

# Knitting with your **SINGER**

The superb  
new  
knitting machine  
with a  
famous name



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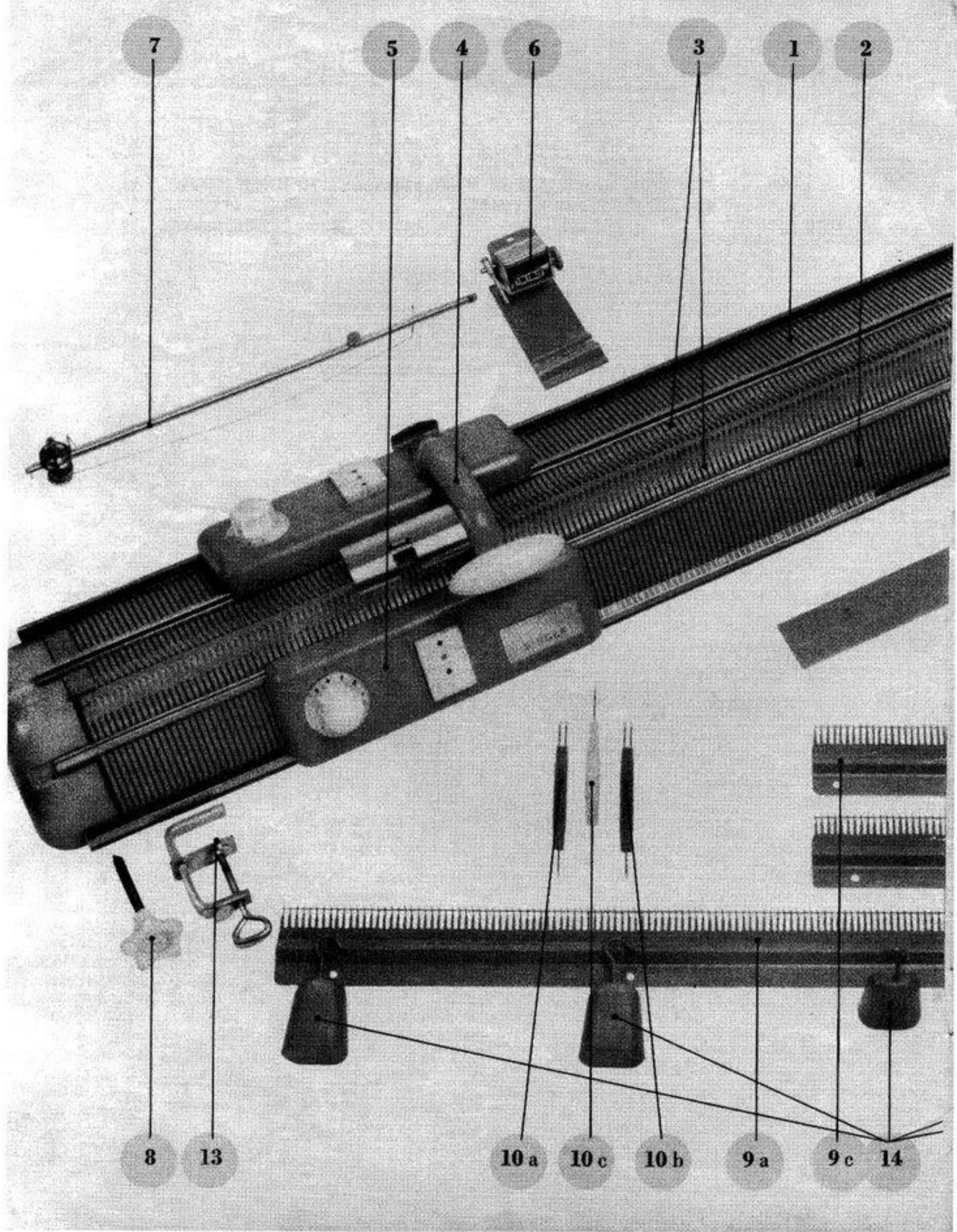
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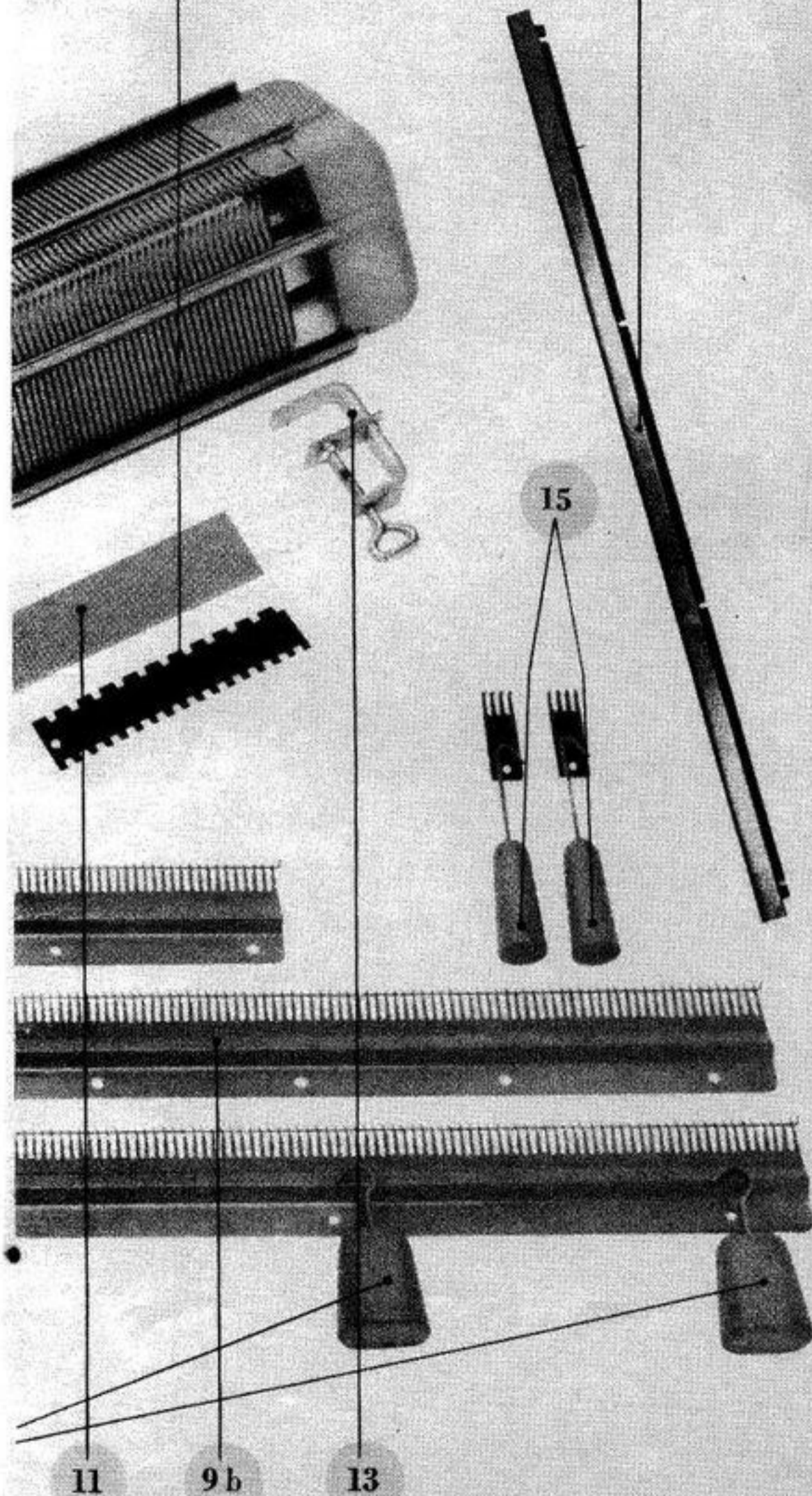
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SINGER





- 1 BACK BED
- 2 FRONT BED
- 3 NEEDLES
- 4 BACK CAM BOX
- 5 FRONT CAM BOX
- 6 ROW COUNTER, with stand
- 7 TENSION ARM
- 8 RACKING SWITCH
- 9 STEEL STRIPS (2)

### *ACCESSORIES*

- 9 a COMB (180 STITCHES)
- 9 b COMB (100 STITCHES)
- 9 c COMB (50 STITCHES)
- 10 a GREEN TRANSFER TOOL (1 EYELET NEEDLE + 2 EYELET NEEDLES)
- 10 b RED TRANSFER TOOL (1 EYELET NEEDLE + 2 EYELET NEEDLES)
- 10 c YELLOW TRANSFER TOOL (1 LATCH NEEDLE + 1 HOOK)
- 11 RULER (FOR PUSHING NEEDLES)
- 12 SELECTOR
- 13 CLAMP (2)
- 14 WEIGHTS (5)
- 15 EDGE WEIGHTS (2)



**SINGER\***

**Y**ou have become the happy owner of a *SINGER KNITTING MACHINE*. Solidly built, technically well designed, your Singer Knitting Machine will enable you to make up knitted garments for all your family. It will give you pleasure, whilst also saving you time and money.

This booklet is aimed at familiarising you with your knitting machine, and to be your guide in obtaining the best results; it contains practical advice for knitting, together with a selection of stitches which you may vary, to make any pattern you wish.

Any further advice that you may need can be obtained from your local *Singer Centre*.

# 1<sup>st</sup>

## CHAPTER

### FOR BEST RESULTS, YOU MUST FIRST GET TO KNOW YOUR KNITTING MACHINE

*For more than a century the sewing machine has been both a familiar and indispensable sight in every home. It is very rare these days to come across a lady who has never used a sewing machine, either her mother's or a friend's.*

*Nowadays, most women are capable of operating and maintaining a sewing machine, and girls are taught how to use them at school.*

*With the knitting machine, the problem is altogether*

*different. Introduced more recently to the housewife, after many years of use in the industrial field, it is necessary, in order to obtain best results, not only to follow the lessons and advice given, but to understand completely how it works.*

*On reading this first chapter you will get to know all the parts and be able to familiarise yourself with the accessories. Firstly, note pages 2 and 3, and then read carefully the pages that follow.*

## I ★ THE MACHINE CONSISTS OF THE FOLLOWING

### COMPONENT PARTS

1 needle bed of light alloy . . . . . Back Bed  
1 needle bed of light alloy . . . . . Front Bed  
360 needles  
1 Cam Box . . . . . Back Cam Box  
1 Cam Box . . . . . Front Cam Box  
1 row Counter  
1 tension arm  
1 racking switch  
2 steel strips

### ACCESSORIES

1 mounting comb . . . . . 180 stitches  
1 mounting comb . . . . . 100 stitches  
1 mounting comb . . . . . 1/50 stitches.  
1 transfer tool . red 2 needles with eyelet (+ 1)  
1 transfer tool . green 2 needles with eyelet (+ 1)  
1 latch needle yellow (+ 1 crochet)  
1 needle selector  
1 needle-thrust ruler  
2 clamps for fixing machine with thread eyelets  
5 weights  
2 edge weights  
1 instruction book  
5 needles

## II ★ PARTS AND THEIR USES

### NEEDLE BEDS

The needle beds hold the needles and the rails on which the cam boxes glide. The flow combs are on the front of each bed (**FIG. 1**).

BACK BED is fixed.

FRONT BED has three positions.

OPEN POSITION for visibility of work—facilitating certain operations (decreasing, openings, etc.) (**FIG. 2**).

NORMAL POSITION for ribbing, racking, circular and semi-circular knitting, all stitches using front bed and back bed (**FIG. 3**).

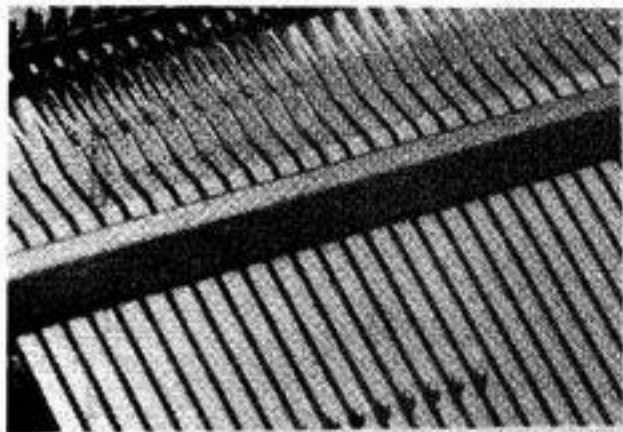


FIG. 1

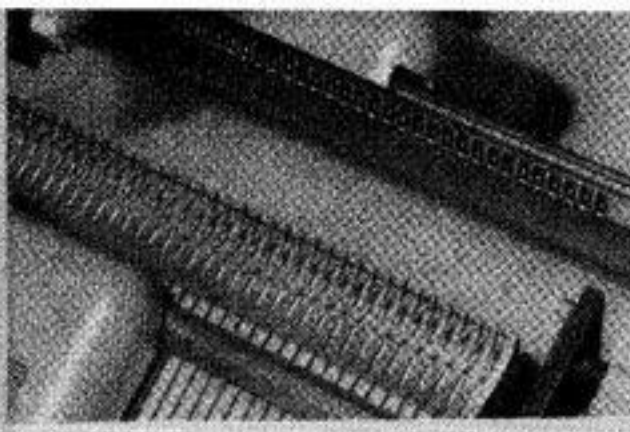


FIG. 2

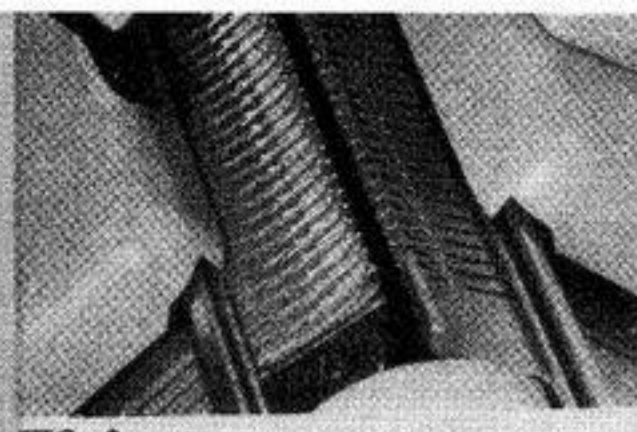


FIG. 3

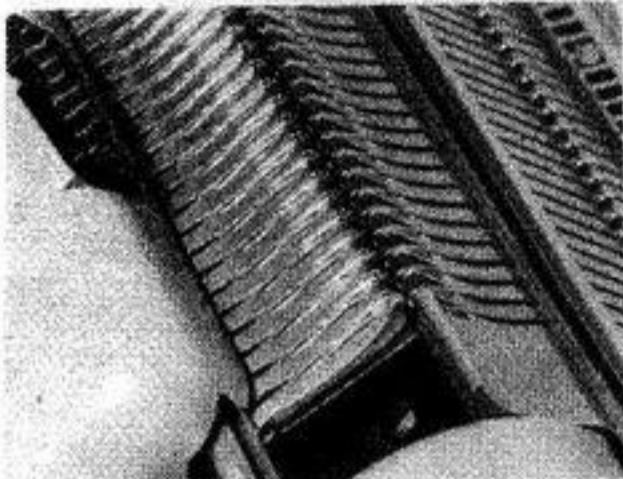


FIG. 4

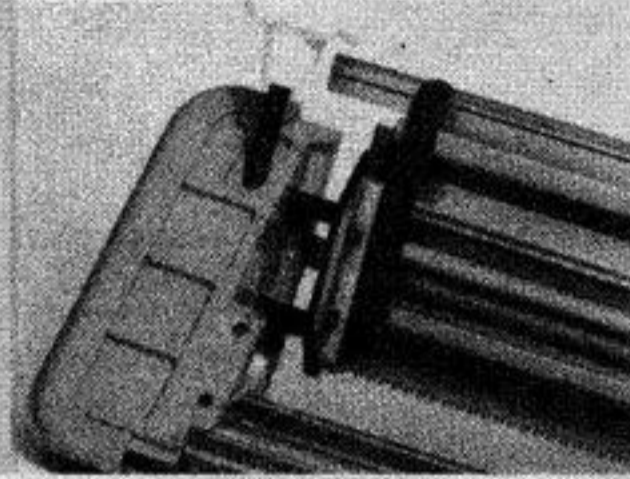


FIG. 5

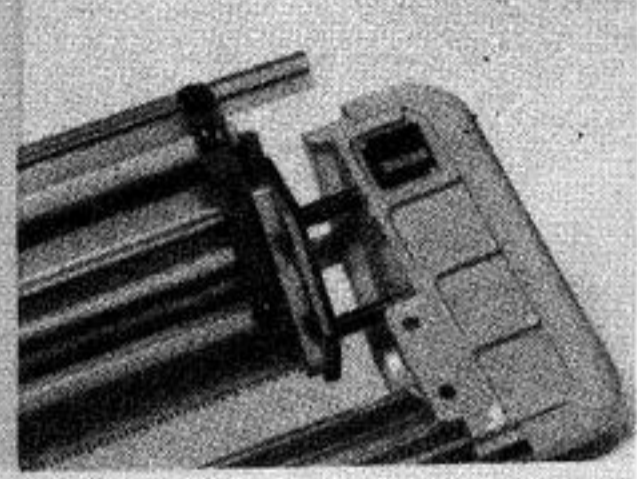


FIG. 6

**UPPER POSITION.** For knitting stocking stitch: Work with back cam box only (front CAM BOX is not used) (FIG. 4).

At each end of the front needle bed there is a lever which controls these three positions. Moving these two levers simultaneously towards the centre, permits the needle bed to slide into one of the three positions without difficulty (FIGS. 5 and 6).

### Flow combs

The flow combs allow the wool to slide from one needle hook to another. According to the work which is to be carried out (on back bed and front bed) these teeth should be either face to face (FIG. 7) or spaced out by one notch (FIG. 8).

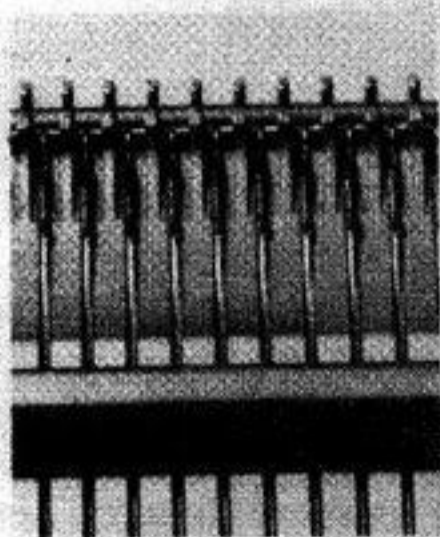


FIG. 7

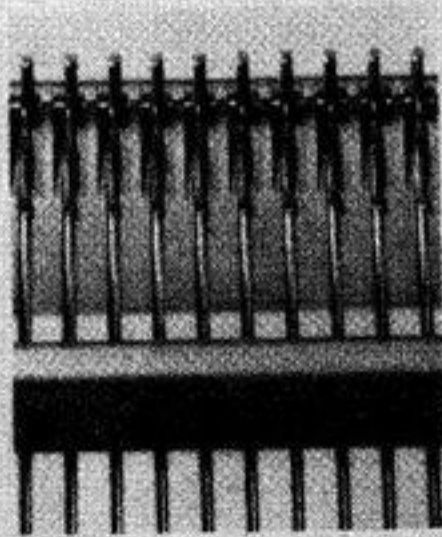


FIG. 8

### Wing pieces

At each end of the needle beds there is a special clamp for fixing the machine to the work table (see page 12). Each clamp can be screwed into the correct position to grip the edge of the table.

On the left wing piece is fixed the racking switch (FIG. 9).

### ROW COUNTER

Placed on the back bed (FIG. 10) it supports the tension arm. At each movement of the back cam box, the registering finger is raised and marks a row (FIG. 10 a). To return to 000, turn the knob backwards (FIG. 10).

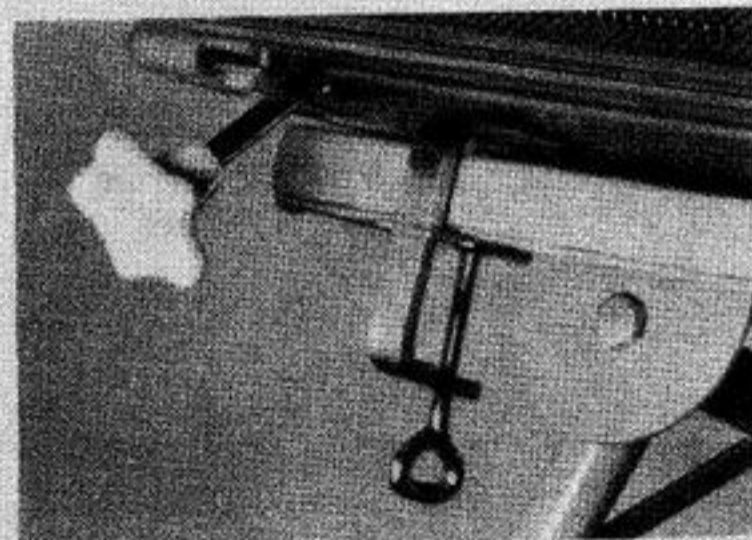


FIG. 9



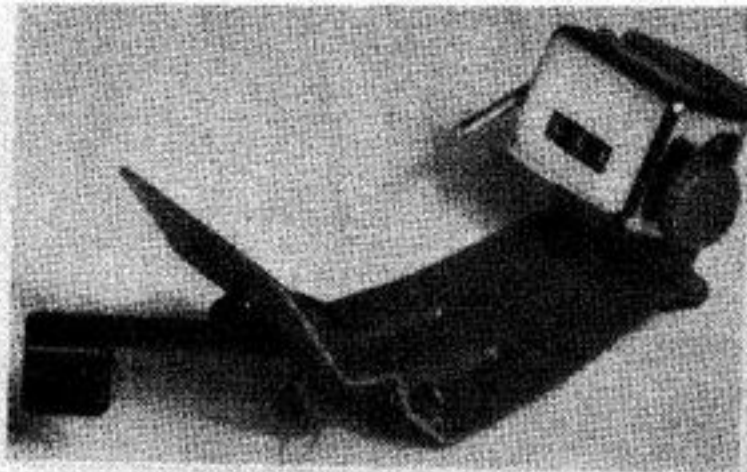


FIG. 10



FIG. 10 a

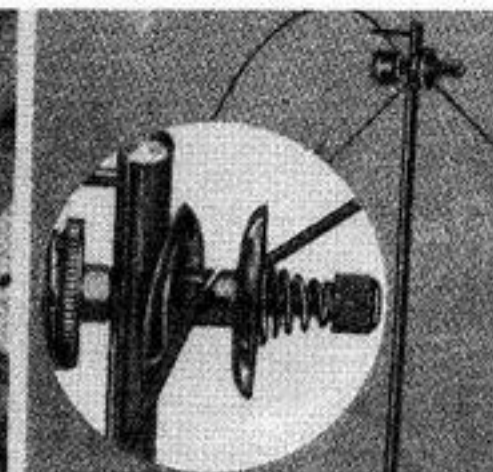


FIG. 11

## TENSION ARM

The tension arm regulates the movement of the wool, and assures a constant tension. (It is composed of a guiding spring and discs.)

Its function is comparable to that of the tension regulator on a sewing machine.

After sliding the shaft of the tension arm into the openings on the row counter, proceed to the span wire which, when not in use, is slack (FIG. 11).

Holding the span wire 'X' in such a position that it is against the wire of the attachment 'Y', tighten the screw 'Z' around the spindle. When the span wire is correctly positioned, it should be springy.

## CAM BOXES

The Machine has two cam boxes, complete and independent of each other.

BACK CAM BOX (FIG. 13 A).

FRONT CAM BOX (FIG. 13 B).

As a result of the working of the cams (2 mobile (C) and 3 fixed (D) (FIG. 14), the needles, which are fed with wool from the thread-guide, will knit. Springs (E) (FIG. 14) enable the needles to be arranged before the cam box moves completely across.

Because of the catches (G and H) and the lever (F) (FIG. 15) the cam boxes may be separated. The back cam box, for example, may be used alone on the back bed. The front bed cam box is then completely disengaged (FIG. 15). Catch 'G' is used for all knitting except circular and semi-circular knitting, when Catch 'H' should be used.

