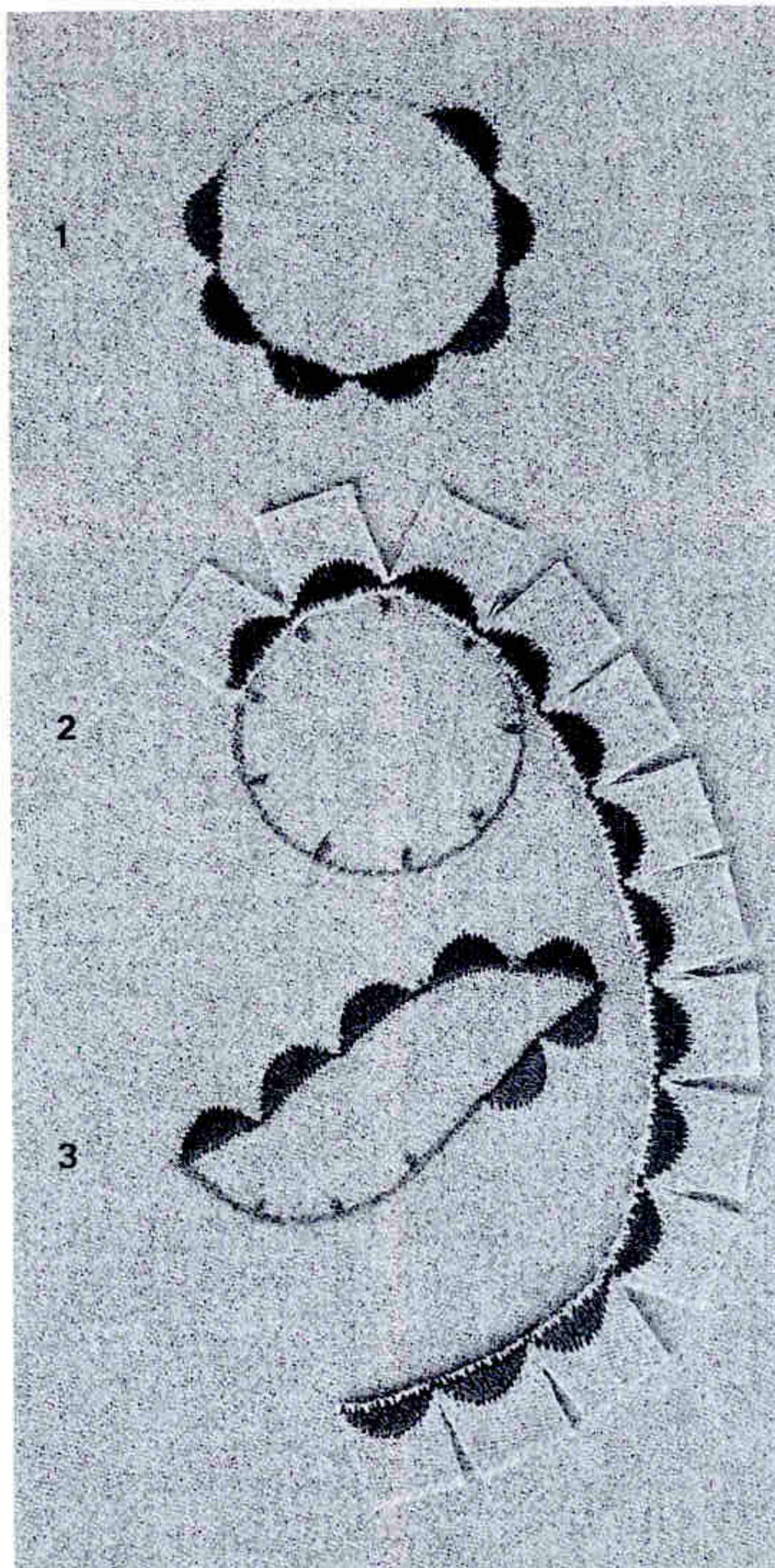
Method: (Figs. 2 and 3)

– Sew a sufficiently long trial piece (with paper underlay). Cut off edge of material fairly closely against straight edge of pattern.

– Snip material into curved side of pattern (Fig. 2).

– Place trial piece on circle or figure and check whether the patterns coincide (Fig. 2).

If not, alter stitch length very slightly and sew another trial piece. When the calculation is right, transfer dots to the design.