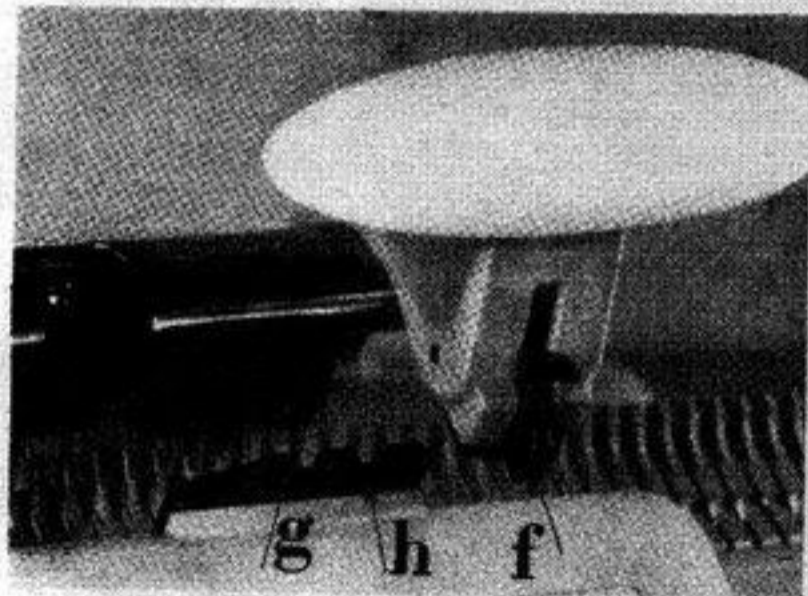


FIG. 15

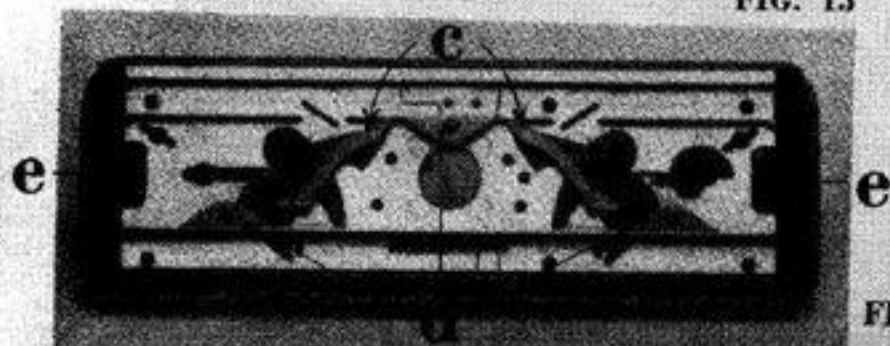


FIG. 14

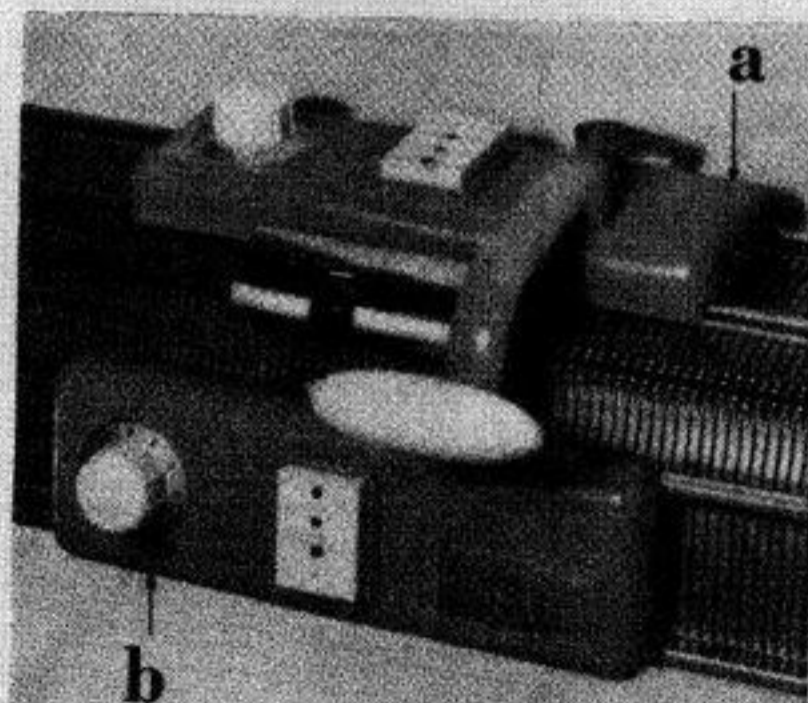


FIG. 13

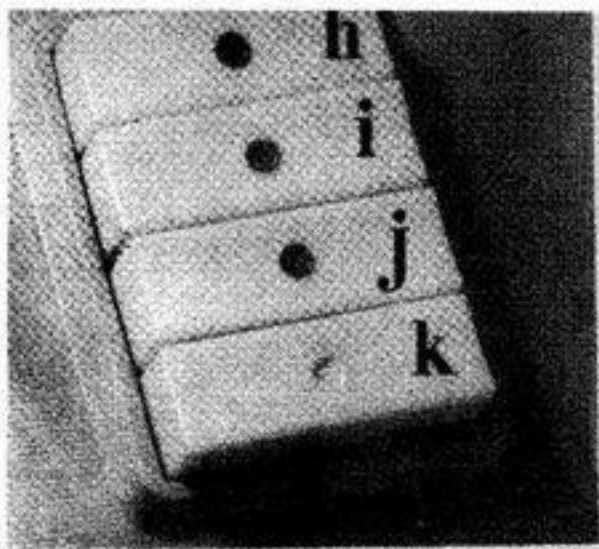


FIG. 16

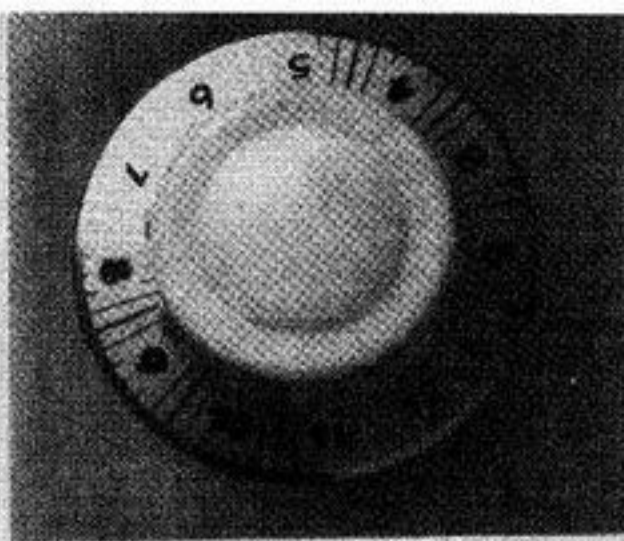


FIG. 17

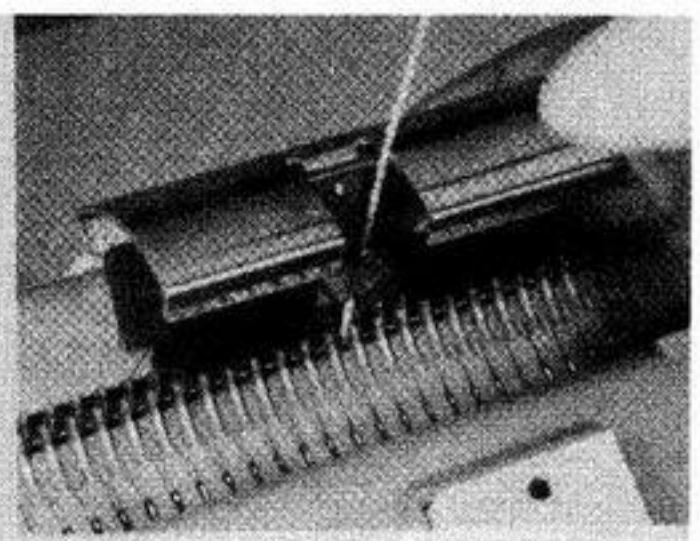


FIG. 18

### Keyboard (FIG. 16)

Blue dot H: Cancels all cams (non-working).

Red dot I: Cams for stocking stitch (work with back cam box), close rib, rib 1/1 (work with back cam box and front cam box).

Green dot J and Yellow dot K: These two keys can be used either separately (green for circular knitting) or together for Fishermans' ribs and varied automatic stitches.

### Tension Control Knob (FIG. 17)

There is one adjusting knob on each cam box. By changing the size of the stitch, you regulate the pliancy of the knitting.

Slack stitch: turn towards No. 12.

Tight stitch: turn towards No. 1.

The guide-mark (X) is shown on each cam box, above the tension control knob, by a red dot.

### Thread Guide

Feeds the wool into the needles. It is slotted, which allows the wool to be slipped in and out of place without the necessity of cutting it (for stripes, Fair Isle, etc.) (FIG. 18).

### Brushes

The function of the four brushes is to secure the work by opening the latches which remain closed before the passing of the wool, thus eliminating dropped stitches, and allowing the knitting to be done rapidly (FIG. 19).

### NEEDLES

There are 360 needles, 180 on each needle bed.

Each needle (FIG. 20) consists of:

- a foot.
- a movable latch which opens or shuts.
- a hook which holds the stitch.

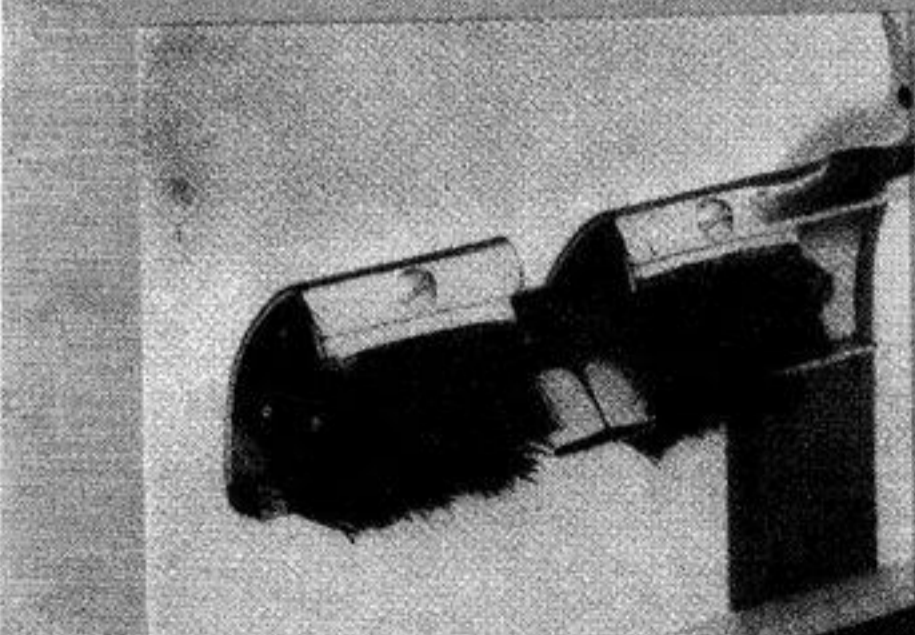


FIG. 19

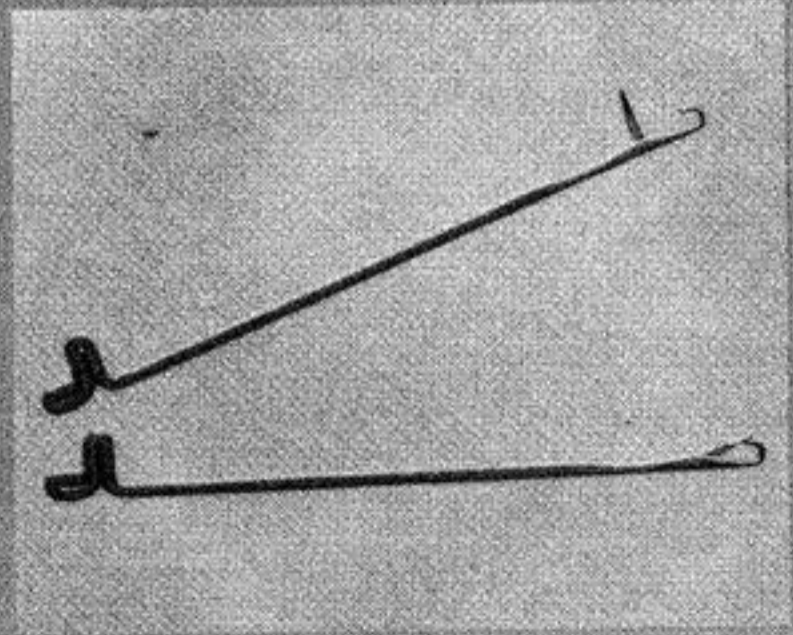


FIG. 20

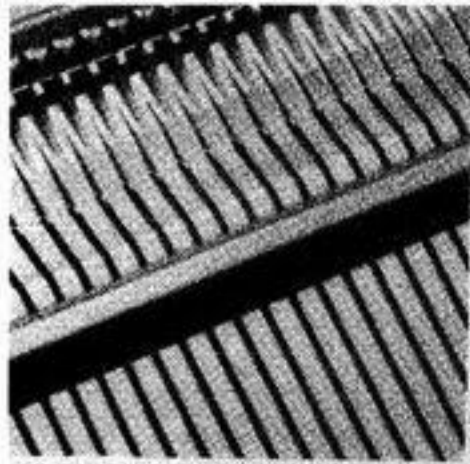


FIG. 21 A

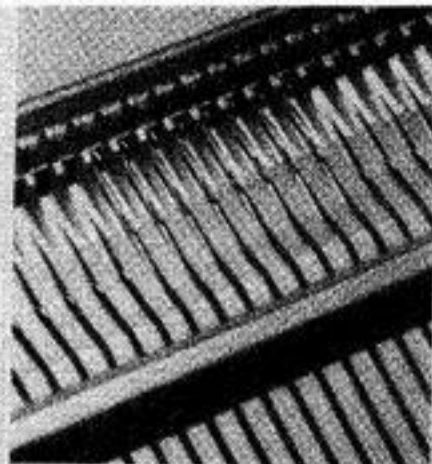


FIG. 21 B

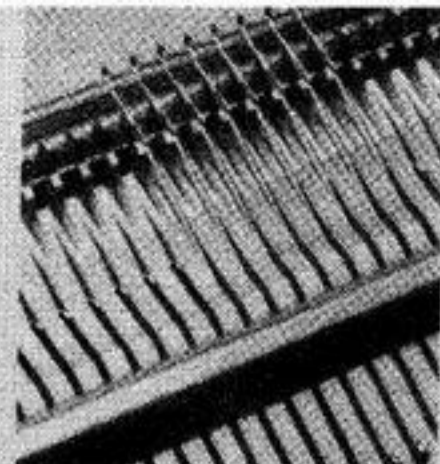


FIG. 21 C

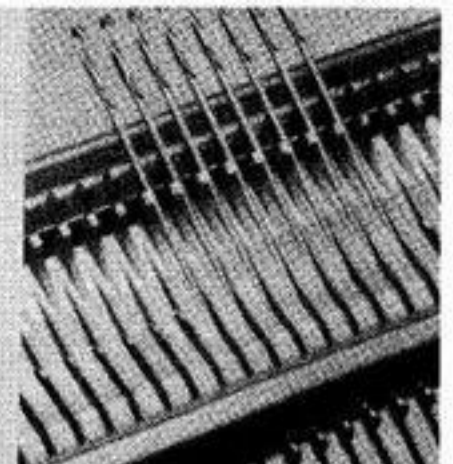


FIG. 21 D

### Position of needles on back and front beds

#### Non-working (FIG. 21 A)

When not working, the feet of the needles touch the graduated scale. Be sure that, when only some of the needles are in use, the non-working needles are in this position.

#### Working Position 1 (FIG. 21 B)

Normal knitting position with the wool in the thread guide: the hook of each needle meets the flow combs.

#### Working Position 2 (FIG. 21 C)

The hook of the needle stands away from the needle bed and the loop of the stitch is behind the latch of the needle. This is an intermediate position used when returning needles from holding to working position 1.

#### Holding Position (FIG. 21 D)

The needles are standing out completely from the needle bed, held by their feet under the slide rail. They are no longer working. This is the position used for raised patterns, sock heels, darts, etc.

### Position of the back bed needles in relation to those on the front bed

In order to perform some stitches, the needles are put in racking position. Check carefully before commencing work that the needles are not in the face to face position, causing them to rest

or rub against each other. If necessary, move the racking switch to balance the needles.

### RACKING SWITCH

fixed on the left wing piece (FIG. 22).

The white star-like knob controls the transferring movement of the front needle bed (for racking stitches and zig-zag). The principle of racking and transferring is the subject of Chapter II, page 23.

### STEEL STRIPS

The two steel strips enable the knitting of fine and medium wools. For knitting 'double-knitting' wool the strips are removed.

To remove, open the front bed and lift out the steel strips. When replacing, make sure that the slots are held behind the studs, on the two needle beds.

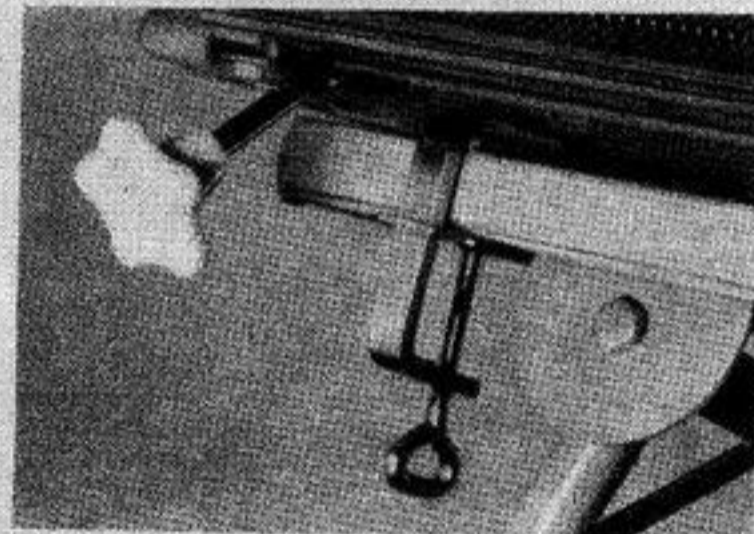


FIG. 22

## III ★ ACCESSORIES AND THEIR USES

### MOUNTING COMBS AND WEIGHTS (FIG. 23)

The mounting combs hold the knitting and support the weights which control the regular descent of the work. In controlling the 'length'

tension, they counterbalance that of the 'width'. The use of weights does in no way tend to slacken the work. On the contrary, they help (as in industrial knitting machines) to control the regularity of the knitting in accordance with the supply of wool from the tension arm.

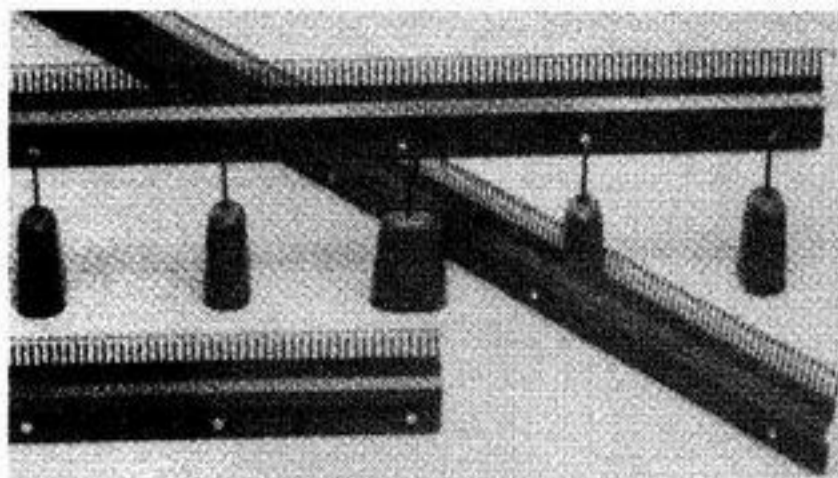


FIG. 23

### Their uses

The selected comb, decided by the initial number of stitches, is passed between the two needle beds of the machine with or without its steel wire and the recessed side faces the back bed when using the small and medium comb, the front bed when using the large comb. (See Chapter II).

To withdraw the steel wire 'X', hold the lower (bent part) of the comb and slide the wire out of the teeth (FIG. 24). To replace the steel wire, direct the point into the first tooth hole and then lightly guide it through the other teeth. To facilitate this threading, it helps if the wire is gently turned between the fingers in a circular movement until the point reaches the end of the comb.

Each steel wire should be replaced in the correct comb after use in preparation for the commencement of fresh work.

When the mounting comb is in position and when the steel wire holds the wool, it is imperative

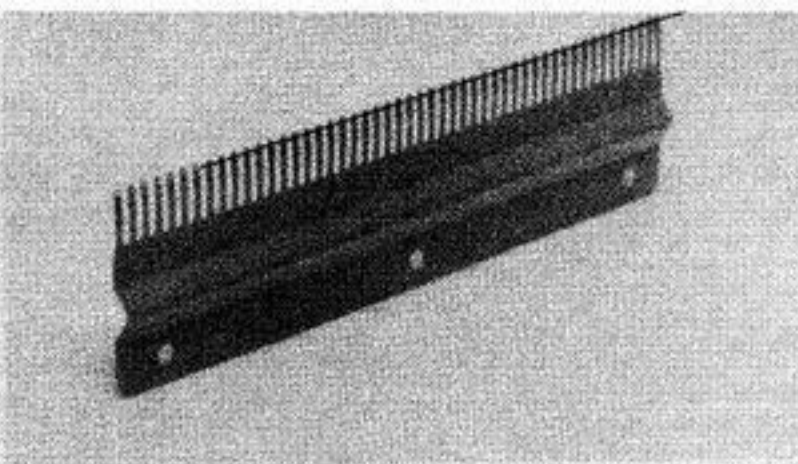


FIG. 24

to hook the weights in such a position that the comb is horizontal.

During work this position must be maintained. Should, therefore, any increasings or decreasings upset this balance, the weights must be moved to the right or left as necessary, or replaced.

Before the weights touch the ground, it is necessary either to raise the comb or roll the knitting. For the first solution, exercise a light pull on the work, unhook the weights (fixed to the comb), remove the steel wire and take out the comb. Hold it out behind the work, just at the edge of the needle beds, and pass it across the knitting. Then replace the steel wire.

The second solution consists of unhooking the weights, then rolling the work already executed around the comb. The knitting can be held at each side by a stitch holder or a large safety pin (this method is recommended for close knitting such as stocking stitch, ribbing, etc.).

### EDGE WEIGHTS (FIG. 25)

Two in number, they are each composed of a claw and a hole for the fixing of the appropriate weights.

As their name indicates, their purpose is to hold the edges of the work to prevent them rising.

Each claw, supporting the weights, is fixed to each end of the knitting and, depending on the wool being used and the pattern being worked, it controls the tension for ten to twenty rows.

The edge weights can also be used when increasing three to five stitches at the edges of the work (see page 28).

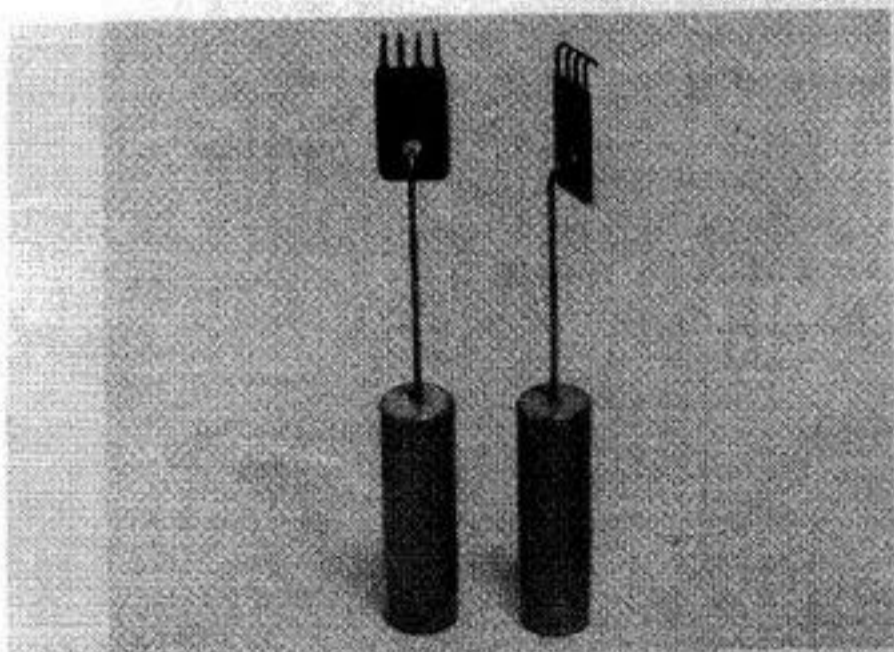


FIG. 25

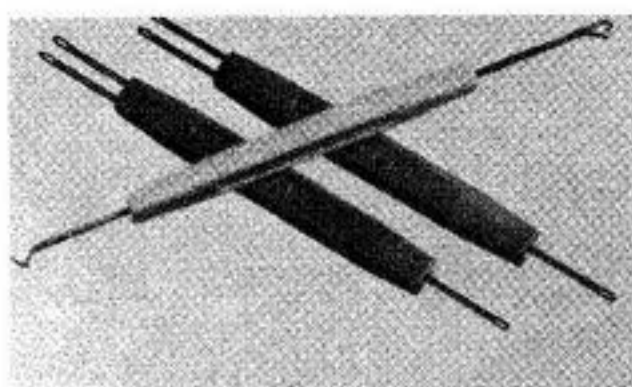


FIG. 26

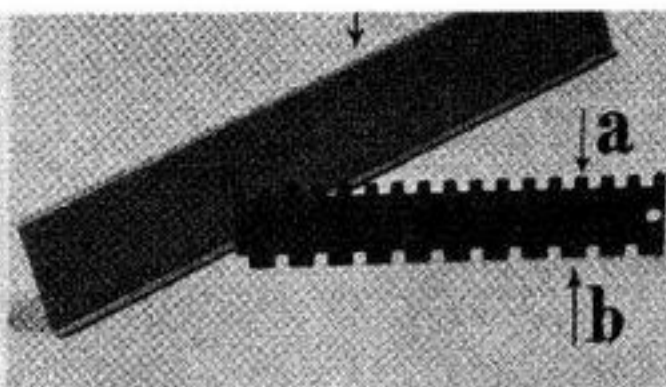


FIG. 27



FIG. 28

### STITCH TRANSFER TOOLS (FIG. 26)

**Green and Red.** Each is composed of one eyelet needle at one end and two eyelet needles at the other.

**Yellow.** A hook at one end and a latch needle at the other.

The latch needle is used to displace individual stitches for decreasing, casting on or casting off. The paired needles (green and red tools) enable two stitches to be displaced simultaneously for certain decreasings, increasings in the middle of the work, and for cable. The green and red tools used together facilitate the displacement of stitches enabling increasings and decreasings (such as the Italian style) which give a professional finish to certain work to be carried out.

#### Use

Engage the eye of the Stitch Transfer Tool into the needle hook and pull the latch needle towards you, so that the stitch which is in the hook slides behind the latch of the needle. Then push the needle back into its groove. The stitch slides on to the tool. The eye of the Transfer Tool is then transferred to the selected needle and the Tool is swung up to lever the stitch on to the head of the needle.

The hook serves to displace stitches from one needle bed to another and to catch a thread of the work when increasing. The latch needle is used to replace dropped stitches and for chain casting on and casting off.

FIG. 30



### NEEDLE SELECTOR (FIG. 27)

The side (a) is for pushing into the position 1, 2 or holding every other needle. The side (b) does the same thing, but displaces two needles at once.

#### Use

The end point slides into the groove of the first needle, and automatically mounts behind the foot of the selected needles (FIG. 28). By a simple push, a determined number of needles thus pass from the non-working position to No. 1 or No. 2 or holding positions.

### 'PUSH-RULER'

With one movement of the ruler, push the needles that are required to be mounted in position 'holding' (for necks, darts, Fair Isle) (FIG. 29) or brought from the position 'holding' to position 2 (FIG. 30).

### CLAMPS (FIG. 31)

Two in number, they fix the machine to the working table.

This fixture ensures perfect stability and improves the working of the machine. Under the clamp is fixed a thread eyelet which holds the wool when casting on (FIG. 31 a).

FIG. 29

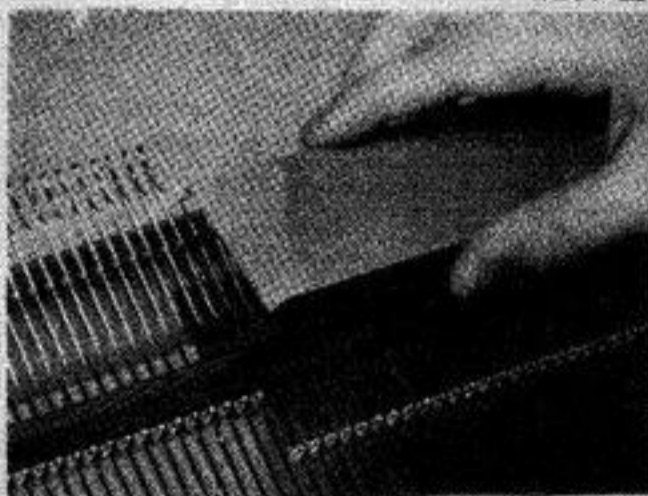
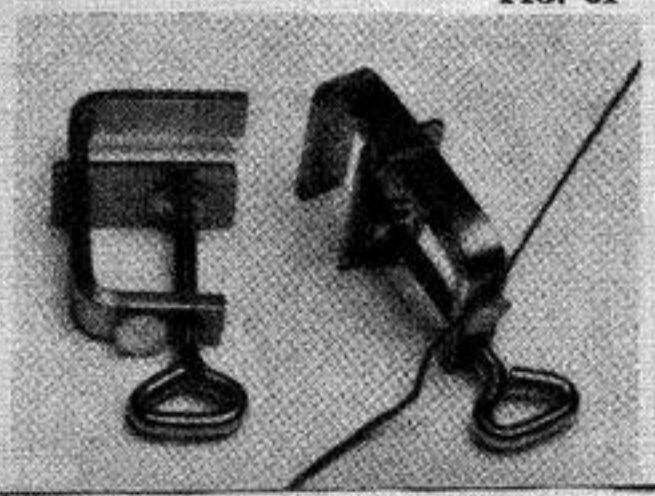


FIG. 31



Solidly and carefully built, your machine requires only a little attention.

### Cleaning

Use a brush (FIG. 32), preferably with supple, but firm, nylon hairs.

In order to remove all wool fibres, and dust, pass the brush through the grooves of the needle beds, behind the teeth of the flow combs, and under each cam box.

### Oiling

From time to time, lightly oil the parts underneath the cam boxes. Use a piece of rag lightly soaked in machine oil (FIG. 33). Pass this same piece of rag at the back of the needle feet.

For easy knitting, the cam box must slide smoothly.

Also oil the racks on which the front bed slides.

FIG. 34

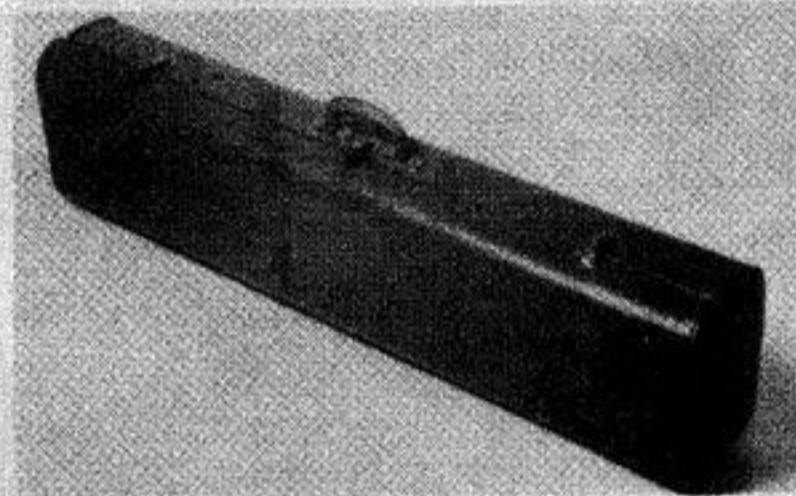
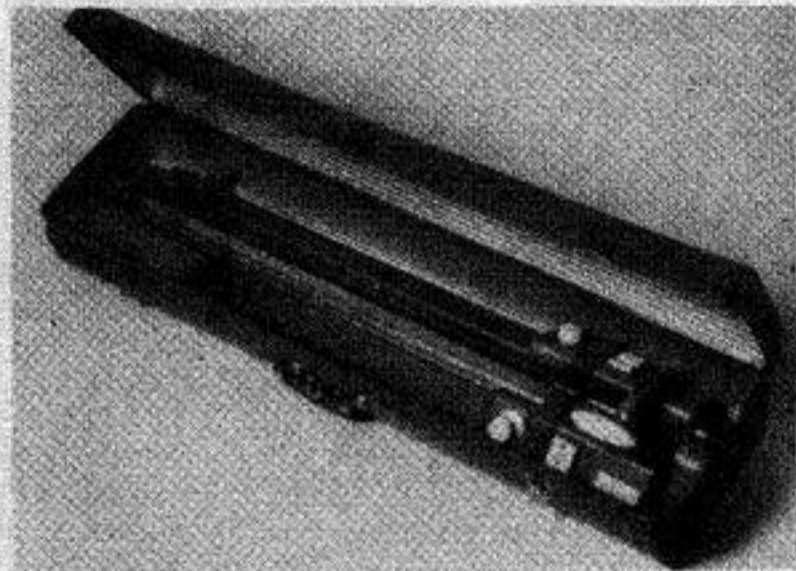


FIG. 35

FIG. 32

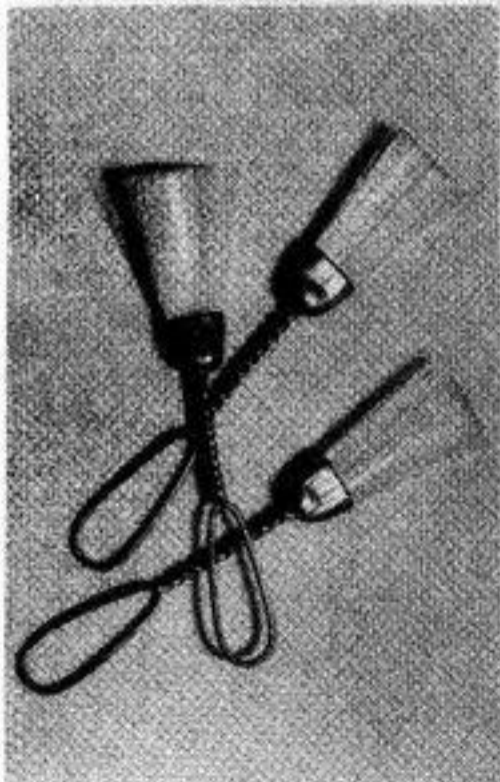


FIG. 33



### Storing

When you have finished a piece of work, return each accessory to its respective position in the carrying case; you will then start work the next time with everything to hand in its correct place.

### Point to note

The needles are not rust-proof. Should you not be planning to use your machine for some time, or should you live in a very humid climate, do make sure you protect them by placing a lightly oiled cloth on the needle beds (this is an important precaution if you live near the sea).

You now know your Machine, and you are ready to knit. Before attempting a complete piece of work, gather together a few odds and ends of wool and try your hand at knitting. You will then be familiar with the use of your machine prior to starting on your first garment.

Firstly, attempt to cast on a 1/1 rib. Knit a few rows, carefully regulating the tension of the stitch by means of the tension knob. Using the keys, knit a few more rows, starting with ribbing and single and double sided Fisherman's rib. Transfer the front bed stitches on to the free back bed needles, and knit a few more rows in stocking stitch.

If you repeat these stitches until you are quite familiar with them, you will have the basic operation of the machine well in hand.

To obtain the best results, take careful note of the following advice:

—Keep your eye on the wool flow and end stitches. Mount the edge weights when necessary.

—Slide the cam boxes without exerting pressure on the handle.

—After a few rows, unhook the wool from the clamp thread eyelet.

—Pass the cam box behind the edge stitch until you hear the click of the cams. This ensures that the edge stitch is knitted.

—In order to achieve the correct tension, before commencing a piece of work, try out the stitch with the wool that is to be used.

For very tight work, turn the tension knob on each cam box to number 1, and for very slack work to number 12.

### NOTE

Tension regulation is not governed by the size of the material used, but by the suppleness of the knitting which is required. Thus, fine wool worked in a lacy stitch necessitates a looser tension than an average wool worked in stocking stitch or rib. Just as for hand knitting, one uses small needles with fine wool for baby garments, etc.

Similarly, a less supple material (cotton or nylon) necessitates a looser tension.

To obtain a symmetrical pattern when using fancy stitches, find the centre point on the graduated scale and place the knitting on both sides of this point.

Never try to reverse the cam boxes when they are in the middle of a row. When decreasing do not forget to put the freed needles into non-working position.

### VERY IMPORTANT

The tension of the span wire is correct when it is flexible and rests against the thread stay. The wool must slide freely and easily through the braking discs.

In the course of work, the span wire must gently re-raise the thread when the last stitch in the row has been knitted.



# SINGER\*

*This chapter is concerned with the functioning of the machine. You will learn how to start a piece of work, and you will get to know the potentialities of your machine.*

*After reading carefully how a stitch is formed, study the paragraph on "Threading". Repeat this several times. Ensure that the tension arm is correctly erected so that the wool will flow regularly.*

*Firstly, you must learn how to commence stocking*

*stitch and ribbed work. Get to know how to do this, and you will then find it easier to learn and execute other stitches.*

*If you are not sure of anything, refer to the paragraph on the subject.*

## I ★ WORKING PRINCIPLES

### STITCH FORMATION

(See FIG. 1, p. 16.)

### TENSION

The tightness of the tension depends on the distance that the needle goes back (see FIG. 2, p. 16).

### FUNCTIONING

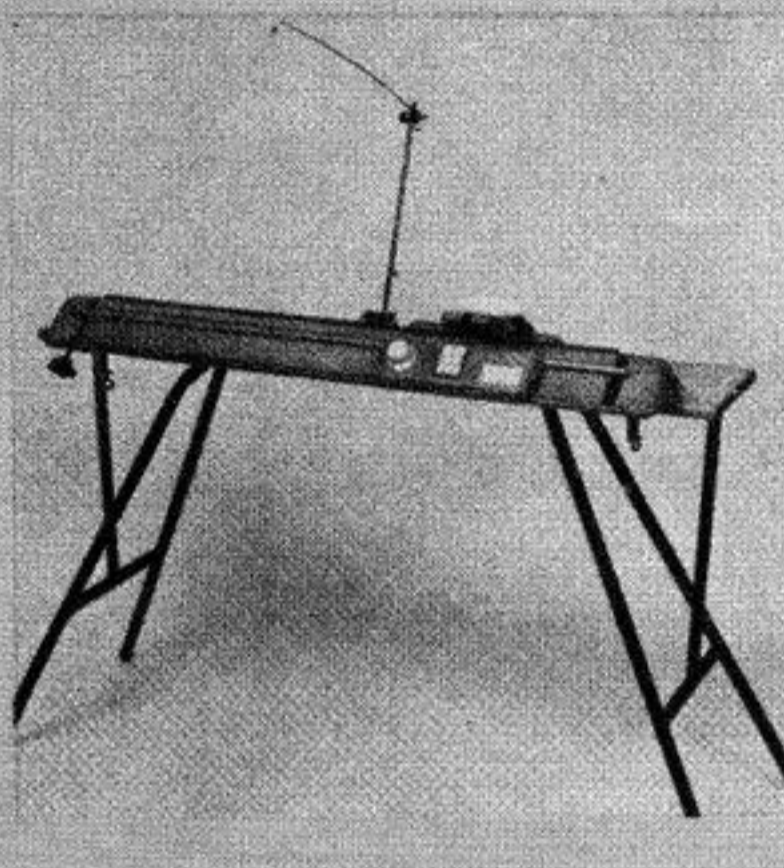
Knitting is accomplished by a simple sliding movement (left to right and right to left), using either the back cam box only for stocking stitch and its derivatives, or the back and front cam boxes for circular, semi-circular knitting, ribbing and fancy stitches.

## II ★ ASSEMBLING AND THREADING (FIG. 3)

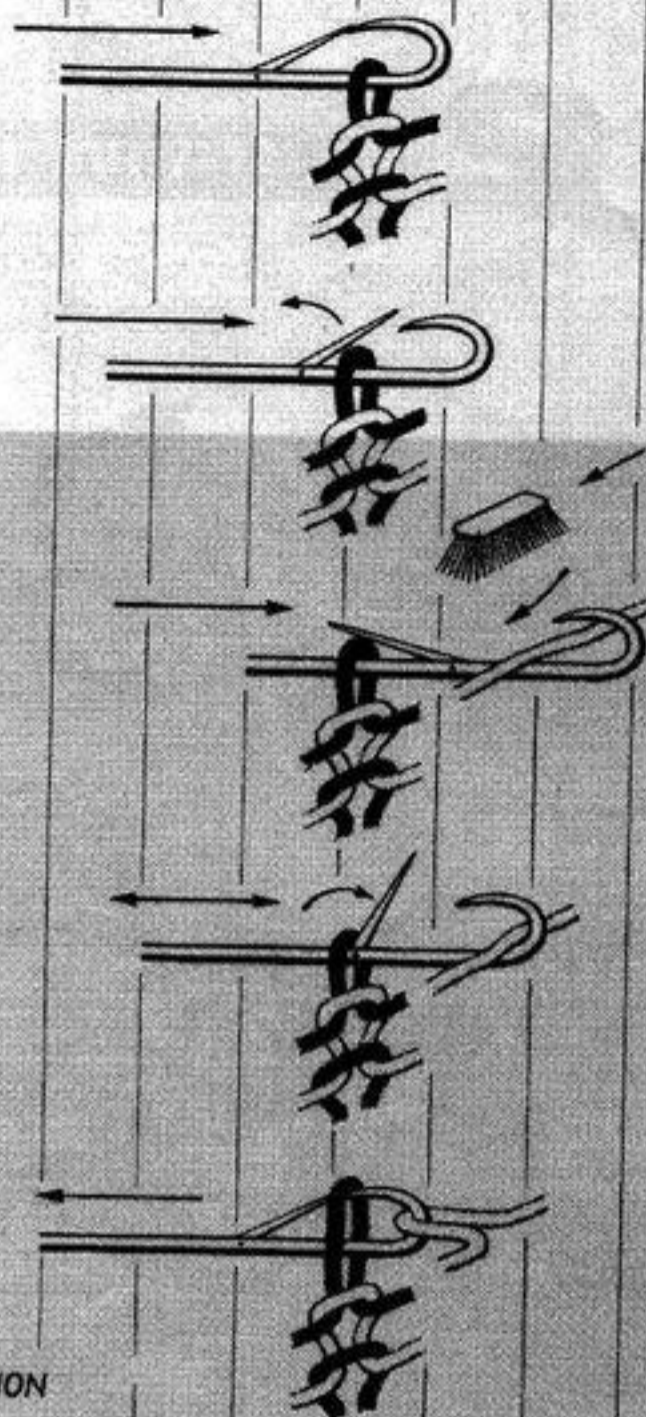
Before fixing the machine on the working table, slide the row counter stand under back bed so that the registering finger functions properly at each passing of the cam box, marking a row. Set the row counter at 000 (FIG. 10, page 8.)

Fix the feet of the wing pieces so that they are level with the edge of the table (FIG. 4). To prevent the machine rocking, fix each clamp in turn, first the right and then the left.

FIG. 3







1 ★ Needle is in working position I, with a stitch held in the hook of the needle.

2 ★ As a result of the action of the cam boxes, the needle slides in its groove and is pushed upwards. This action combined with the stitch and the cam brush assures that the latch is opened...

3 ★ ...whilst the wool which forms the new stitch is introduced by the thread guide and rests on the open needle.

4 ★ The needle descends, seizing the wool whilst the latch shuts.

5 ★ The needle continues its movement, finding its initial position. Simultaneously, the preceding stitch slips whilst the new stitch, held by the hook, begins to form...

6 ★ ...and to be held. The looseness of the tension depends on the distance that the needle goes back.

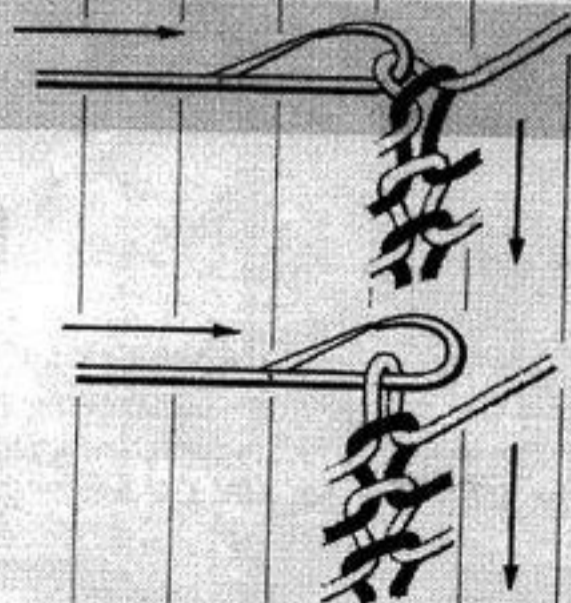
7 ★ The needle ascends whilst the opening is closed.

8 ★ The new stitch now takes its place in the knitting, and the needle prepares to advance to form a new stitch on the return of the cam box.

TENSION

 $\frac{12}{0}$ 

FIG. 2



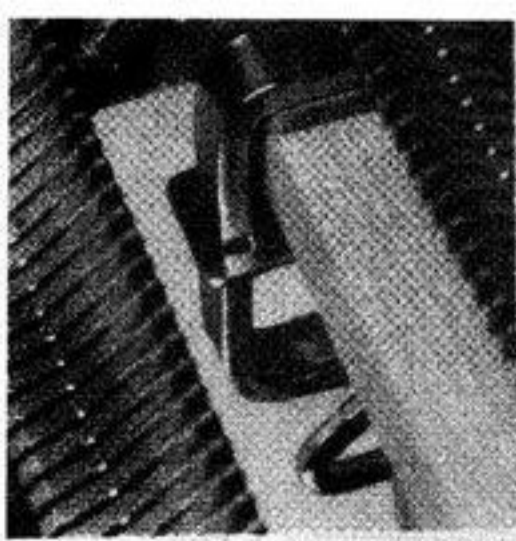


FIG. 4

Put the racking switch in its place under the left wing piece. With the tension arm fixed to the counter (page 8, FIG. 10), after regulating the wire as indicated, proceed as follows for correct threading (FIG. 5): pass the wool between the tension discs "A", in the slit "B", slide it through the end of the span wire "C";

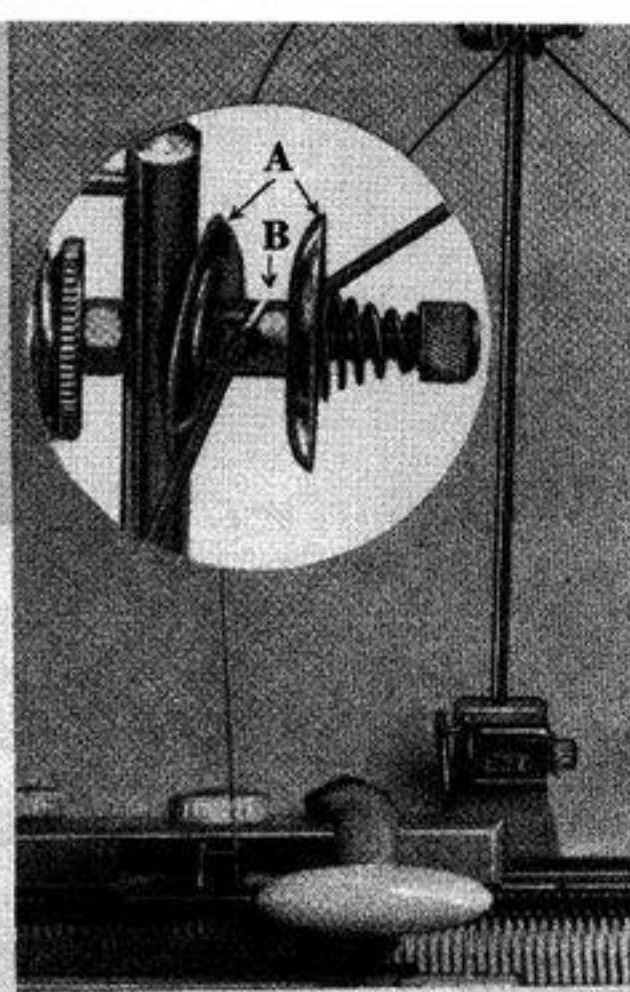


FIG. 5

back cam box, following the instructions given.

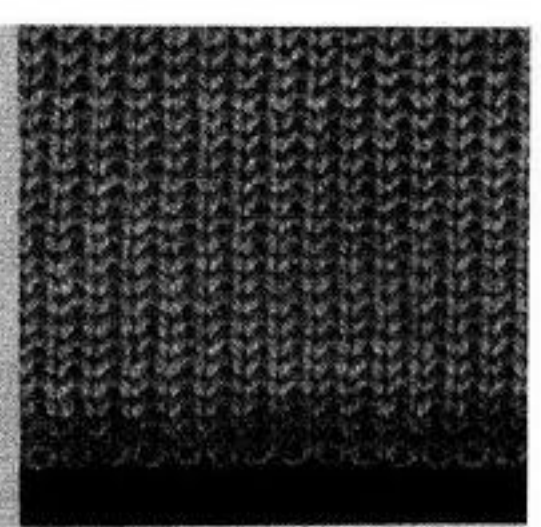


FIG. 6

fix it to the eyelet on the clamp—to the right or left according to position of the cam boxes or the required casting on.