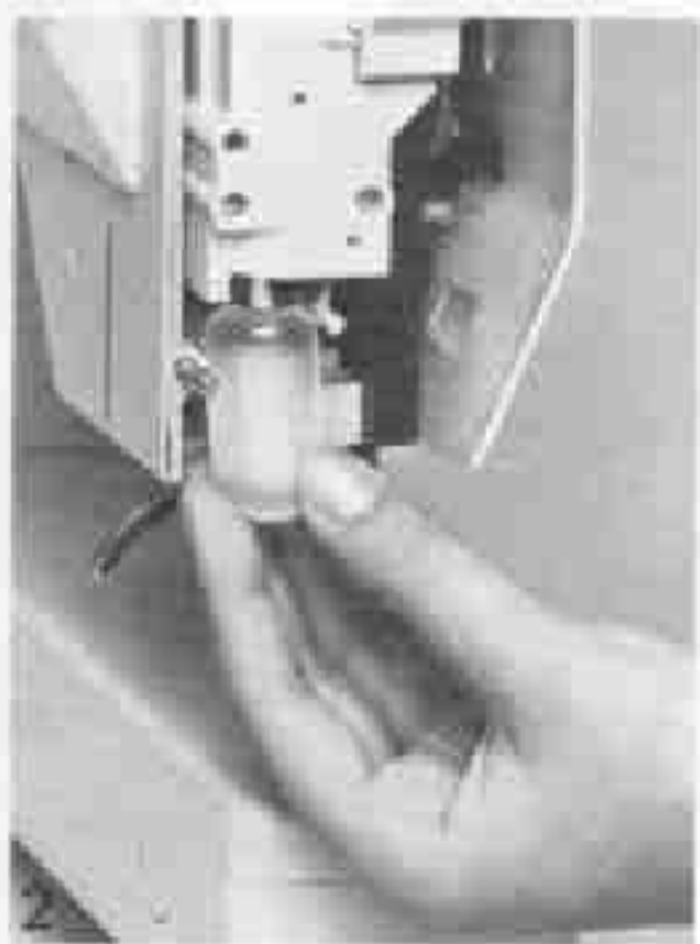
Changing the Bulb



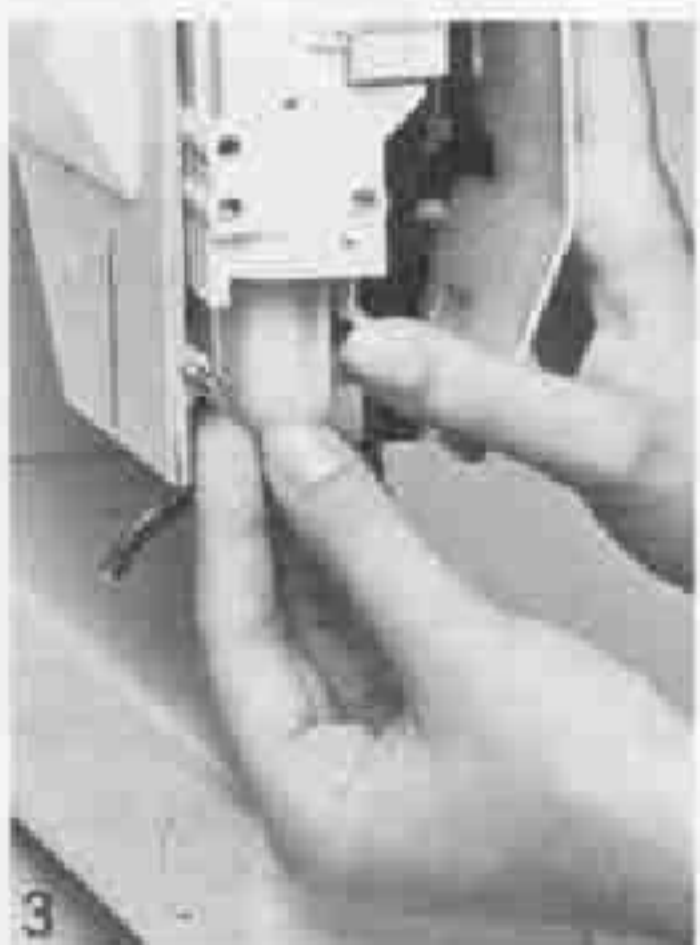
Use 15W bulb with bayonet socket.