For casting on and knitting, the wool will be inserted afterwards in the cleft of the thread guide on the

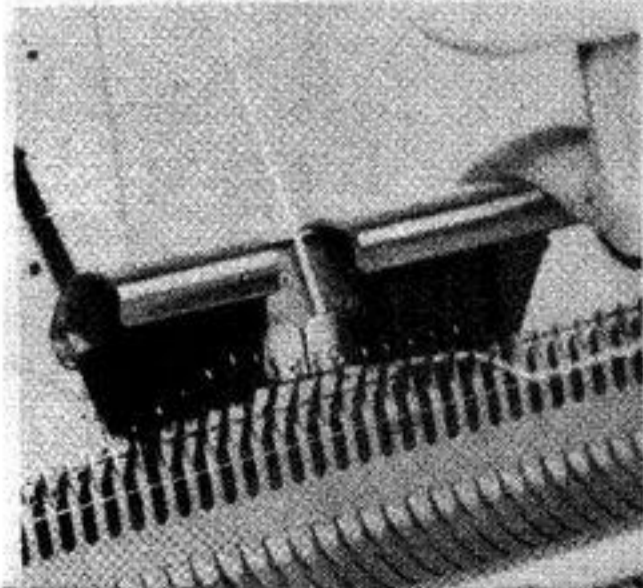
### III ★ CASTING ON

#### FOR STOCKING STITCH

##### Open casting on (FIG. 6)

On back bed, place cam box to the right. Put in working position I as many needles as stitches are required. Pass cam box twice, empty. Return it to the right. Thread the wool and fix the latter in the clamp and thread guide. Then place the mounting comb, with its steel wire in position, between the needle beds, taking care to ensure that the needles are capable of moving freely between the spaces under the steel wire (FIG. 7). Cam box, with red key depressed, is passed to the left to knit the first row. Knit with front bed in upper position

FIG. 7



(see paragraph on CORRECT KNITTING PROCEDURE). Hook on the weights.

##### Closed casting on for stocking stitch (FIG. 8)

On back cam box turn the tension knob to five numbers more than that used for open casting on. Start as for open casting on. Knit one row. Put front bed in open position. With the hook of the yellow transfer tool, pick up the loops formed on the starting comb and remount them on their corresponding needles (FIG. 9). Exert a slight pull on the starting comb. Adjust the knob for normal knitting. Put front bed back in the upper position. (See CORRECT KNITTING PROCEDURE).

FIG. 8

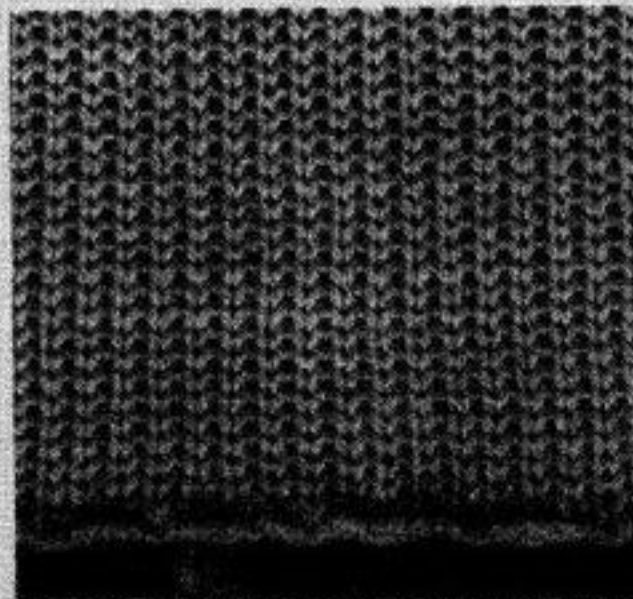
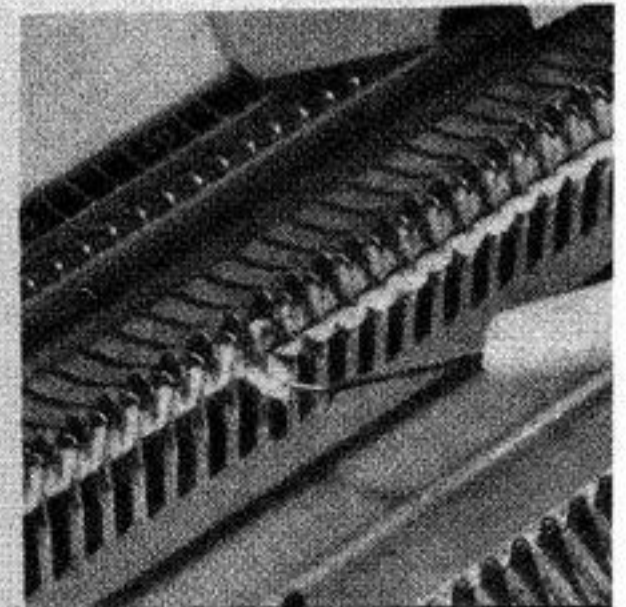


FIG. 9



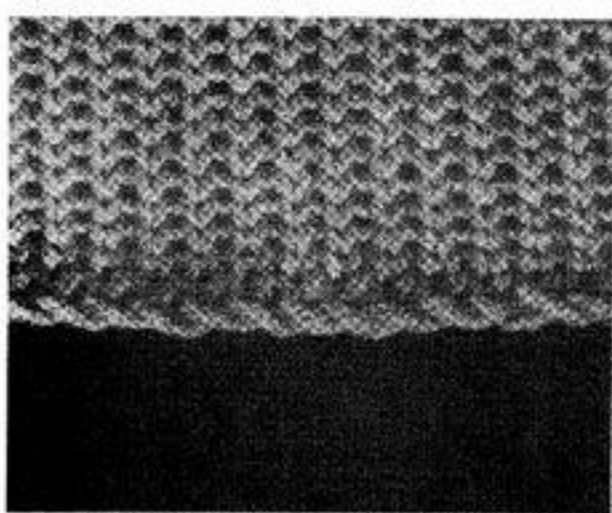


FIG. 10

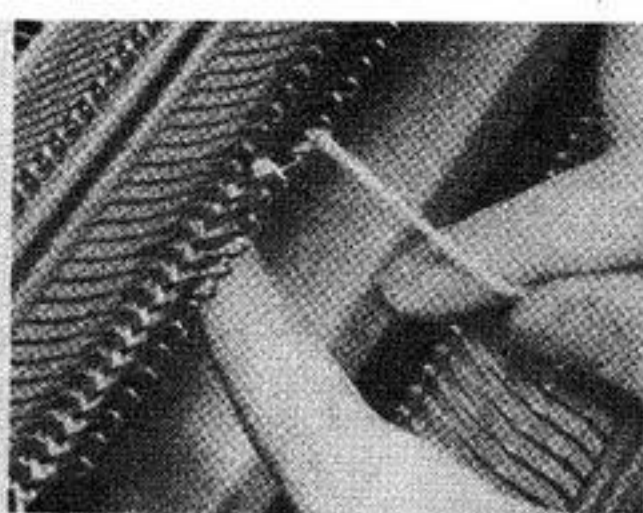


FIG. 11

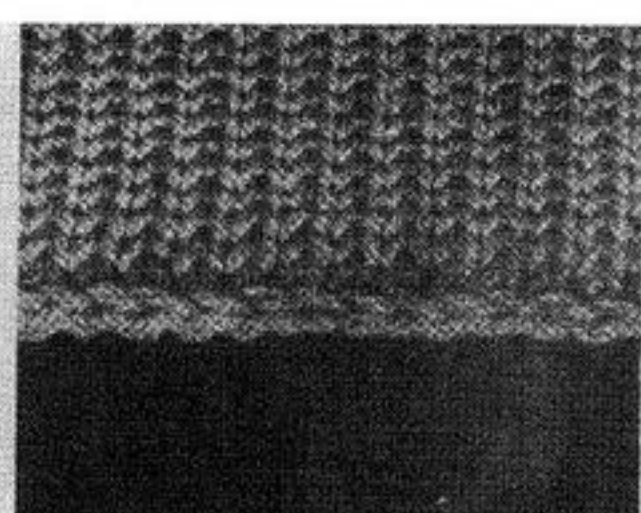


FIG. 12

### Hand casting on (FIG. 10)

Front bed in open position—back cam box to the right—keys cancelled. Fix the wool in the eyelet on the left-hand side clamp. Wind the wool in an anti-clockwise direction behind the needles latches, position 2 (FIG. 11). Then engage it in the thread-guide. Take the mounting comb without its steel wire and, after passing it between the two needle beds, place it in such a position that its teeth are between the needles. When threading the wire, take care to pass the wool in front of the tooth of the comb, next to the end needle in position 2. Place the mounting comb sufficiently far above the needles to allow free passage of the needle hooks.

Press the red key. Place front bed in upper position and move the cam box in order to knit the first row. (See CORRECT KNITTING PROCEDURE.)

### Chain casting on (FIG. 12)

Front bed in open position. Needles in "holding" position. Back cam box at the right, press red key. Fix the wool in the left-hand thread-clamp. Make a slip-knot by using the latch needle of the yellow transfer tool, make a chain (FIG. 13) with the first stitch fixed on the first needle to the left behind the latch. The last

loop goes on the last needle. Wool in the thread-guide. Put the needles in number 2 position—latches open. Place the mounting comb as for hand casting on. Knit the first row. Check the tension, and knit.

This casting on, which is slack, may be tightened by pulling on the first thread. When knitting fancy stitches, this can be used to obtain bloused effects, gathers, etc.

## FOR CIRCULAR OR SEMI-CIRCULAR KNITTING

### Open casting on

Proceed as for rib (page 19). After the first row, regulate the keys as for circular or semi-circular knitting (page 22). Knit. After completing the knitting, eliminate the first row of slack stitches, and either cast-off by hand or make a hem.

### Closed casting on (FIG. 14)

To effect this casting on, a thread of wool is used of a different colour to that to be used for the casting on (e.g. a red thread for yellow knitting..) to facilitate its elimination after knitting.

Thread this additional wool, without passing it

FIG. 13

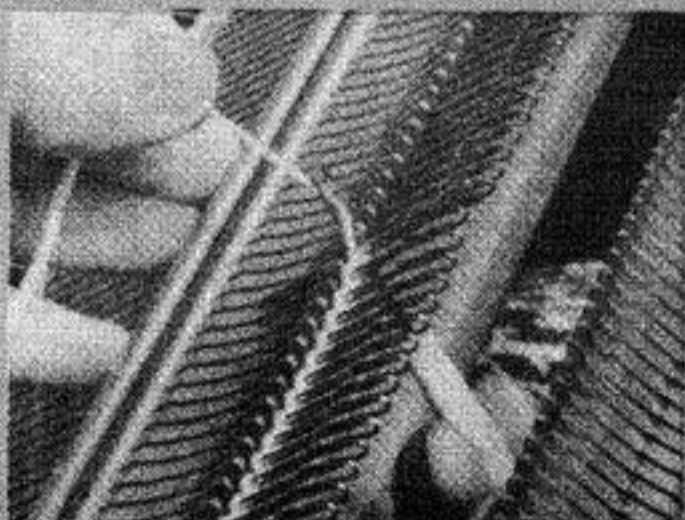
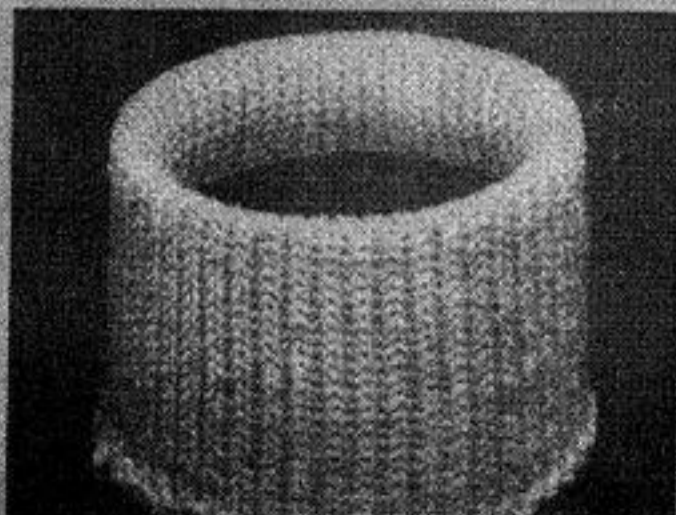


FIG. 14



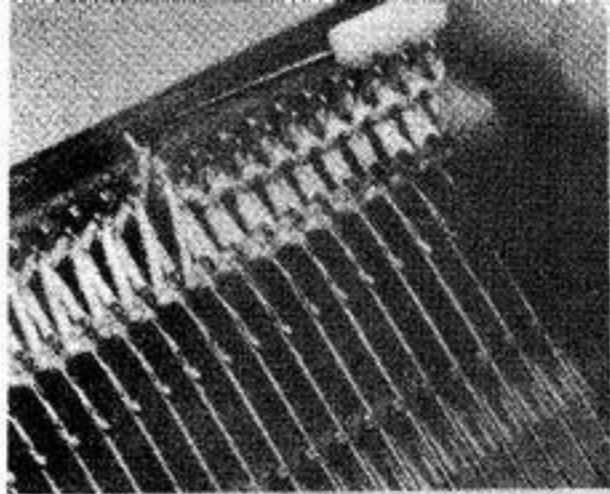


FIG. 15

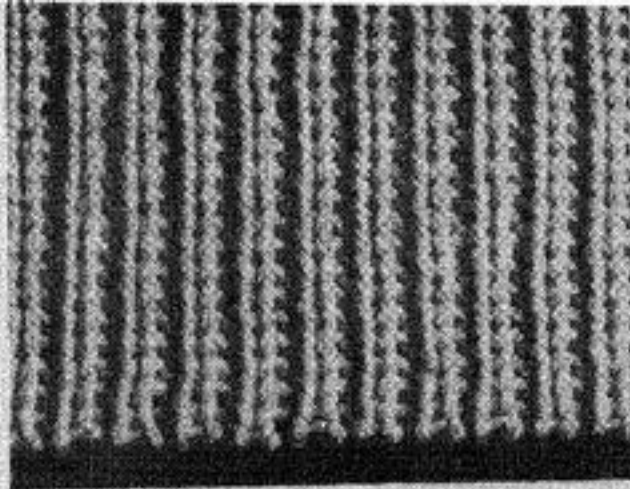


FIG. 16

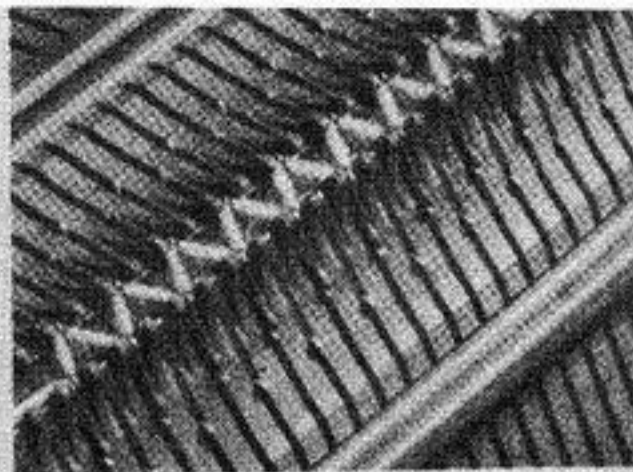


FIG. 17

round the tension discs, fix it to the thread eyelet and then pass it through the thread guide. With the needles in position 1, red keys depressed, tension slack (about four numbers larger than for the casting on), pass the cam boxes from the right, to the left.

Position the mounting comb as for ordinary mounting. Disengage the additional wool from the tension arm and thread guide and fasten the wool to the left thread eyelet. Thread the casting on wool without passing it round the tension discs. Fix it in the left thread eyelet and then through the thread guide. For circular knitting, press the green key, keeping the same tension. Knit a circular row, passing the cam boxes to the right and then to the left.

Then, as for closed casting on for stocking stitch, put the intermediary thread of casting on wool, held by the additional wool, in each needle hook, using the hook on the yellow transfer tool (FIG. 15). To ease this work, put the front bed in open position. After returning the bed to normal position, replace the needles with the ruler to position 2, then the front bed and back bed needle hooks will hold a stitch and a thread. Put the wool back into the tension discs and reset the tension knobs for normal knitting.

## FOR RIBBING

### Ordinary casting on (FIG. 16)

RIBS 1/1.

Needles position 1.

BACK BED I . I . I . I . I  
FRONT BED I . I . I . I . I (pos. NORM.).

Cam boxes, red keys depressed, tighter tension than for knitting. Pass both cam boxes (FIG. 17). Insert the teeth of the mounting comb, without the steel wire, between the wool stretched between the needle hooks, taking care that the wool passes between the teeth of the mounting comb by the end needles (FIG. 18). Attach the steel wire. Cancel the red key on front cam box. Knit one row on back bed, using both cam boxes. Adjust the tension of the stitches, then knit normally with cam boxes red key depressed (or regulated for Fisherman's ribs).

### Special casting on

For fine and medium wool (FIG. 19).

Cam boxes red key. Tension knob on each cam box at 1. Proceed as for ordinary casting-on. After attaching the comb and weights, with the first row completed, press the green key on both

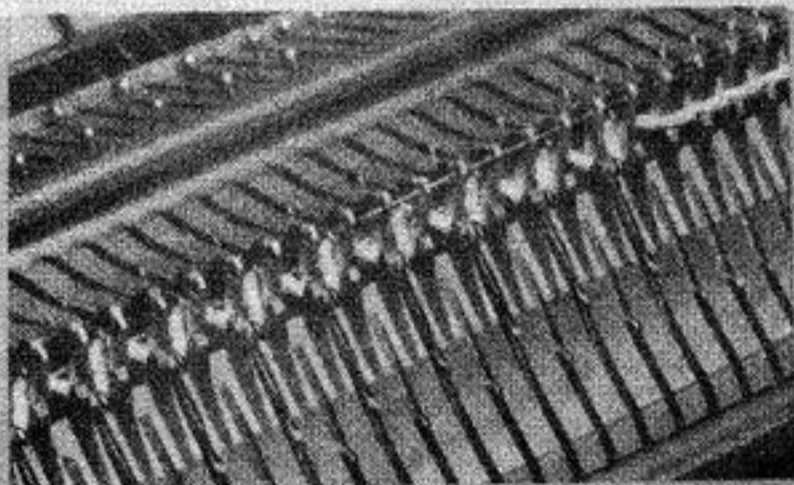


FIG. 18

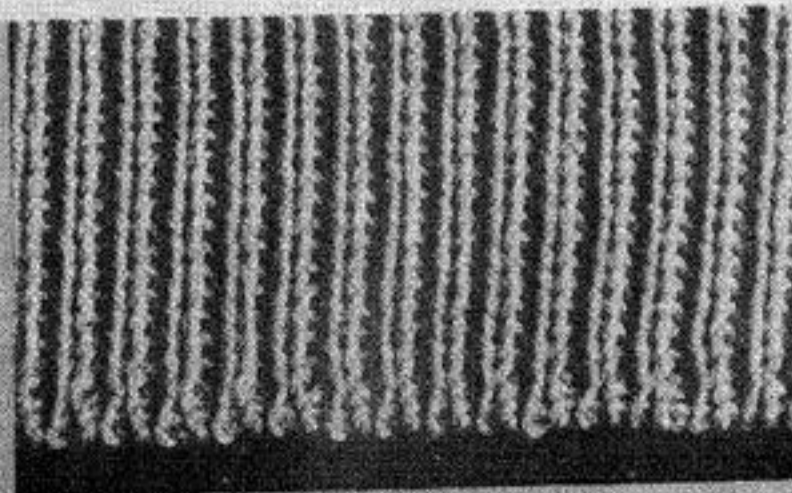


FIG. 19

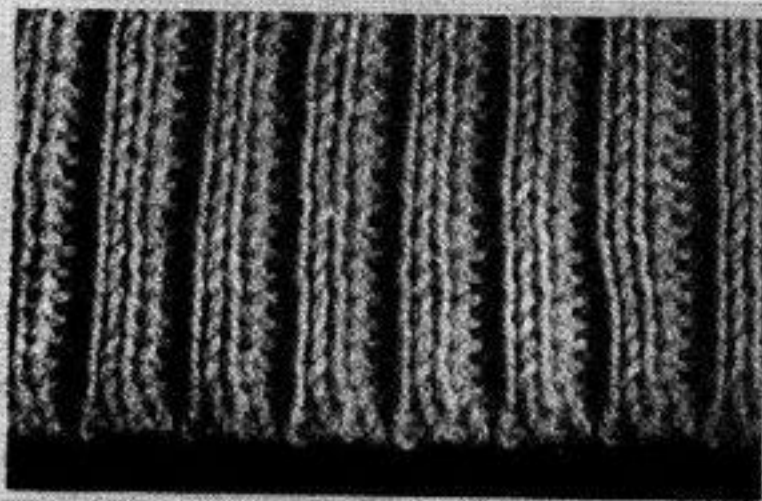


FIG. 20

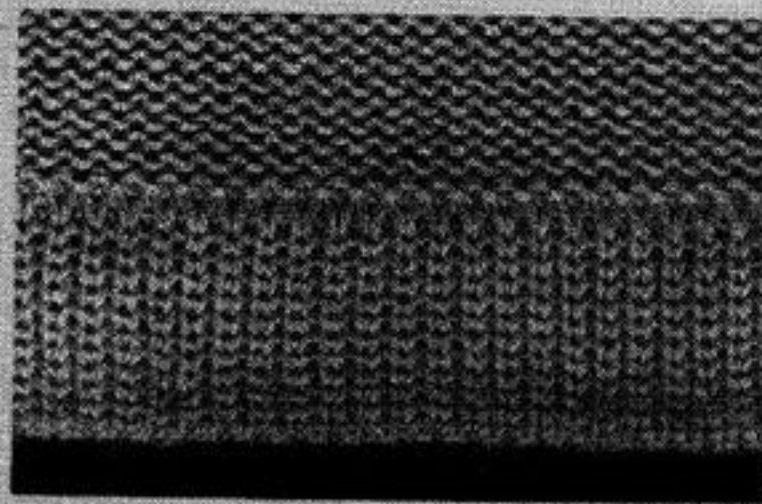


FIG. 21

cam boxes and knit two circular rows. It is advisable to adjust the tension to 2, and then 3 before each movement of the cam box. Press red keys and adjust tension for normal knitting.

### Close ribbing casting on

All the needles on back and front beds in working position. Flow combs alternate. Depress red keys, pass cam boxes from right to left. Place mounting comb without its steel wire between the threads. Replace steel wire. Move the front bed one translation, knit one row. Commence normal knitting.

**RIB II/I (FIG. 20) Close Rib.** For a direct casting-on the needles are placed in the following position: Flow combs alternate.

BACK BED I I . I I . I I . I I  
FRONT BED I I . I I . I I . I I

**CAM BOXES** red key. Very tight tension. After threading the wool, pass cam boxes from right to left. Position the mounting comb as for rib casting-on 1/1. Cancel the red key on front cam box and pass cam boxes from left to right. Turn the racking switch (page 23) to bring the needles into the normal knitting position, after regulating the tension knobs according to the wool being used.

Back Bed I I . I I . I I . I I . I I . I I  
Front Bed . I I . I I . I I . I I . I I . I I

**RIB II/II** To operate a direct casting-on, the needles are placed as follows:

Back Bed I I . . . I I . . . I I . . . I I . . . I I  
Front Bed I I . . . I I . . . I I . . . I I . . . I I

Commencement identical to rib 1/1 casting on. Tension very light. Cam boxes red key. Pass from right to left with wool and comb in position with the weights attached. Position the needles as for knitting by turning the racking switch to place the needles as follows (p. 23)

Back Bed I I . . . I I . . . I I . . . I I . . . I I  
Front Bed . . . I I . . . I I . . . I I . . . I I . . .

To cast on for fine and medium wool—ribs 2/1 and 2/2. After passing from left to right, proceed as for special casting on. Press the green key in the cam boxes and knit two rounds of circular knitting, always with a tight tension. Press the red keys, regulate the tension, and work.

### FOR DIFFERENT PATTERNS

Taking into account the arrangement of the needles in the needle beds, make a stocking stitch casting-on, a ribbed casting-on, or a direct casting-on if the needles are face to face.

With stocking stitch casting-on, the needles can be set out again afterwards on the two needle beds, when the needles (working in groups) alternate on front and back beds (e.g. Stitch 113).

A stitch using all the back bed needles and some of the front bed, needs a close ribbing casting-on. Transfer afterwards the stitches on the front bed needles (e.g. Stitches 306 and 308).

Before knitting, make sure that the front bed needles are in the correct position by comparing them to those on back bed.

## IV ★ BORDERS (FIG. 21)

### Simple Border

Open casting-on (page 17) on five numbers greater than that used for knitting. Regulate tension, knit double number of rows required to obtain depth of border. Open position and using yellow transfer tool lift the loops on to the corresponding needles (FIG. 22). Put front bed into upper position and knit normally.

### Circular knit border

Cast on as for close rib then depress green keys for circular knitting. Knit the desired length of

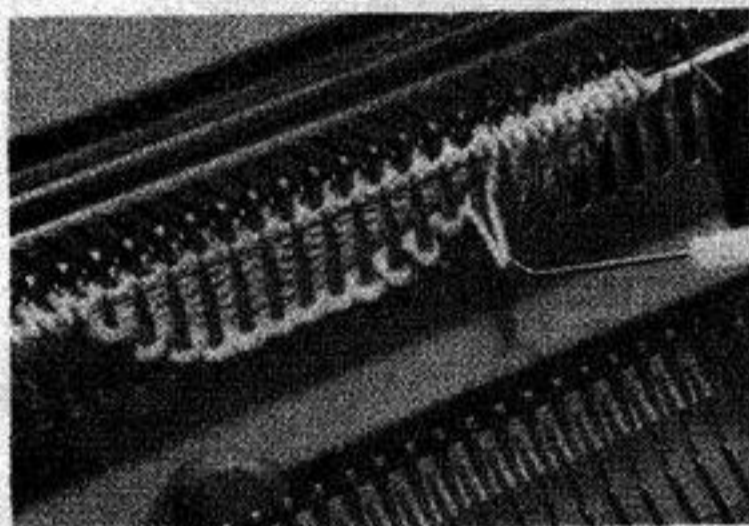


FIG. 22

border. Then transfer front bed stitches on to back bed.

### Picot Edge (FIG. 23)

To obtain a row of Picot in the fold of the border, proceed as follows: transfer, with the latch needle of the green or red transfer tool, every second stitch to its adjacent needle. Every second needle is then empty and remains in the number 1 working position. Knit. The freed needles automatically take up the wool.

This border is used for the edge of collars, etc., or for the borders of socks when elastic is passed through.

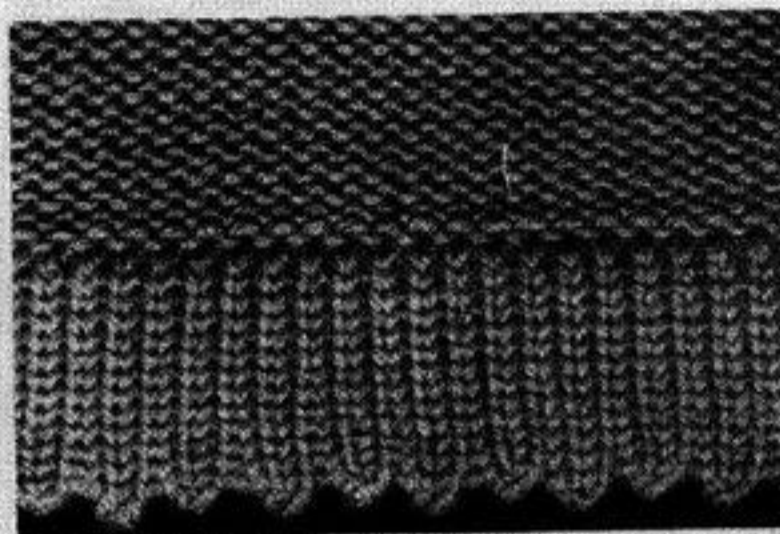


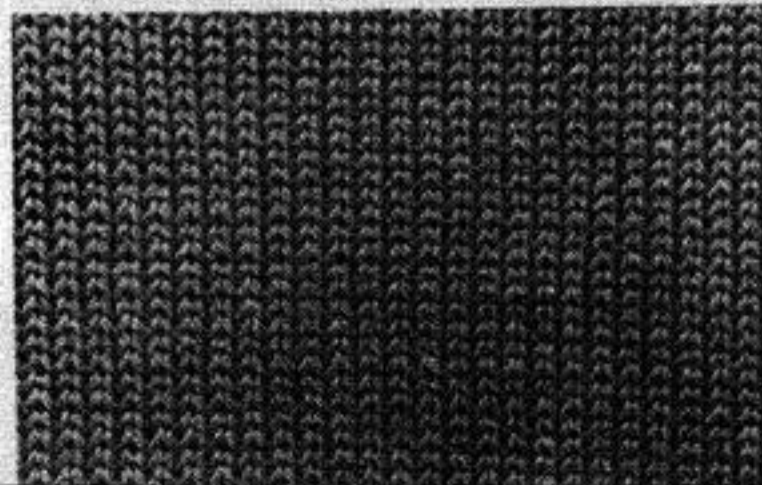
FIG. 23

## V ★ KNITTING

After casting on, exert with your free hand a light pull on the mounting comb every few rows. When a dozen rows have been knitted, attach the edge weights (see page 11). As a general rule, the cam box must be passed from right to left and back again, until the end needle has been knitted.

Passing the cam box too far risks creating a loop (which, however, can be corrected). Inversely, an insufficient passage of the cam box will cause dropped stitches as the needles are not being fed with wool.

FIG. 24



### CLASSICAL STITCHES

#### Stocking Stitch (FIG. 24)

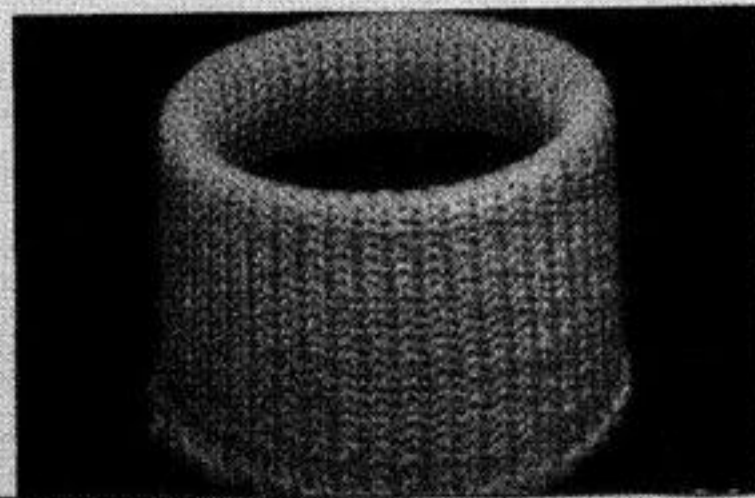
On back bed - cam box red key; front bed in upper position; by a simple to-and-fro movement of the cam box with the needles in the number 1 working position.

The flow combs are face-to-face (page 7, FIG. 7.)

#### Circular knitting (FIG. 25)

On back bed and front bed in normal position—both cam boxes.

FIG. 25



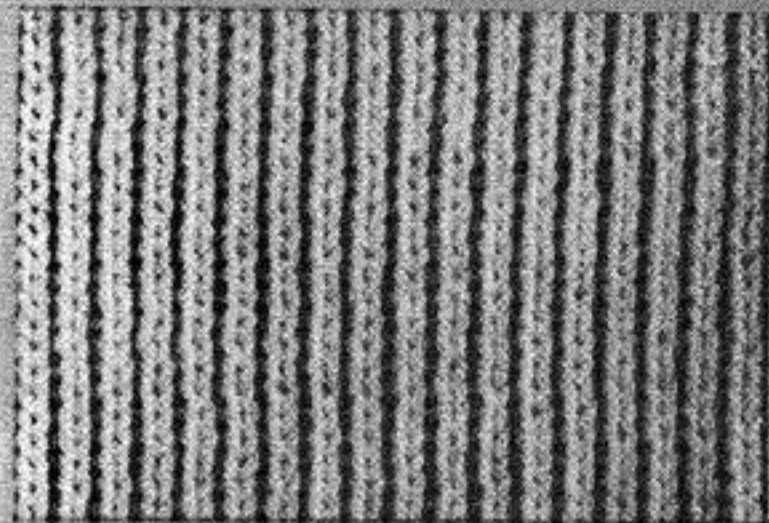


FIG. 26

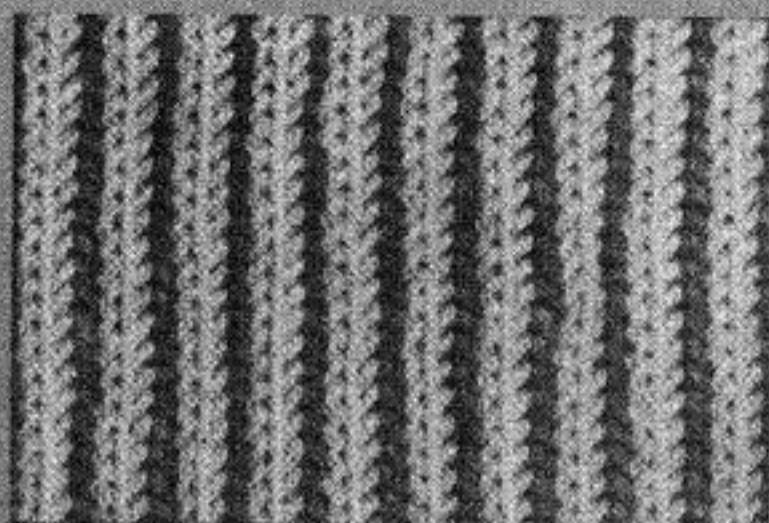


FIG. 27

After completing an open (page 18) or a closed (page 19) casting-on, press the green key on each cam box. Use Catch "H" (page 8, FIG. 15). Place the needles face to face. Knit alternately on back bed and front bed to obtain tubular knitting. This method of procedure, amongst other things, enables you to make socks and stockings without the need to seam them up.

### Semi-Circular Knitting

The needle position is the same as for that of circular knitting. The only difference is that an opening is provided for at the side.

The casting on is similar to the closed or open circular casting-on and the knitting is obtained as follows:

Cam boxes to left.

Back cam box, keys cancelled } knit two rows.  
Front cam box red key

Back cam box red key } knit two rows.  
Front cam box, keys cancelled

The opening will be to the right.

### Close Ribbing

On back bed and front bed, position NORMAL. With back cam box and front cam box - red key. The flow combs alternated (page 7, FIG. 8).

### Rib 1/1 (FIG. 26)

Flow combs face-to-face. The required number of needles on each bed are:

I . I . I . I . I

. I . I . I . I .

The stitch is obtained by working with two cam boxes (red keys). Use one of the rib castings-on indicated, then knit normally.

### Double Sided Fisherman's Rib (FIG. 27)

. I . I . I . I . I . I . I . I . I

I . I . I . I . I . I . I . I . I .

Same casting on as for Rib 1/1. To knit, press the green and yellow keys on each cam box. This rib is liable to stretch, so check the descent of the knitting and, from time to time, pull on the mounting comb.

### Single Sided Fisherman's Rib (FIG. 28)

. I . I . I . I . I . I . I

I . I . I . I . I . I . I .

Same casting on as for Rib 1/1.

Back Cam box—red key.

Front cam box—green and yellow keys.

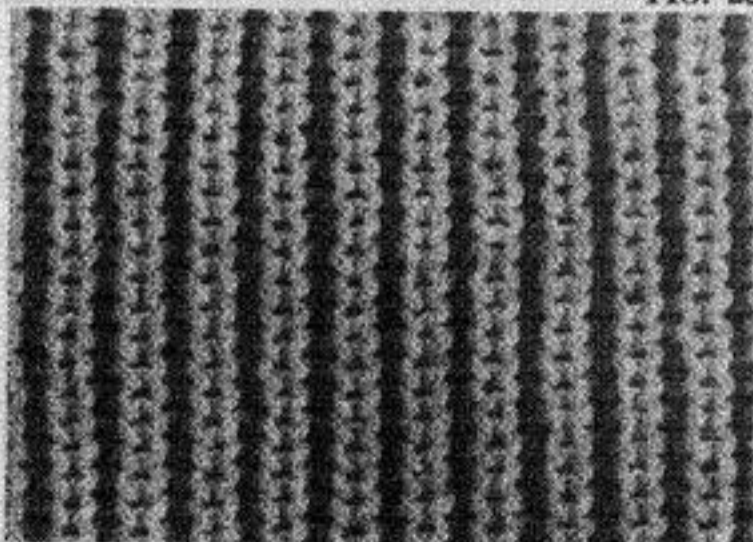
### Ribs II/I

After carrying out the direct casting-on (page 20) and positioning the needles, knit with cam box keys red.

### Ribs II/II

After carrying out the direct casting-on (page 20) and positioning the needles, knit with cam box keys red.

FIG. 28



## DIFFERENT PATTERNS

For the position of needles, keys on cam boxes, see page 42.

### RACKING-MOVEMENT

Back bed working normally.

Front bed is moved to the left and right, and inversely, by the aid of the white star-shaped switch to the left of the front bed under the wing-piece (FIGs. 29 and 30). The Patterns obtained are racked or zig-zagged on the reverse side of the knitting; thus many patterns can be obtained (see Fancy Stitches).

There are 12 racking positions. Each turn of the switch moves the front bed, e.g. 1 front bed needle opposite a back bed needle can be moved to come opposite the next needle on the back bed, or opposite a flow comb.

The 12 racking positions allow 6 translations from right to left or vice versa.

#### IMPORTANT:

**Don't move the front bed without first putting the needles into knitting position I.**

### FAIR ISLE

Fair Isle is a derivative of stocking stitch. It is knitted on back bed only, with cam box keys cancelled. The wool is placed by hand on the needles in position II.

Place all the working needles into holding position. Then push the needles to be knitted with the Fair Isle wool into number 2 position, making sure latches are open. Place the wool across the needles and pass the cam box with keys cancelled. Return the cam box.

Second row: Push holding position needles into

### KNITTING WITH DOUBLE-KNITTING WOOL.

There are several methods to obtain a good tension for stocking stitch.

1. Knit on back bed using every other needle. Red Key.
2. Using all needles on both beds, flow combs alternate. Knit across one row, red keys depressed. Separate cam boxes and take front cam box across twice in order to make the loops drop from the front bed. Rejoin cam boxes and knit second row in the same manner. The dropping of the front loops produces a loose tension. A good approximate tension is five for both cam boxes. When knitting rib, the needles can be spaced to make a looser fabric.

number 2 position. Place main colour wool on needles and knit.

### STRIPES

Stripes are obtained by working the wool by hand on the back bed needles in position II. In order to put the needles automatically into position II, proceed as follows:

After casting-on for stocking stitch, disengage the wool from the tension arm and thread guide.

#### Without Wool

★ Cam box keys cancelled—pass cam box over the needles in position I.

Half way across press the red key and finish the row. Return the cam box and the needles will automatically mount into position II.

#### With Wool

1st colour: Place the wool on the needles in position II.

Pass the cam box. Return empty cam box to remount the needles into position II.

2nd colour: Place the wool on the needles in position II, pass the cam box ★.

With both wools now on the same side, commence again from ★ to ★.

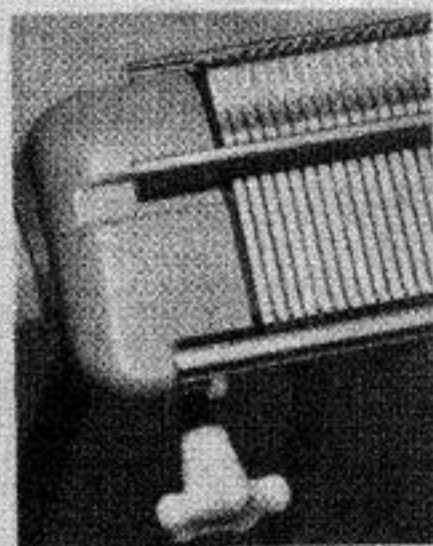


FIG. 29



FIG. 30



## A STITCH HAS NOT BEEN KNITTED

This may occur if the tension of the wool at the edge of the work is not sufficient. It is then necessary to manoeuvre the needle through the same movement as that which occurs when the cam box is passed. The needle is pushed towards the back; the preceding stitch passes from behind the latch and, in looping the wool, thus forms a new stitch.

## A STITCH DROPS FROM THE NEEDLE

Lower the front bed and remount the stitch with the latch needle on the yellow transfer tool. Check first to see that the stitch is from front bed or back bed.

## A NEEDLE HAS TO BE CHANGED

Pull on the bent end of the rod, found to the left on the upper part of the front needle bed, and to the right on the upper part of the back needle bed—without disengaging it completely.

To remove the needle: Close the latch, lift the foot of the needle and gently pull it out from under the slide rail.

To replace the needle: Open the latch, pass the needle head under the slide rail, gently forcing it into its place in the groove.

## REPLACE THE ROD

## AN EDGE HAS RISEN UP

Check at the end of a few rows to see if the casting-on wool has been taken out of the wool eyelet. If this is not done, when the work reaches a certain length the wool will pull on the eyelet and, consequently, the knitting will not descend regularly.

## A FEW EDGE STITCHES ARE NOT BEING FED WITH WOOL

★ Check that the edge weights were fixed to the work at the completion of about twelve rows. If they were, then ensure that they are raised every 15 or 20 rows (for certain fancy patterns, every 8 or 10 rows).

★ The wool feed may be either irregular or insufficiently flexible. Check to see if the span wire, which raises the wool after each edge stitch is knitted, is correctly positioned. Also, check the tension of the braking discs through which the wool must slide. For certain fancy patterns, do not pass the wool through the tension discs but pass it directly from the span wire to the thread guide on the cam box.

## THE WORK DOES NOT DESCEND REGULARLY

Check that the middle of the mounting comb has been placed in the centre of the knitting in order

that the attached weights descend regularly and horizontally. If important increasings or decreases break this balance, then it is necessary to move the weights by loading the comb more to the right or left as required in order to maintain the horizontal descent.

When the knitting has reached a certain length and when the weights touch the ground, that the mounting comb is raised so that the work does not rise above the flow combs.

## JAMMING OF CAM BOX

### CAM BOX BLOCKAGE

Above all, do not slide it backwards. Try to make it slide forwards without using too much force, making sure the punched keys are cancelled beforehand. Following the method indicated, undo the row which you have just knitted (it will obviously be badly done) and then return the cam box (keys still cancelled) to the side where the wool is. Put the machine back into working position, and continue knitting as before.

### WOOL BLOCKAGE

The cam box will jam if the wool becomes tangled at the tension arm. If the ball of wool being used becomes loose, the thread flow will be irregular. Constantly check the flow of wool to the tension arm.

## A STITCH HAS NOT BEEN KNITTED

This may be due to the fact that the flow of thread has been halted by a previously unnoticed knot which hampers the movement of the needles (always join wool at the edges). As a result, a stitch will not automatically pass above the needle latch. If this should be the case, it is necessary to pass the stitch above the latch with the help of the hook on the yellow transfer tool.

## CAM BOX BRUSHES REQUIRE CHANGING

The brushes are worn. Insert the end of a screwdriver between the support and the spring, then expel the brush.

To replace it: Insert the end of a screwdriver between the support and the spring so that the brush can be lodged back into place without difficulty.

## THREAD GUIDE

Check that the brush bristles have not slipped into the thread guide. If you find they have, put them back in place after freeing them with the aid of the hook on the yellow transfer tool.

## VARIOUS METHODS OF WORKING

*During the course of knitting a piece of work, it is necessary to carry out such operations as increasing, decreasing, etc. In this chapter you will find instructions on how to perform these operations, together with advice on the making of pockets, socks, etc.*

### I ★ INSPECTING THE KNITTING (FIG. 1)

To survey the progress of your knitting, it is necessary to lower front bed by releasing the two levers (page 7). In fact, place in "open" position.

When working on the back bed only (stocking stitch), a simple upward push will change the front bed from "open" position into the "upper" position.

If knitting on both beds (normal position), a simple push will put the front bed into the "open" position. The front bed needles will then be

in "holding" position. To resume normal knitting, return beds to "normal" position and with the ruler push the needles into position 2. After knitting a row, they will return automatically to position 1.

If using green and yellow keys on front cam box or the cam box is on the left side when knitting circular rows, on returning front bed to normal position pull the feet of the needles downwards in order to keep the stitches in the hooks.

#### Note:

Before passing from the "normal" position to the "open" position, always separate the cam boxes. After checking the work, in returning from the "open" position to the "normal" position, re-engage the cam boxes (see catch and lever page 8).

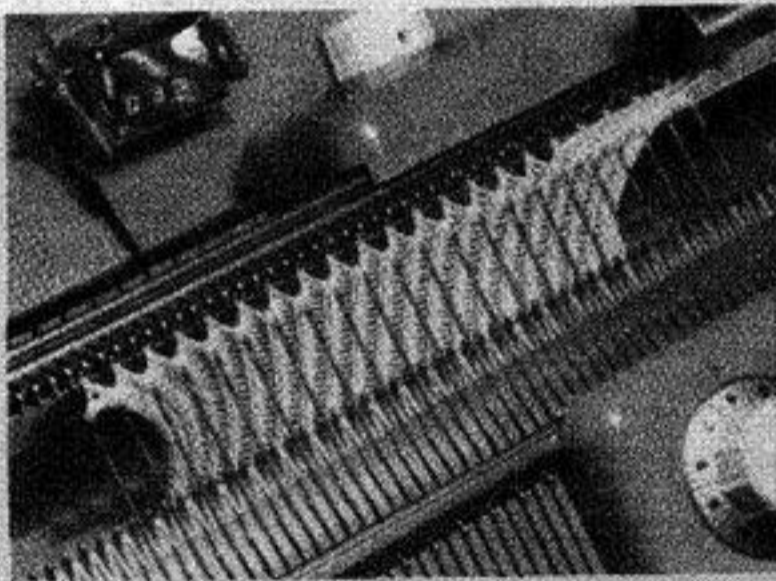


FIG. 1

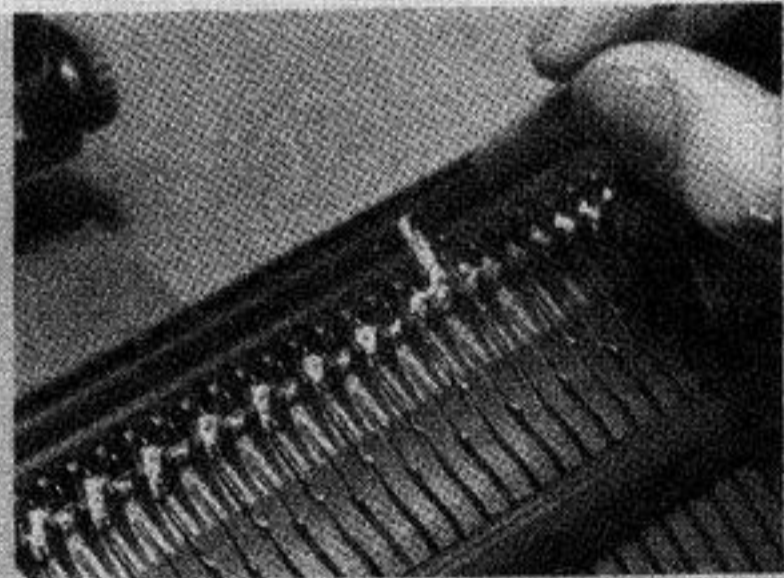


FIG. 2

### II ★ TRANSFERRING STITCHES FROM STOCKING STITCH TO RIB (FIG. 2)

Select every second needle on the front bed. Place a stitch on each of these needles by taking

the corresponding stitch from the back bed. Put the empty needles on the back bed into "non-working" position. With the needle beds in "normal" position, use both cam boxes and proceed to knit.

### III ★ TRANSFERRING STITCHES FROM RIB TO STOCKING STITCH (FIG. 3)

Place the needles that are not working on the back bed into position I. Using the eyelet needle

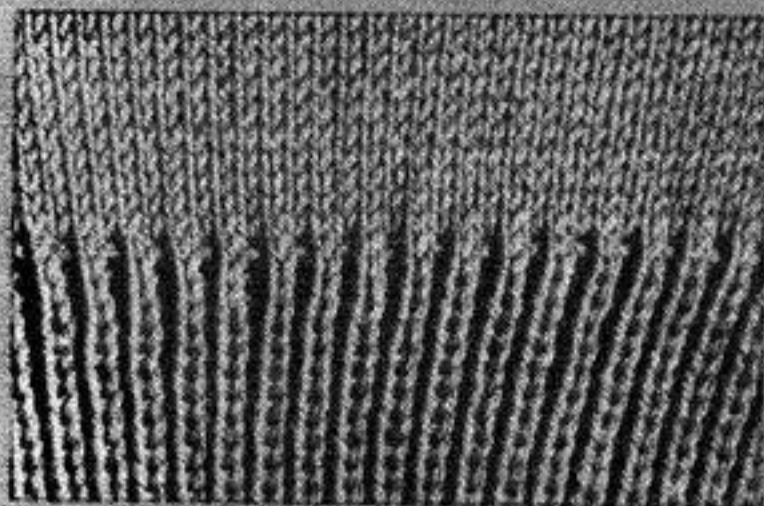


FIG. 3

### IV ★ REMOUNTING (FIG. 4)

To mount a piece of knitting when the stitches are not held by a needle, it is necessary to proceed as follows: Using the eyelet needle of the green or red transfer tool, place the knitting between the two needle beds, front bed in open position. Put the requisite number of needles

or transfer tools, put the corresponding front bed stitches on to the empty back bed needles. Place the freed front bed needles to non-working position. Put front bed into the upper position and knit, using back bed cam box only.

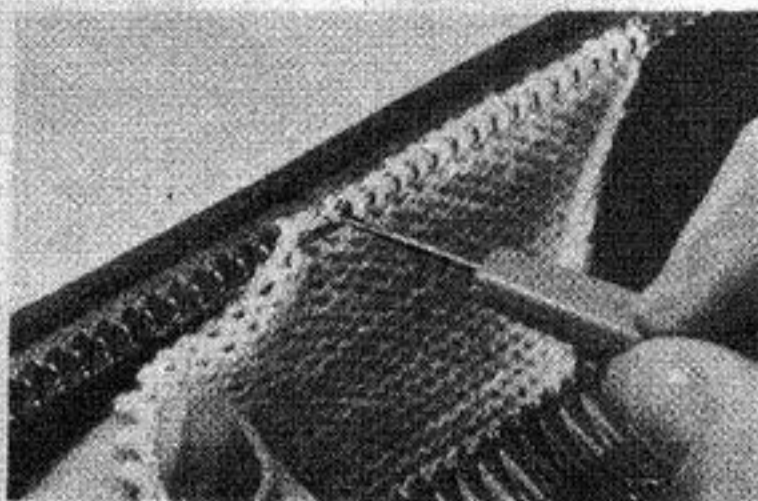


FIG. 4

### V ★ REMOVING KNITTING FROM THE MACHINE TO AN ORDINARY HAND NEEDLE (FIG. 5)

Place the needles from which you wish to remove the stitches into holding position. Front bed open. Slide the knitting needle through the first

in position number I, latches open. Using the eyelet of the transfer tool, catch the first stitch two to five rows down. Then place the eyelet tool on the hook of the needle. On lifting the tool upwards the stitch will slip from the tool on to the needle. Repeat until all the stitches are on the needles.