- **Disconnect the sewing machine from the power supply by pulling out the plug from the socket.**

- Remove front cover (Fig. 1):
– Pull cover forwards steadily.



- Removing old bulb: (Fig. 2):
– Press bulb upwards, twist to left and withdraw.



- Inserting new bulb: (Fig. 3):
– Press safety strap to right with the right hand, insert new bulb with the left hand: press upwards and twist to right to the stop.

- Replace front cover.

Maintenance: Cleaning and Lubricating

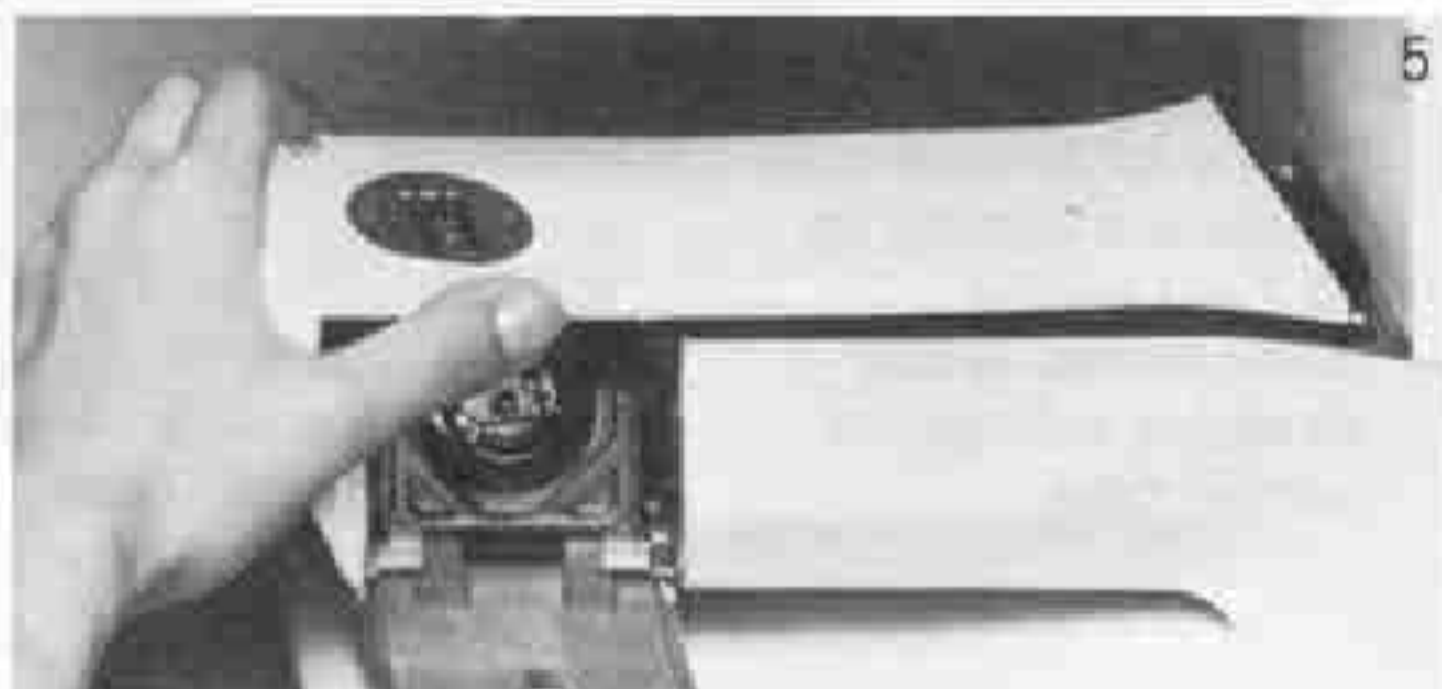
If the machine is kept in a cold room, it should be taken to a warm room about 1 hour before use to allow the oil in the bearings to become more fluid.

Cleaning

During sewing pieces of thread and fluff collect under the stitch plate and around the hook. These remnants must be removed from time to time. The free-arm cover has to be removed for this purpose.