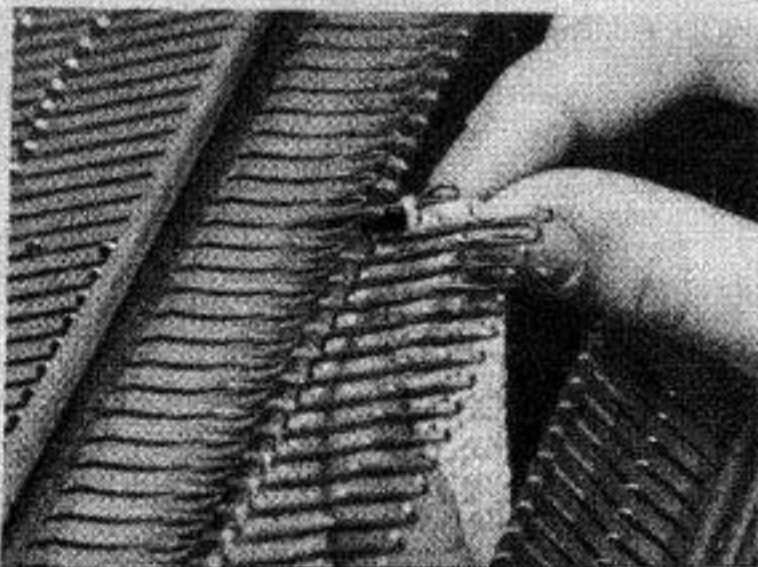
stitch. Pull the machine needle down to non-working position, leaving the stitch on the knitting needle. Repeat this until all the requisite number of stitches are on the needle. If you exert a slight pull on the knitting with your free hand, you will find this operation very much easier to carry out.

### VI ★ TRANSFERRING KNITTING FROM AN ORDINARY KNITTING NEEDLE TO THE MACHINE (FIG. 6)

With their latches open, place the requisite number of needles in number I working position. Then, with front bed in open position, place the knitting between the two needle beds. Position the first stitch on the hand knitting needle in front of the first back bed needle. With the other hand, unhook the stitch by pushing the machine needle through the stitch on the

knitting needle. Place the back bed needles in position number I, ready for knitting.

FIG. 5



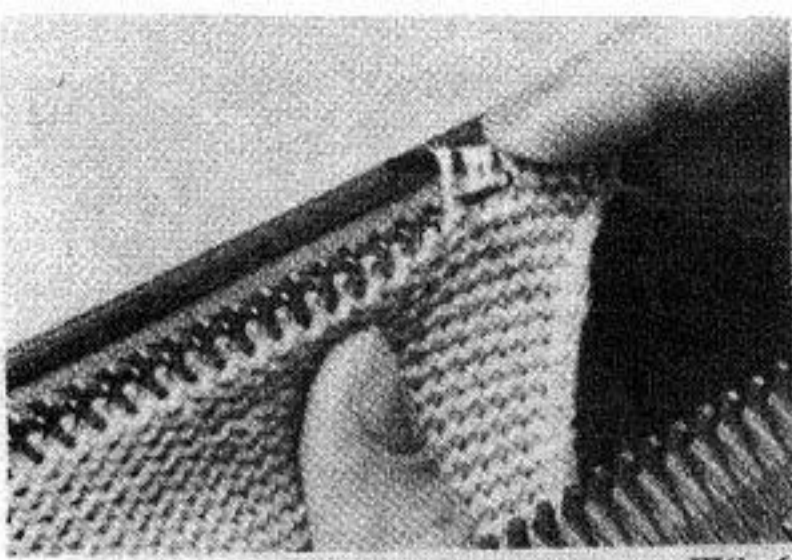


FIG. 6

## VII ★ DARTS

### At one side of the work (FIG. 7)

On the opposite side to the cam box, raise the needles which do not have to be used into holding position. Knit one row with the needles in working position. The cam box and wool are now at the same side as the needles in holding position.

To avoid making a hole, place the wool under the last needle in holding position (the needle next the needles in working position) (FIG. 8). Knit back. With the ruler, return the desired number of needles in holding position to 2nd position. Repeat until all holding position needles are returned.

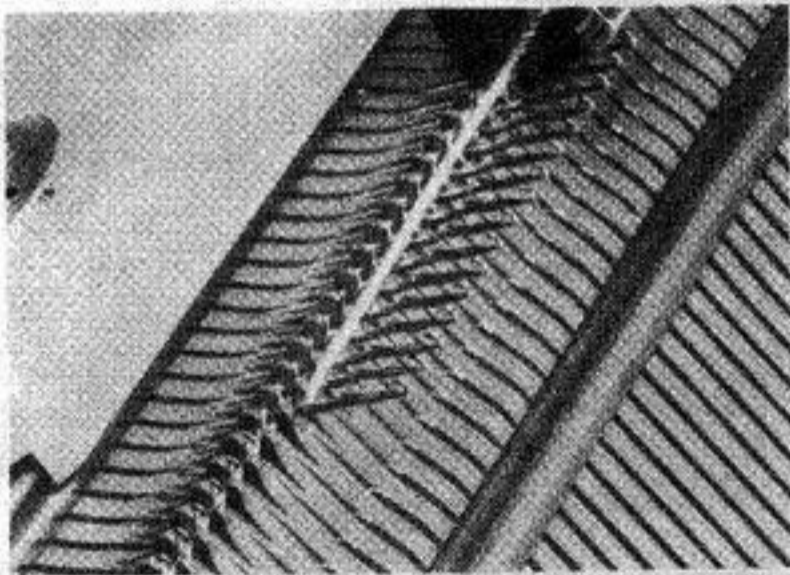


FIG. 8

## VIII ★ INCREASINGS

### One stitch at the edge of the knitting

At the same side as the wool and cam box, place a needle in number I working position. On knitting, a new stitch automatically forms.

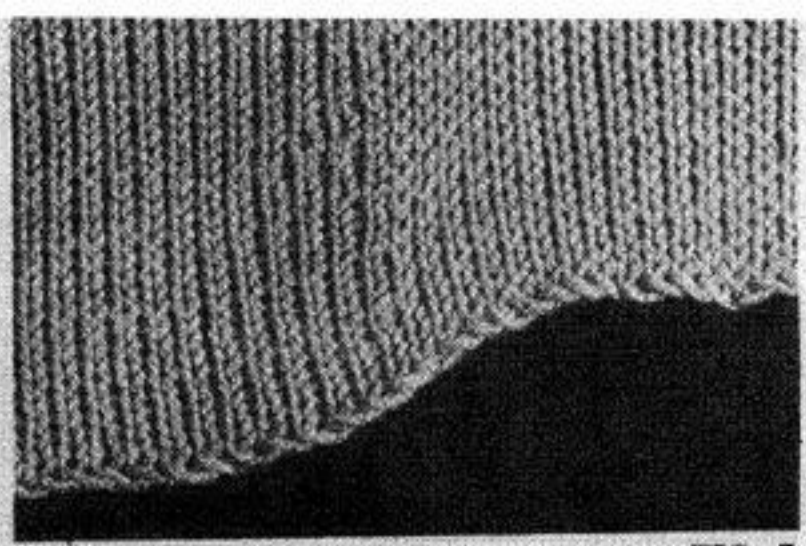


FIG. 7

### Darts in the middle of a row (FIG. 9)

On the opposite side to the cam box, raise the desired number of needles to holding position. Knit one row with the needles in number 1 working position. On the other side, raise the same number of needles to holding position. In order to avoid a hole, place the wool around the end needle and knit a row.

★ On the side opposite the cam box, now place the desired number of needles in number 2 working position, in order to knit the needles back. Knit a row ★.

Repeat from ★ to ★ until all the needles are again in working position 1.

To make the hole-line (FIG. 9), do not pass the wool around the last holding needle.

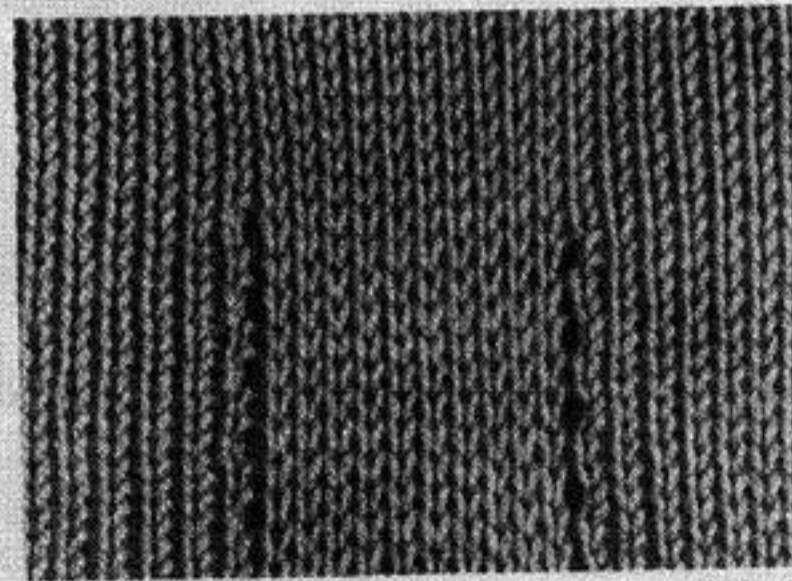


FIG. 9

### Two stitches at the edge of the knitting

Place two needles in number I working position. Pick up a thread of wool from the edge of the knitting and place it on the needle nearest to the edge.

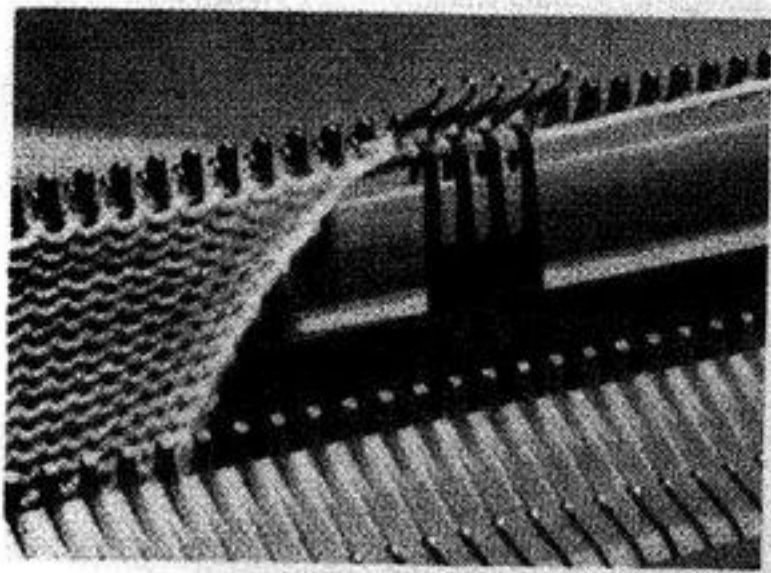


FIG. 10

The second needle will automatically take up the wool. This method of increasing must be carried out at the same side as the wool and cam box.

#### Five or more stitches on the same side.

This is effected at the same side as the wool and cam box. Disengage the wool from the thread guide. Place the same number of needles as stitches required in number 1 position. Push the last working needle and the first new needle into number 2 position, take the wool under the two needles and back across the hooks. Knit the needles back into number 1 position. The first increase needle will now have a loop, this is used with the next empty needle to form the next stitch. Replace wool in thread guide and place the small comb or edge weights in front of the needles and knit (FIGS. 10 and 11).

#### A stitch in the middle of the row

With the single or double transfer tool, move all the stitches along until you come to the place where you wish to increase. In order to avoid a hole, use the hook to pick up an intermediary thread from the preceding row and wind it round the free needle.

If you need to increase several stitches intermittently along a row, it is necessary to remove the

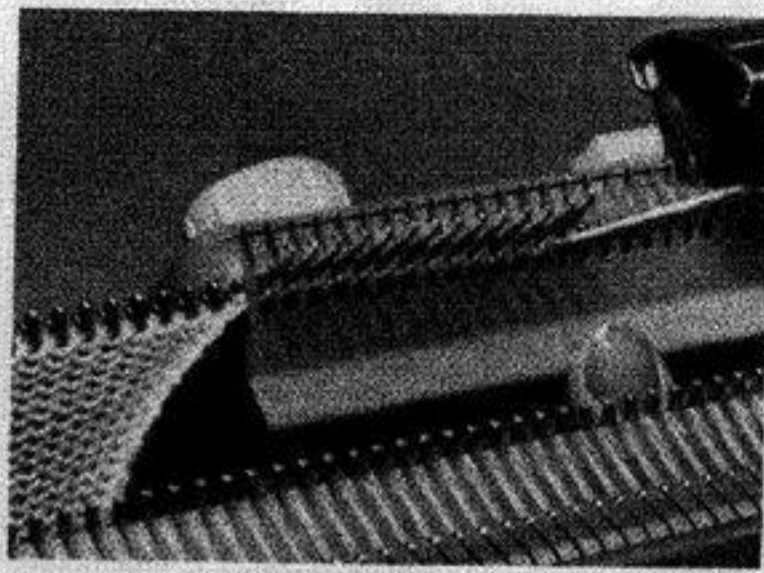


FIG. 11

knitting from the machine on to an ordinary knitting needle (see paragraph IV). When putting it back on the machine make sure that, where the increasings are to take place, the needles are free. Place a thread of the wool on the free needles, as indicated above.

#### Several stitches on the same side - open casting on

Put the cam box, with which you have knitted the previous row, into the non-working position. Remove the thread from the thread guide. With front bed open, place the small mounting comb in front of the needles in number 2 working position in order to increase.

Place the wool in the needle hooks. With your hand, clear the needles which are in number 1 position. Lower the comb. Replace the thread in the thread guide. Press the keys. Attach a weight and knit.

#### Important

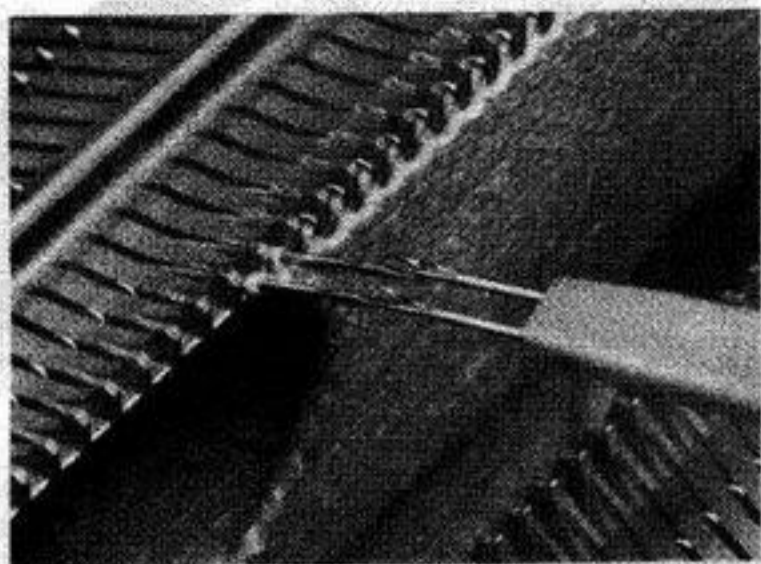
The wool connecting the last knitted needle and the one freshly fed must pass under the steel wire of the mounting comb. If necessary, remove the wire whilst the wool is passed, and then replace it in position.

## IX ★ DECREASINGS

#### One stitch at the edge of the knitting

With the eyelet needle of the green or red transfer tool, remove the last stitch from its needle and transfer it on the hook of the next-to-last needle.

Put the freed needle in non-working position. When the cam box is passed, the two stitches will then be knitted together. With this method of decreasing either at the beginning or end of a



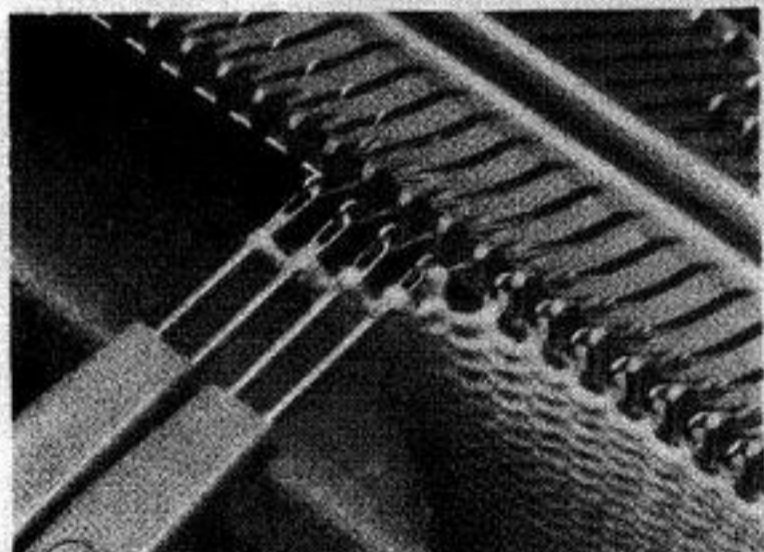
**FIG. 12 a**

row, there is no need to take into account the position of the cam box.

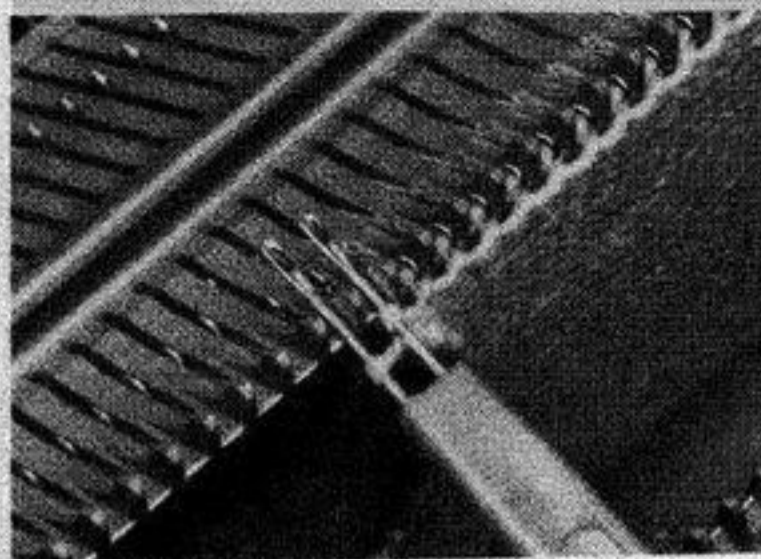
With the double transfer tool (FIG. 12 a) (green or red) remove the last two stitches from the end needles (FIG. 12 b). Place the next-to-last stitch on the third needle, and the last stitch on the second needle. In this way, the second stitch is knitted with the third one and the end stitch remains as it was, only moved along one needle. With this method of decreasing either at the beginning or end of a row, there is no need to take into account the position of the cam box or the wool. In using the two double transfer tools side by side (FIG. 13) you can decrease by transferring three stitches towards the centre. This method of decreasing, called "Italian style" is especially recommended for stockings and raglan sleeves as the work must be assembled with invisible seams (FIG. 14).

#### One stitch in the middle of a row

Using the eyelet needle of the green or red transfer tool, transfer the stitch on to its adjacent needle (always transfer towards the centre of the work). Now, with the double transfer tool, move all the other stitches along until the last



**FIG. 13**



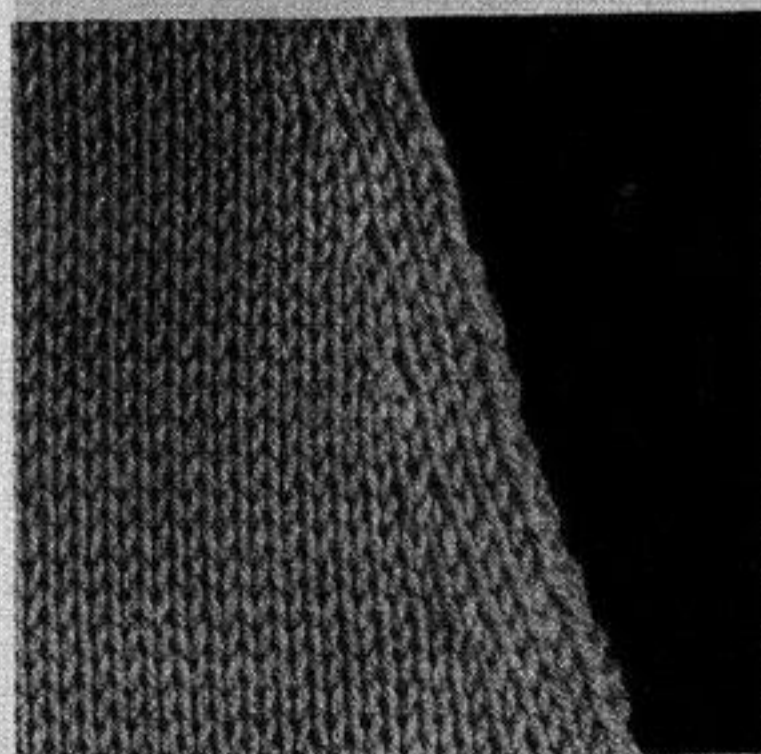
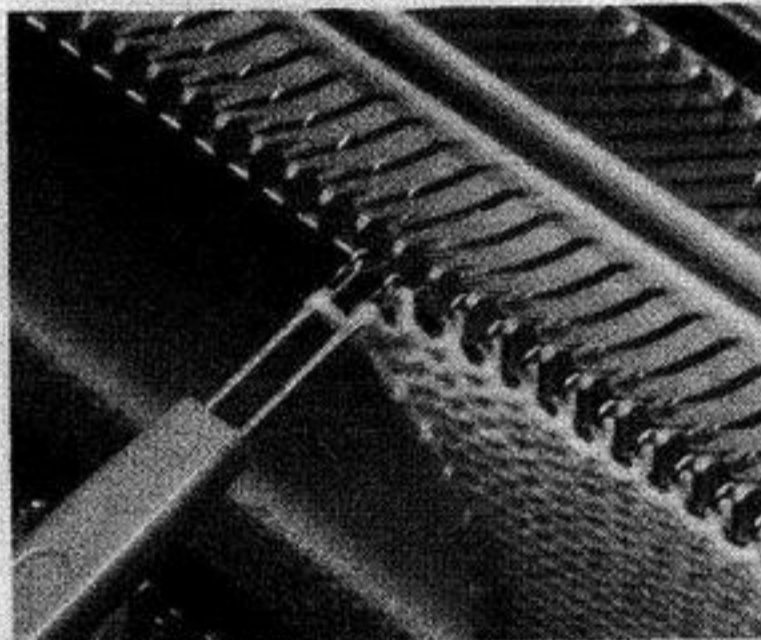
**FIG. 12 b**

needle is free. Put this into the non-working position.

Several stitches on the same side

See paragraph on casting-off.

**FIG. 12 c**



**FIG. 14**

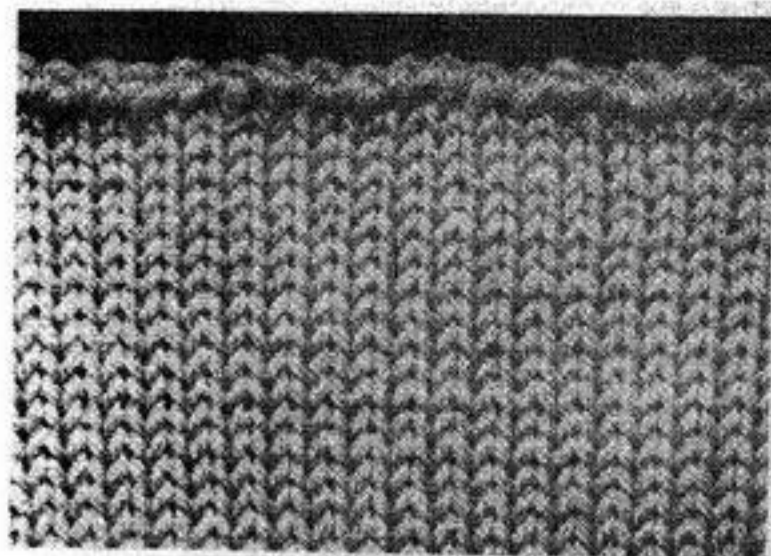


FIG. 15

## X ★ CASTING-OFF

### Stocking Stitch (FIG. 15)

Always cast-off at the same side as the wool and cam box. With front bed open, place the needles holding the stitches to be cast-off in number 2 working position. Transfer the last stitch, using the eyelet needle of the transfer tool, to the next-to-last needle. This needle now supports two stitches, one in the hook and the other behind the latch. Lower it, in order to pass the stitch which is in the hook through the one which is behind the latch. Return it to the number 2 position, and make a chain as follows: free the wool from thread-guide and place it in the needle hook. Again lower the needle, in order that the wool which you have just introduced into the hook passes through the stitch behind the latch (FIG. 16).

Repeat until the desired number of stitches has been cast-off. You will find this operation easier to carry out if you pull on the knitting with your free hand. Put the freed needles in the non-working position.

To obtain a very slack chain, make two chain stitches between each stitch cast-off.

FIG. 17

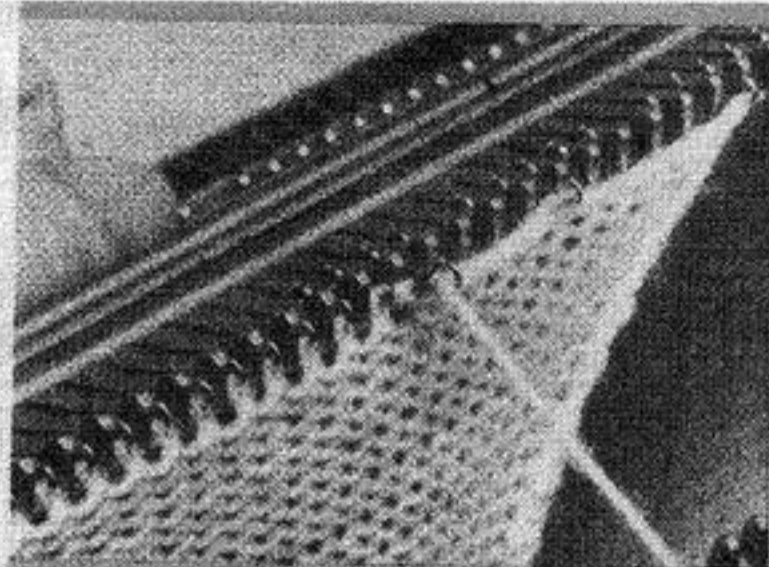
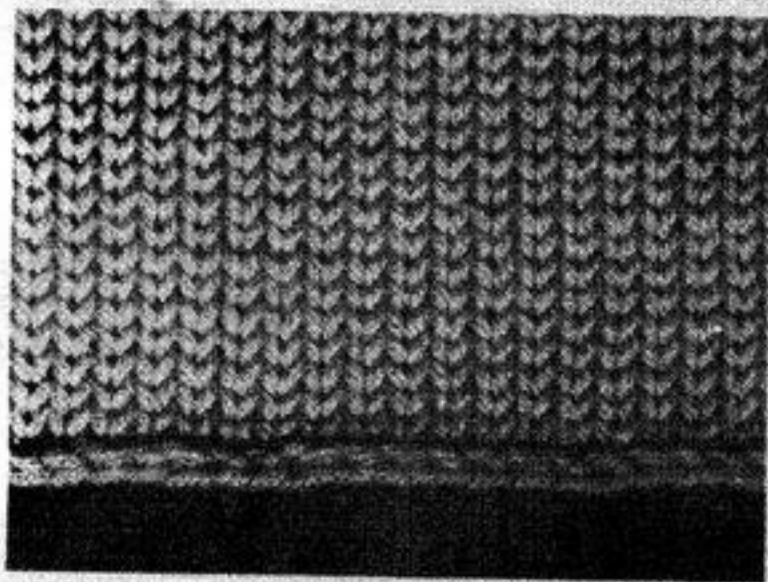


FIG. 16

### Stocking Stitch, Chain (FIG. 17)

In this case, casting-off takes place on the opposite side to the wool and cam box. Pass cam box to the left with the tension three number higher than normal knitting. With the latch needle of the yellow transfer tool, take off the first stitch and slip it behind the latch of the tool. Take off the second stitch and knit it through the first. (FIG. 18).

In the same way, knit the second stitch with the third and the third with the fourth, etc., until you reach the last stitch, through which passes the terminating thread of the work.

### Fancy stitches

Cast-off at the same side as the wool and cam box.

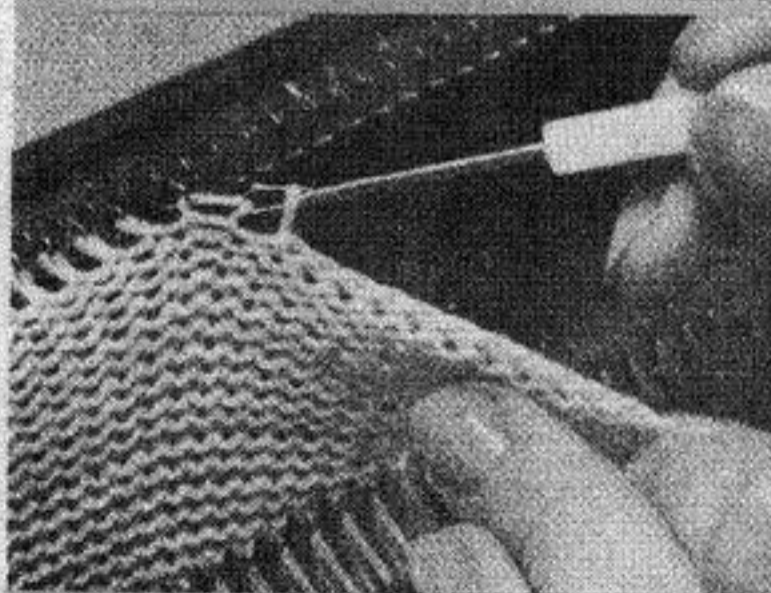
Transfer the front bed stitches to back bed, or on to the free needles.

Cast-off as for stocking stitch.

### Rib

Knit loose row, then transfer stitches to the back bed and use chain casting off method.

FIG. 18



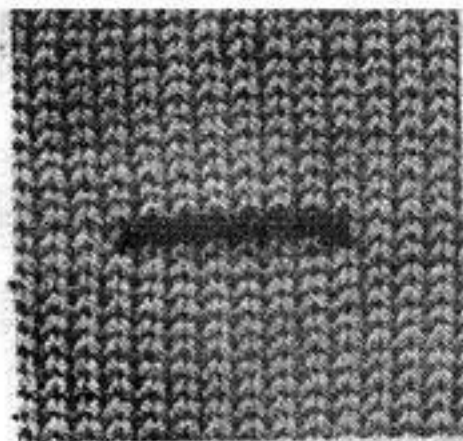


FIG. 19 a

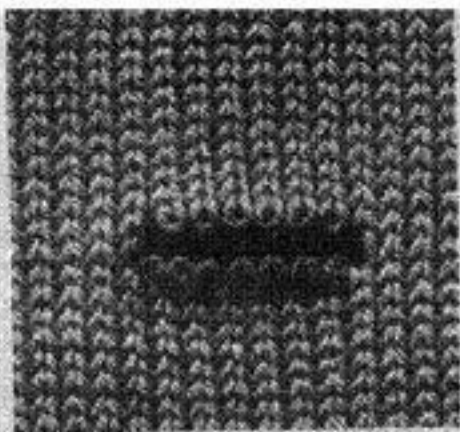


FIG. 19 b



FIG. 19 c

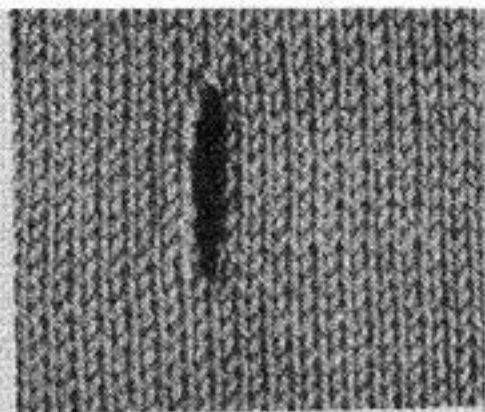


FIG. 20

## XI ★ BUTTONHOLES

### Horizontal

According to the size of the required buttonhole, put a pre-determined number of needles to number 2 position. Introduce another thread (preferably of a different colour) on to the hooks of these needles and, holding the base of each needle in turn, knit this thread by hand—consequently returning to number 1 position (FIG. 19 a). Continue to knit normally.

When the garment is finished, remove the additional thread (FIG. 19 b).

Finish off the buttonhole (FIG. 19 c).

### Vertical

The process is identical to that of the vertical

opening (FIG. 20). Instead of terminating the work, re-feed the needles of the previous row, and knit normally. Although finished off by the edge stitches, it is recommended that you reinforce vertical buttonholes.

### Layette buttonhole

With the eyelet needle of the red or green transfer tool, transfer a stitch to the hook of its right-hand adjacent needle. Do the same to the left. Take up a thread of the knitting and put it on one of the free needles. Continue to knit. The needles will take up the wool automatically.

## XII ★ SLITS AND NECK OPENINGS

### Vertical slit for a zip fastener (FIG. 21)

Bring the cam box to the right hand side of the place where the slit is to start. With the needle-thrust ruler, place all the needles to the left in holding position, thus:

IIIII.IIIII

rest work

The needles on the right remain in number 1

working position. Knit the necessary number of rows to obtain the length of the slit. Cast-off (see paragraph IX). Put the freed needles in non-working position. Break the thread.

IIIII.....

work

Cam box keys non-working. With the aid of the ruler, transfer the needles in holding position (latches open) to the number 2 position. Fix the thread to the thread eyelet of the clamp. Put the thread in the thread guide. Press the cam box key and knit an equal number of rows as before. Cast-off.

### Square neck openings (FIG. 22)

Three parts (two shoulder pieces - one neck piece). On the opposite side to the cam box, raise with

FIG. 21

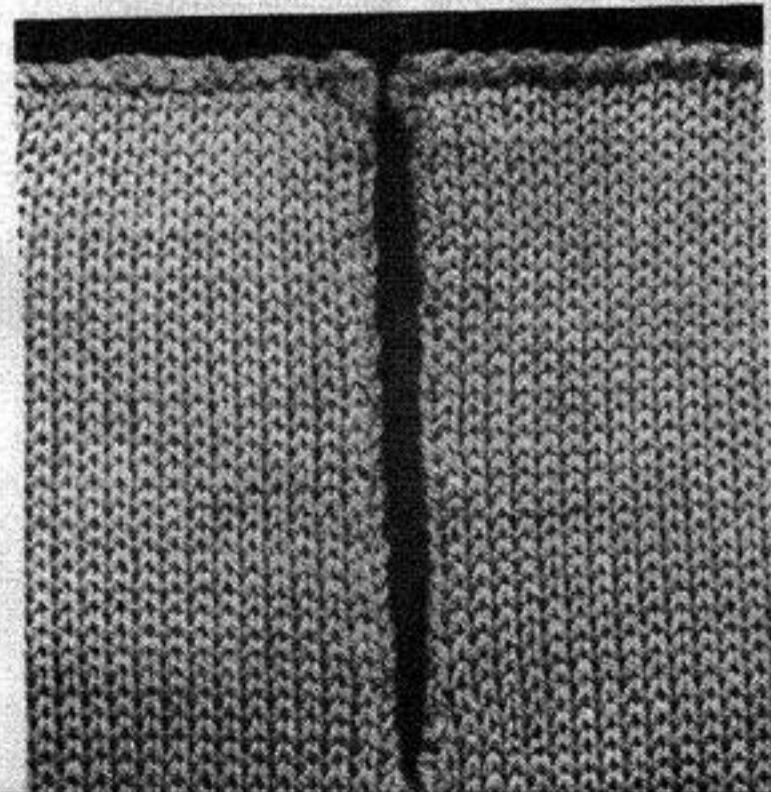
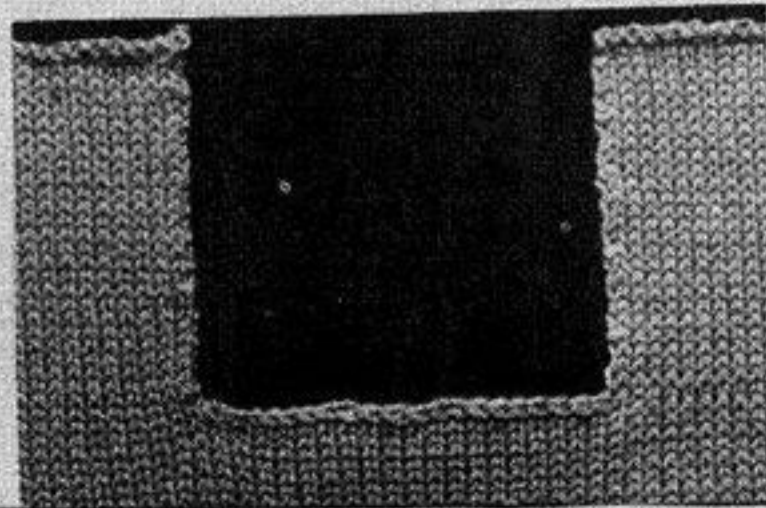


FIG. 22





the needle-thrust ruler, the required number of needles for the shoulder into holding position. Knit one row. Remove the thread from the thread guide. Cast-off the neck edge stitches. Place the freed needles in the non-working position.

Replace the thread in the thread-guide, and knit the two shoulder pieces as for the vertical slit (see paragraph XI).

#### V-shaped neck opening (FIG. 23) IIIHIO.IIIII

Using the eyelet needle of the stitch transfer tool (green or red), cast off the centre stitch and put the needle in the non-working position. On the opposite side to the cam box, place all the needles to the left or right (according to the position of the cam box) in holding position.

Knit the two shoulder pieces one after the other, decreasing as necessary for the opening, on each side of the O stitch.

#### Round neck opening (FIG. 24)

On the same side as the cam box, leave in number 1 position half the total number of stitches plus half the stitches to be cast off at the beginning of the opening. On the opposite side to the cam box, raise the other needles into holding position (using the needle-thrust ruler). Knit one row. Remove the wool from the thread guide. The cam box is positioned above needles in holding position. Cast off the centre stitches. Replace the wool in the thread guide and, using the cam box, knit. Decrease as necessary.

Now, referring to the directions given for the other neck openings, knit the second side.

### XIII ★ POCKETS

Prepare the opening as on page 31. When arriving at the row where the pocket is to be made, proceed as for the horizontal buttonhole, marking

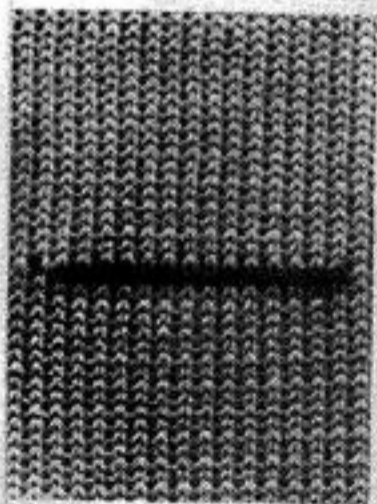


FIG. 25 a

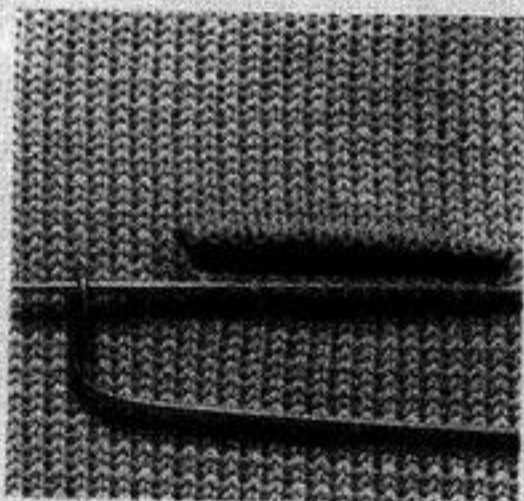


FIG. 25 b

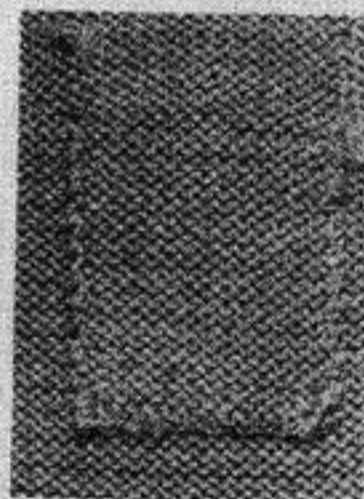


FIG. 26 a

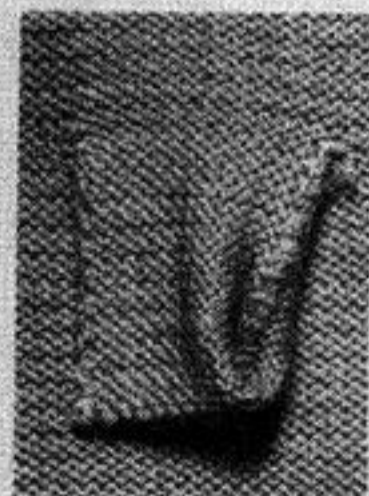


FIG. 26 b

the length by knitting the necessary number of stitches with a different thread (FIG. 25 a). When the piece of knitting is finished, remove

FIG. 23

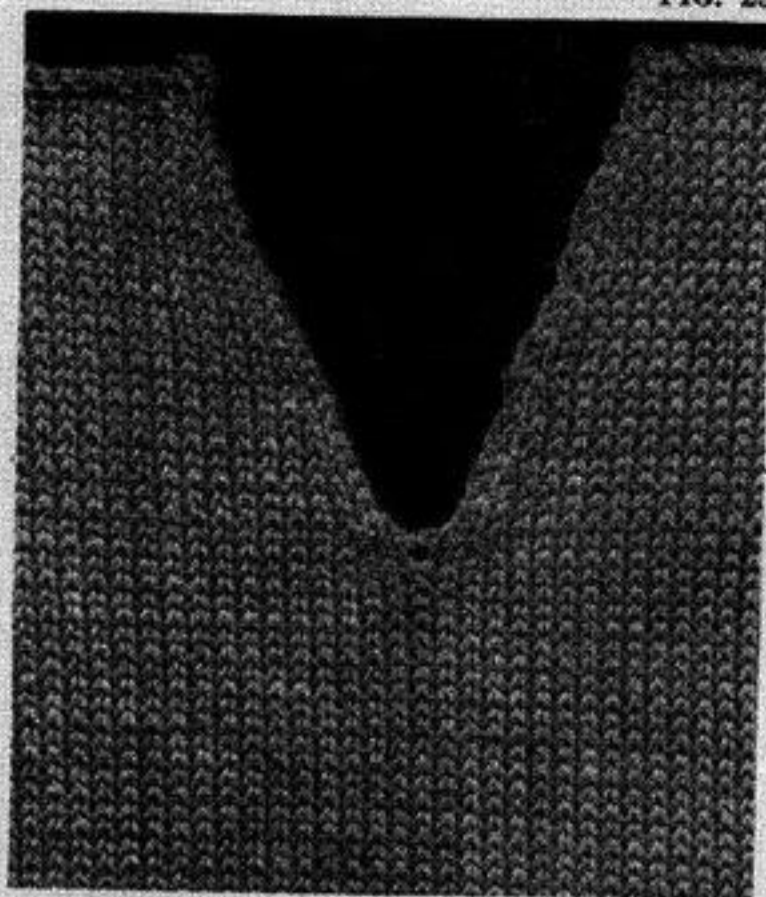


FIG. 24

this extra thread and thread the stitches on to a stitch-holder (FIG. 25 b). The stitches behind the opening will be remounted on back bed to knit the back of the pocket.

*Back-pocket—single (FIG. 26 a).*

For thick knitting, the back of the pocket is formed from a single thickness, and is fixed by slip stitches at the back of the work. The front stitches are cast-off (casting off as for stocking stitch, page 30).

*Back-pocket—double (FIG. 26 b).*

For fine knitting. After remounting the stitches at the back of the opening on back bed, knit double the length for the back of an ordinary pocket.

Remount the front stitches of the opening on to the back bed needles. Now there will be two stitches on each needle. Place one stitch behind

the latch and knit the second stitch on each needle through the first stitch. They can then be cast off, following the principle for casting off stocking stitch (page 30). Sew up the sides of the pockets thus obtained.

*Waistcoat pocket (FIG. 27).*

After completing the back of a single pocket, remount the front stitches on back bed. Increase one stitch each side and knit a few rows in stocking stitch. Cast off. Slip stitch the sides of the welt to the knitting.

*Pocket with band (FIG. 28).*

Knit a double pocket. When remounting the front stitches of the opening place them on the front bed. Using both cam boxes knit sufficient rows to form a welt of close ribbing. Cast off. Sew up sides of pocket and slip stitch sides of welt to the knitting.

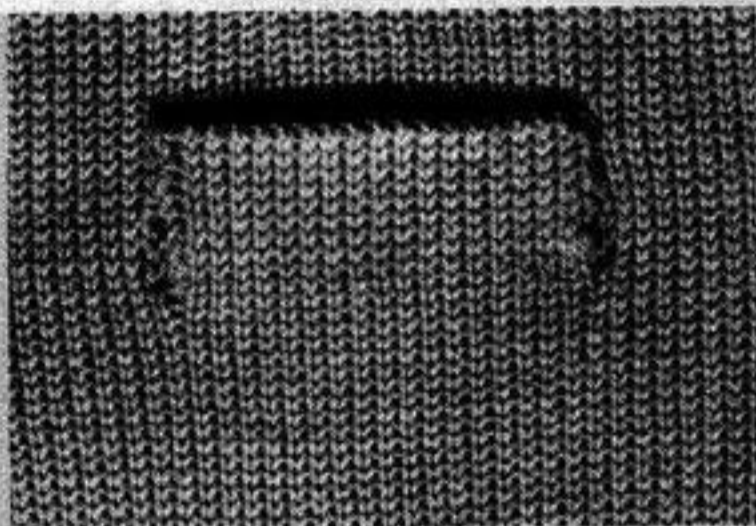


FIG. 27



FIG. 28

## XIV ★ SOCKS AND STOCKINGS

### SOCKS WITH SEAM MARKINGS

#### Simple heel (FIG. 29)

Executed by the dart method on back bed (see paragraph VII).

**Decreasings:** ★ on the same side as the cam box, move the first needle from number 1 working position to holding position. Knit one row ★.

Repeat from ★ to ★ until only one-third of the stitches remain in the centre, in number 1 working position.

**Increases:** ★ on the opposite side of the cam box, move the first needle to number 2 position. ★ Knit one row.

Repeat from ★ to ★ until all the needles are in number 1 working position.

These shortened rows form the heel cap. To prevent it rising above the needles, suspend the edge weights on it, or hold it with your free hand, pulling downwards against the flow combs.

#### Simple toe (FIG. 30)

**Decreasings:** Proceed in the same way as for the simple heel, until 3 to 7 stitches remain in the centre in number 1 working position (instead of one third) depending on the size of the foot.

**Decreasing at the side:** The whole length of the foot is seamed right up to the toe. At the beginning and end of each row, decrease, by means of the double transfer tool, by transferring the

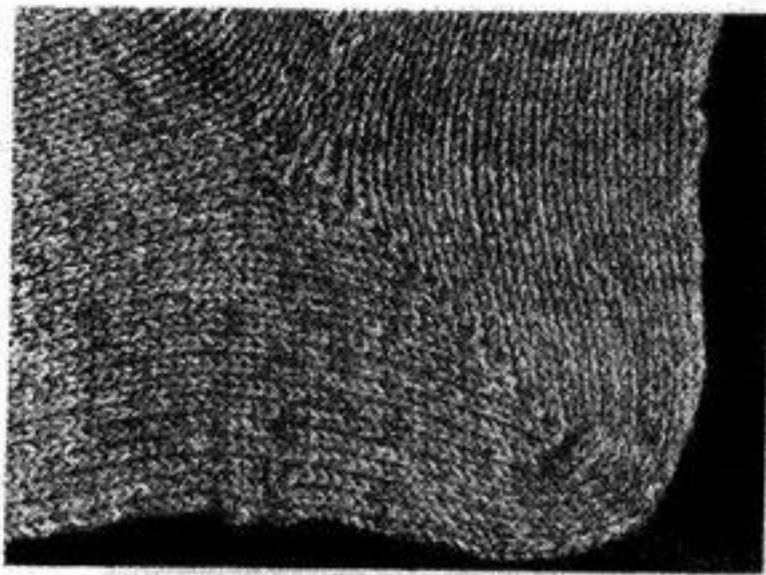


FIG. 29

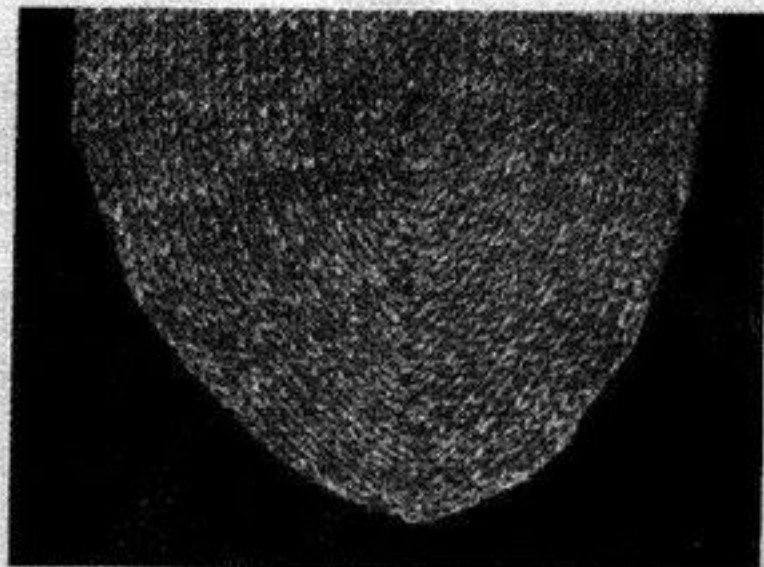


FIG. 30

next to last stitch to the third one. After the first decreasing, knit (two or three times) three rows, then (three or five times) two rows, until near the end when only one row should be knitted between the decreasing. The more rows you knit between each decreasing, the longer and more pointed the toe. Put three to seven stitches on auxiliary needles. Knit the second part exactly as the first. Assemble the stitches from the auxiliary needles at the point, and stitch. Join the foot with invisible stitching.