- Set main switch to \odot
- Remove presser foot and needle
- Open hinged cover on free-arm
- Press with right index finger on the upper releasing lever (Fig. 4)

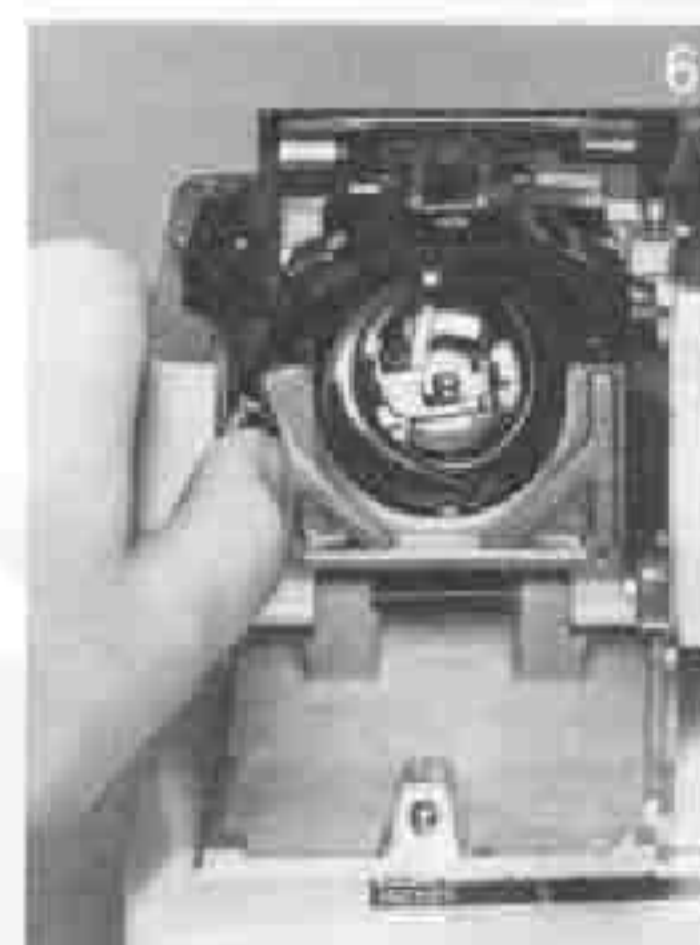
- Lift off free-arm cover (Fig. 5)
- Clean feed-dog, underside of stitch plate and free-arm cover.



- **Lubricating the hook: 1–2 drops of oil after 3–4 hours sewing**

Cleaning the hook

- Set main switch to \odot
- Remove bobbin case (see page 5)
- Press lower releasing lever to left with the left thumb (Fig. 6). The half-round locking strap with the black hook race cover can now be swung down.
- Remove hook (Fig. 7)
- Clean hook race top and bottom with brush and cotton cloth. Never use a screwdriver or scissors, etc. to remove pieces of thread!
- Oil hook race slightly (Fig. 8)
- Turn hand-wheel if necessary until hook driver is on left and replace hook.
- Close black hook race cover and locking strap. The latch must engage
- Check by turning hand-wheel
- Insert bobbin case



Prevention of Faults

If the sewing machine does not sew satisfactorily, it is usually due to incorrect operation.

Check whether:

- upper and lower threads are correctly threaded
- the needle is correctly fitted, flat side of shank at rear
- the needle size is correct, see Needle and Thread table, page 10
- the machine is clean, remove free-arm cover, brush out remnants of thread
- the hook race is clean and oiled
- remnants of thread are trapped between the thread tension discs and beneath the bobbin case spring
- the buttonhole knob is set to ○

Upper thread breaks

- upper thread tension too tight
- poor quality needles, preferably buy needles from a Bernina dealer
- needle fitted incorrectly, flat side of shank must be at rear
- needle blunt or bent
- poor quality thread, knotted thread, thread dried out due to prolonged storage
- Needle plate or hook tip damaged, take to Bernina dealer.

Lower thread breaks

- lower thread tension too tight
- bobbin jams in bobbin case, replace bobbin

- hole in stitch plate damaged by needle, must be polished by expert
- needle blunt or bent.

Faulty stitches

- wrong needles, use only needle system 130/705
- wrong size needle for thread being used
- needle blunt or bent, not fitted correctly, push right up when inserting
- poor quality, roughly polished needle
- needle tip shape does not suit material to be sewn, if necessary use ball-tip for knitted materials and cutting tip for hard leather
- lower thread is still threaded in finger of bobbin case.

Needle breaks

- needle clamping screw not sufficiently tightened
- the material was withdrawn from the front instead of the real under presser foot
- while sewing over thick parts material was pushed while needle was still in the material, use jeans foot.
- poor quality thread, irregularly twisted or knotted.

Tension errors

- thread remnants between the thread tension discs
- thread remnants under bobbin case spring
- thread threaded in finger of bobbin case as for buttonhole sewing

- threaded with foot lowered
- wrongly threaded, check upper and lower threads

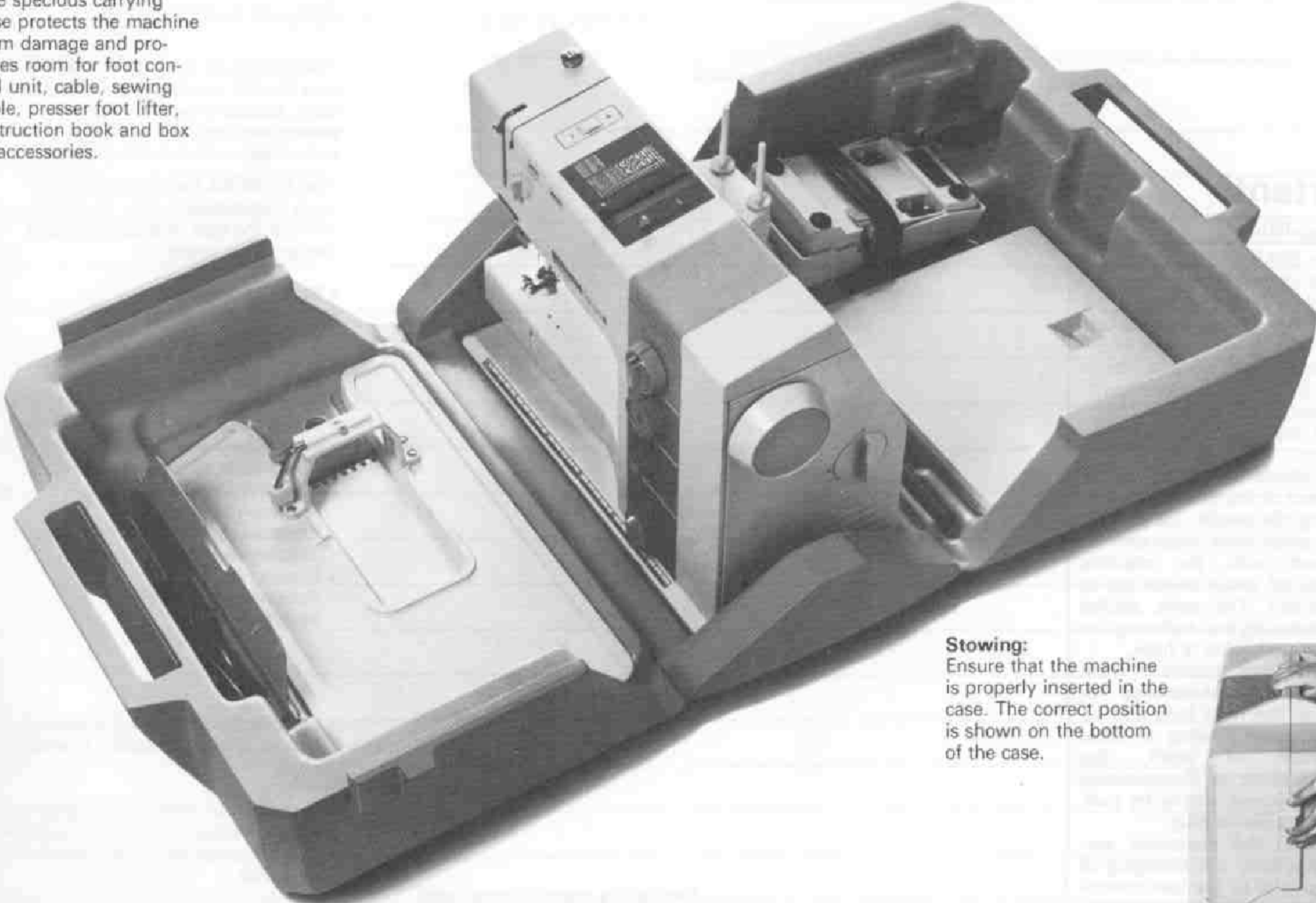
Machine runs slowly or not at all

- plug not fully inserted
- main switch at ○
- winder cover not closed
- main switch at ●, reduced sewing speed
- machine movement blocked by unsuitable oil, machine must be cleaned by an expert
- machine has been standing in a cold room.

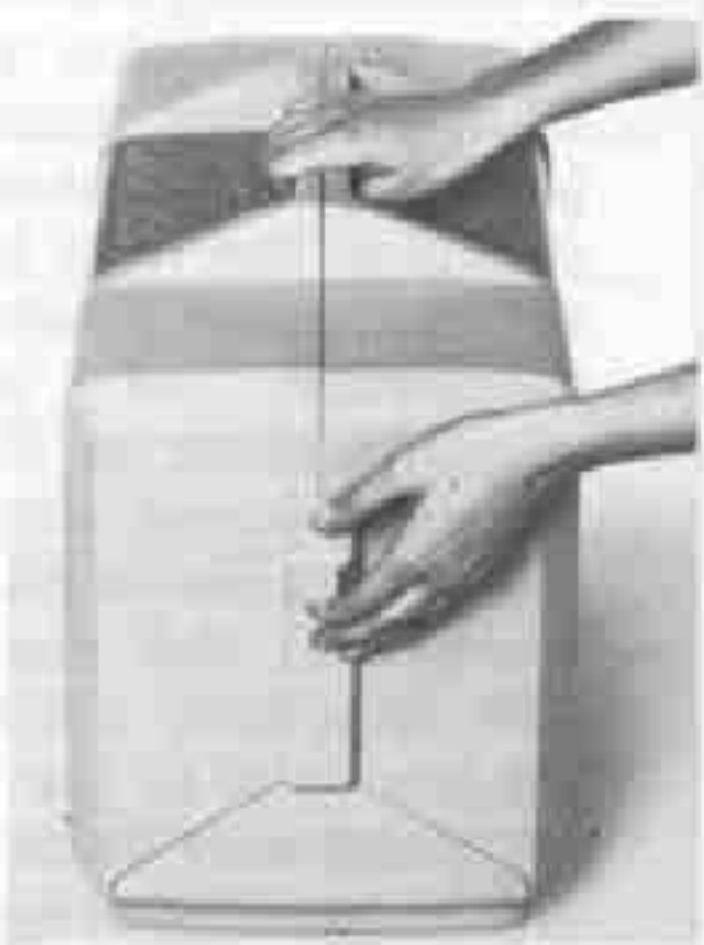
If you take your machine to an expert, **please always take foot control and accessories!**

Stowing in Carrying Case

The spacious carrying case protects the machine from damage and provides room for foot control unit, cable, sewing table, presser foot lifter, instruction book and box of accessories.



Stowing:
Ensure that the machine is properly inserted in the case. The correct position is shown on the bottom of the case.




Important!

Safety Regulations

Subject to BEAB and OSHA safety regulations (official testing centers in Great Britain and the U.S.A.).

The following safety regulations must be observed without fail:

- The moving needle is a source of danger (risk of injury to fingers). The sewing position must therefore be kept under constant observation.
- Manipulations within the area of movement of the needle, such as changing the needle, the presser-foot or stitch plate, must only be performed with the machine switched off (main switch set to  position). The same applies when removing and replacing the lower thread bobbin or hook.
- **During maintenance work** (cleaning or lubricating) or changing the light bulb and interruptions in sewing or after completion of work, the machine must be disconnected from the power supply by pulling out the mains plug.
- Repairs to the electronic section, especially the changing of the lead wire to the foot control unit, may only be carried out by one of our service agencies.

Special accessories

The contents of the present «My Bernina Guide» only cover basic sewing work, especially practical routine sewing and the basic principles of embroidery with decorative stitches.

Your BERNINA has of course many more possibilities to offer you particularly in the field of embroidery and design, for example:

- **Broderie anglaise**
 - **Circular embroidery**
 - **Cording**
 - **2- and 3-needle work**
 - **Free-hand embroidery**
 - **Hem stitches**
 - **Embroidery with pearl yarn / wool**
 - **Embroidery with metal thread**
 - **Buttonhole stitch embroidery (Cavelier foot)**
 - **Imitation smocking**
 - **Practical application of the decorative stitches**
 - **Sewing on buttons**
 - **Hemmer / shell hemmer / lap hemmer etc.**
-
- **For this type of sewing a special foot or special accessory is available.**

Your BERNINA dealer will be glad to give you information and advice on the additional possibilities your machine has to offer.

The right to make constructional changes differing from text and illustrations is reserved.



Fr. Gegauf Ltd.
Manufacturer of Bernina
Sewing Machines
Steckborn / Switzerland

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