#### Socks, half-stockings - circular, without seams (FIG. 31)

Complete a circular knitting closed casting on (Page 18).

Cam boxes—green keys (for circular knitting). Knit the desired length for the leg. Then, back

cam box—keys non-working. Front cam box: red key. Knit one row.

★ Put one needle at the side where the cam box is in holding position (FIG. 32). Knit one row ★. Repeat from ★ to ★ until one third of the needles remain in number 1 position.

To increase for the heel on the side opposite to the cam box put a needle in the number 2 position (FIG. 33). Knit one row. Repeat from to until all the needles are in the number 1 position. Press the two green keys so that both the cam boxes are ready for circular knitting. Knit the required number of rows for the foot. Now shape the toe. ★ Using the double transfer tool, decrease one stitch on each side on each needle bed. Knit one round (or two if you desire a longer point) ★.

Repeat from ★ to ★ until the end.

### XV ★ UNDOING ONE OR MORE ROWS (FIG. 34)



FIG. 31

In the case of errors, it is possible to undo one or more rows without removing the knitting from the machine.

Take out the thread from the thread guide. Pull the wool away from the machine in order to tighten the stitches. Now, by hand, rotate the wool. This will lift the stitches from the previous row on to the needles, thus allowing the top row of stitches to be unravelled. If more than one row needs to be unravelled, it is preferable to return the needles to their original position after each row.

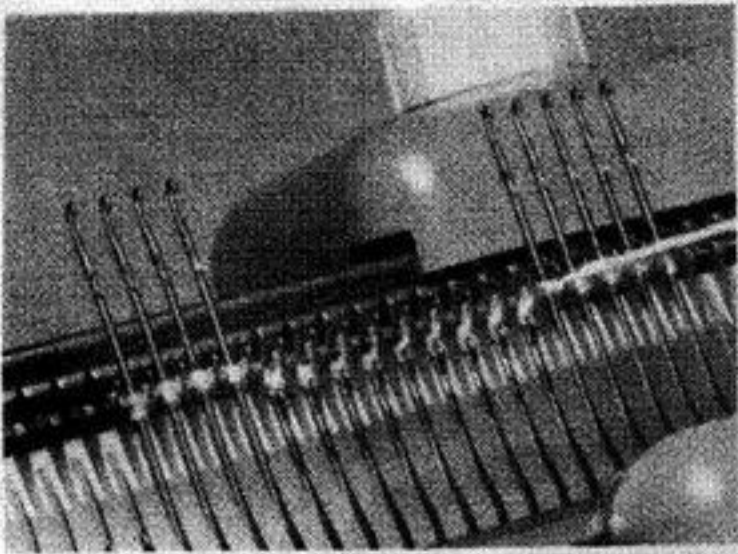


FIG. 32

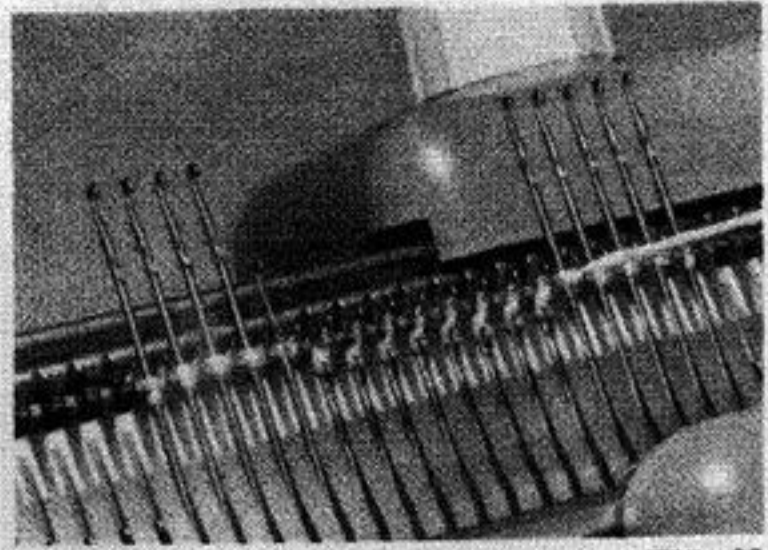


FIG. 33

## XVI ★ MENDING

Such hand or machine knitting as socks, sleeves, etc., can be repaired by using the knitting machine.

To patch worn heels, etc., hook the stitches below the defective spot on to the needle hooks (see paragraph III). Knit the necessary number of rows to form a patch.

## XVII ★ INVISIBLE SEAMING

Closed edge (FIG. 35)

Stitch on the reverse side of the knitting, always commencing at the place where the work stopped. Sew inversely to the knitting.

Open edge (FIG. 36)

as for Closed edge.

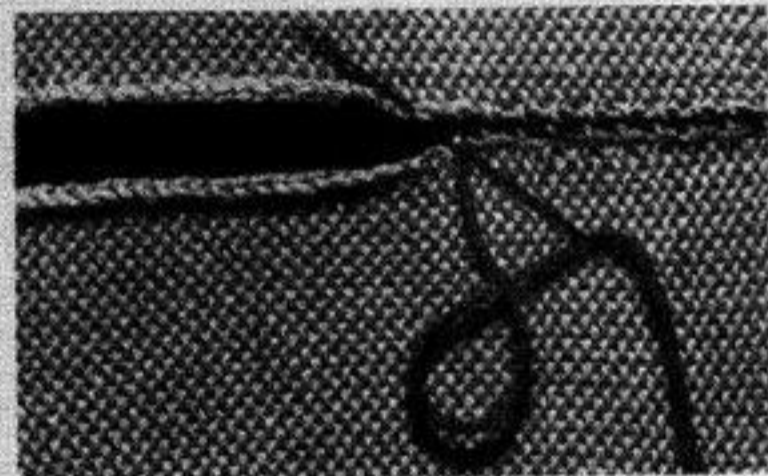


FIG. 35

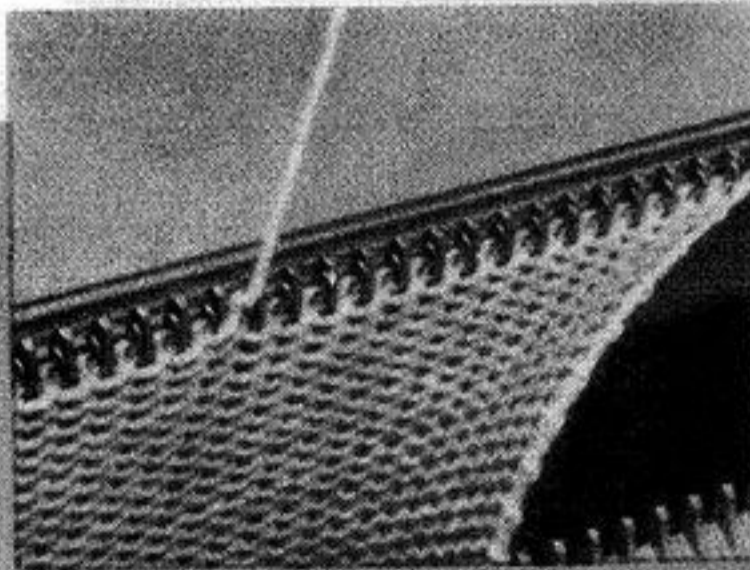


FIG. 34

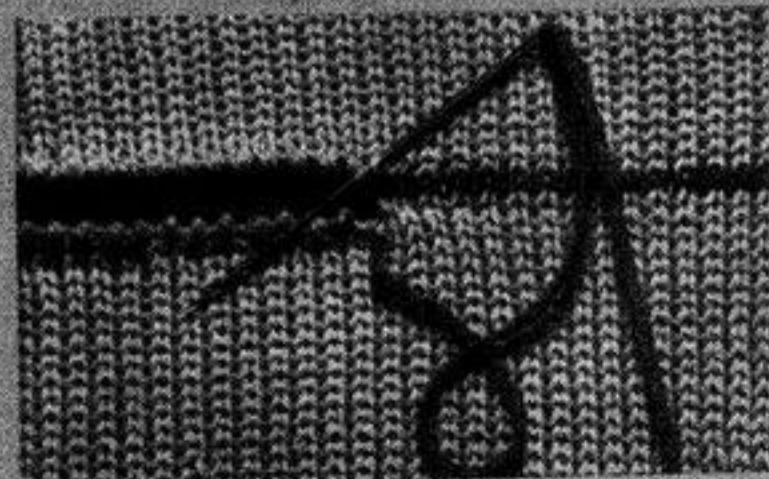


FIG. 36

# 4

## CHAPTER

### GARMENTS



*You now know your Knitting Machine. You know how it works; its parts; and its accessories. It remains for you to take advantage of your knowledge and knit.*

*Determine the exact tension to use for each material. Practice knitting with 3 or 4 ply wool before trying to knit fine wool. If you have knitted by hand, you will know that it is quicker to produce a garment*

*using thick wool. It is also more difficult to produce even knitting when using fine wool.*

*You will, however, find that your knitting machine will produce first-class work using a fine wool. In fact, the use of a very heavy wool will not necessarily give you the best results.*

*The various knitted pieces will eventually be assembled. Back-stitch the seams, using a big needle and the wool with which the garment was knitted.*

*To obtain that "chic" look, the knitting necessitates an assembly as carefully done as that by a dress-maker, tailor, etc.*



### VERY IMPORTANT

Before starting, it is important to choose the correct material for the work you are about to

undertake. Wool, nylon and cotton are variable so it is necessary to obtain the correct ply. This is most important.

It is generally observed that a fine wool will give a better result than a thick sporting wool.



### WOOL

Wool is the best material to use on a knitting machine.

This fibre, which is a natural one, possesses a characteristic elasticity, which gives it both a stretching quality and the means of returning to its original shape. It is a soft, warm fibre. It also possesses a "plasticity": if wool is subjected

to steam, it becomes pliable, and can consequently be shaped or moulded. It is advisable to carefully press all knitting to preserve the correct shape.

Spinners have gone all out for quality. They offer to the public an extensive range of knitting wools, each type having a precise use.

For school children who grow fast, and whose knitwear has to be replaced frequently, choose a good quality, hard-wearing wool.

For socks, use a wool and nylon mixture. This doubles their durability and does away with the tedious task of darning or repairing. For light sweaters, etc., choose a fine wool.

Some hard-wearing wools—those which are resistant to the air, to the sun and to sea water—can be made up into bathing suits, beach ensembles, play clothes, etc. They can be obtained in gay colours.

Layette wools, in delicate tones, are obtainable in several qualities and they can be made into a varied selection of garments.

The paper brand label which surrounds balls and skeins of wool generally lists usage suggestions for the particular quality. It is false economy to use cheap wool. Always choose a good make or brand. It will probably be more

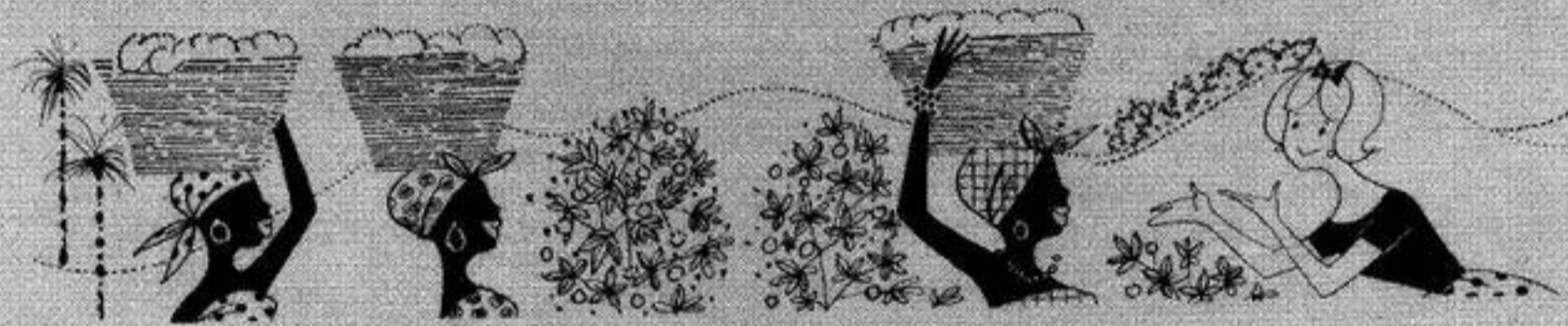
expensive but the result will be worth it, as the garment will have a better appearance and have a longer life.

## VERY IMPORTANT

Buy all the wool needed to make a garment at one time. It is difficult to match a colour exactly if you run short because, despite the precautions taken, dye tends to vary slightly from one batch to another.

Before starting a striped or Fair Isle garment, *make sure* that the colours harmonise and that they will not run when washed. Equally, to avoid being caught unawares, buy a sufficient quantity to start with.

Wool varies from one country to another. Should the sides of the work need to be slacker, do not pass the wool through the tension discs. If knitting seems too tight, use the method described on page 23.



## KNITTING COTTON

Cotton knits up very well on the Singer machine. It is always important to take into account that its elasticity is not quite that of wool, and consequently it needs a looser tension.

As with wool, it is wise to complete a few samples before undertaking an actual piece of work, and also to pre-determine the working plan (see page 41). Firstly, however, before working out any final measurements, wash one of the samples. At the first washing all cotton has a tendency to shrink, and if this is not taken into account the garment will be smaller than intended.

Cotton is especially suitable for children's undergarments, socks, etc.,. Many qualities are offered to the consumer for making such things as dainty blouses, sun-suits, etc.

As they are unharmed by numerous washings, from the point of view of use and economy, knitted cotton garments give complete satisfaction.

Before undertaking this kind of work, ask your supplier to guide you in your choice of cotton. You will be advised to buy either knitting "matt" cotton or special quality (brilliant or pearl).

## OTHER MATERIALS

During the past few years some new synthetic yarns have been made available to the public; first nylon, then orlon made their appearance, and now terylene. By degrees these new fibres have been brought into use in the hosiery trade;

and their use in the home is fast becoming common place.

As with wool and cotton, it is beneficial to determine the correct tension before commencing a garment.

Carefully follow the directions given for maintenance—washing, drying and ironing.



## CARE OF WOOLLENS

### WASHING

Before washing, repair all holes or tears, and ensure that pockets are empty—especially of traces of tobacco which will leave indelible stains as the result of washing. See that there are no pins attached. Remove any stains which will be resistant to washing. Prepare some luke-warm suds (that is, neither too warm nor too cold), remembering that the rinsing water must also be luke-warm. Garments will either shrink or colours will run in water that is too warm.

Plunge the woollen garment in the prepared tub (making sure that all the soap flakes are dissolved) and gently squeeze and press it in the suds. Do not rub. Matting, the fear of every housewife, is caused by rough rubbing—the fibres become entangled—or, again, by the direct contact of the soap or washing powder with the wool. If the article is very dirty, it should be washed a second time, in fresh suds, in order to remove all the particles of dirt prior to rinsing.

Rinse in several waters (temperature 100°F), handling the garment under the water in order not to stretch it. To ensure that the colours will not run, add a tablespoon of vinegar to the last rinsing water.

There are some excellent products on the market

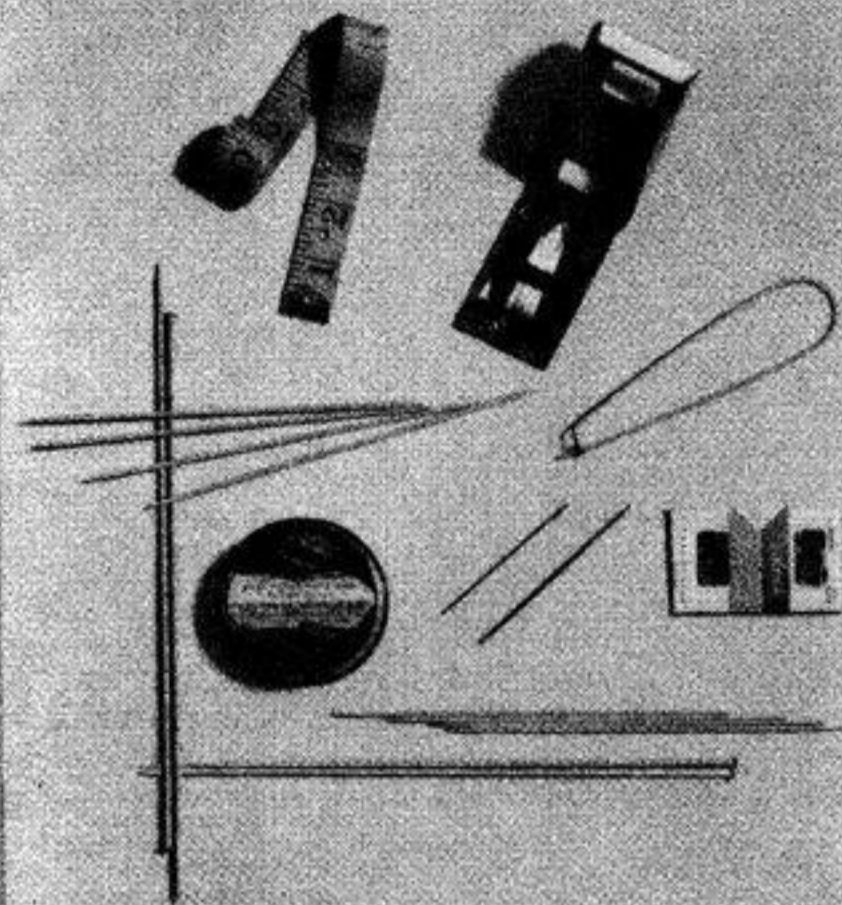
for the care of woollens. When using them, it is important to follow the individual instructions given.

### DRYING

It is necessary to take a few precautions after washing to see that your woollens regain their original shape.

First, press the garment between the palms of your hands to squeeze out the maximum amount of water. Then dry it between clean towels or absorbent linen. Dry it away from a direct source of heat after laying it flat and shaping it into its original form. Never wring or hang knitwear, otherwise they will get out of shape. If you are not sure that, after washing a loose-knitted garment, you will be able to re-form it into its original shape, before putting it into the suds trace its shape on to a piece of white paper. Then, when laying it flat to dry you can position it on top of this outline. It will then dry in its original form.

With a multi-coloured pullover, if you think that despite all the precautions you have taken the colours will run, insert one or two small towels between the back and front and in the sleeves when laying it out to dry.



Always have the following additional accessories to hand when using your Singer Knitting Machine. Hand knitting needles of various sizes.

Stitch-holder.

Large safety pins.

Bodkin for invisible sewing and for threading ribbon or elastic.

Darning needle (for fastening-off thread).

Crochet needle (for finishing or trimming).

Tape measure.

Pins.

Accessories such as the Wool Winder help you prepare the wool so that it passes smoothly through the tension arm.

Also available to order are (FIG. A), page 40):

1. An adjustable needle selector. This may be used for selecting the needles for fancy stitches and fair isle patterns.

2. An edge weight claw with 8 teeth.

3. A stitch holder with clip. This is particularly useful when knitting socks.

For finishing-off your knitting you will need your *Singer* sewing machine. In addition to the service it already gives you for your ordinary sewing requirements, it can also be used for making buttonholes and putting in zip fasteners (FIGs. B and C) on knitted garments. Its use, with knitting, being the same as for dressmaking.

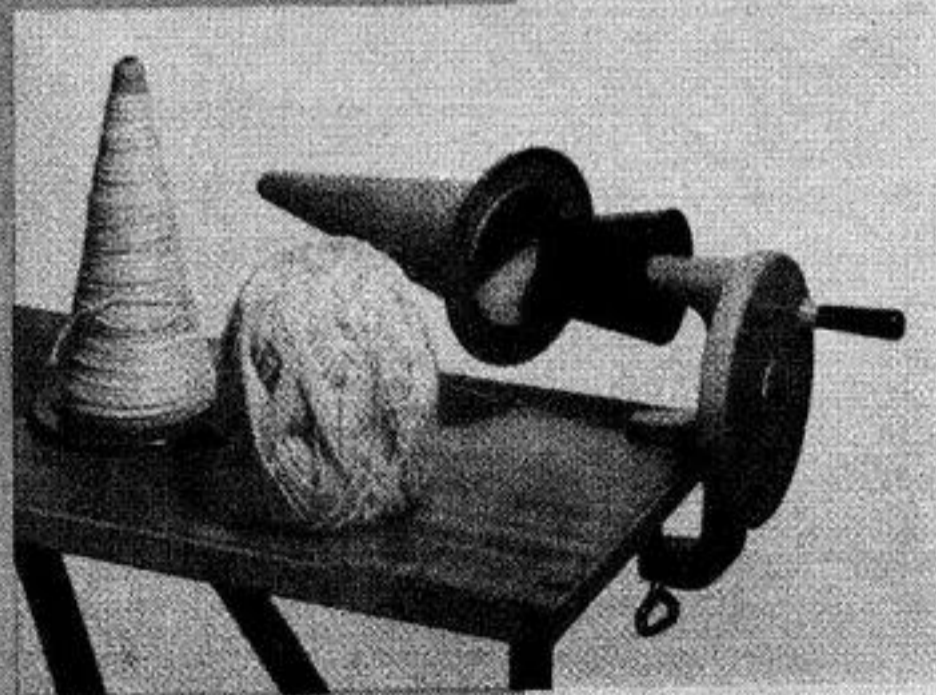




FIG. B

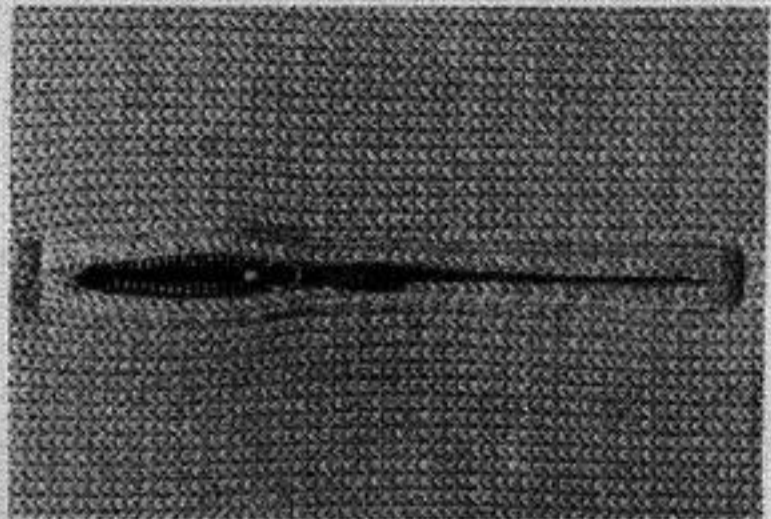
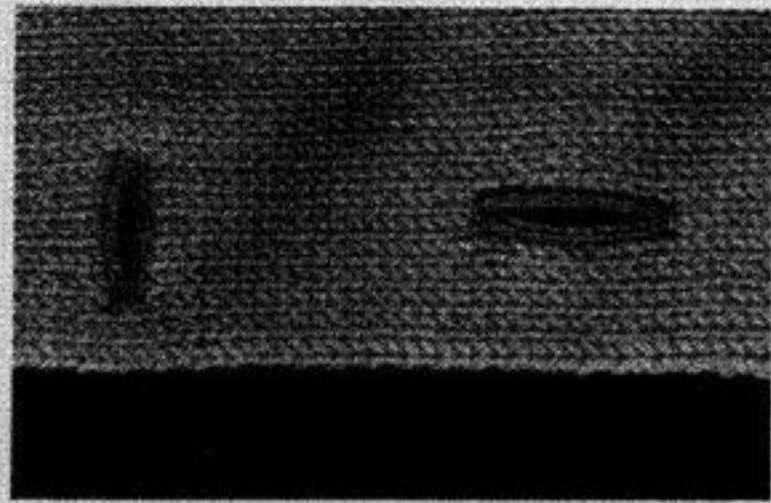


FIG. C

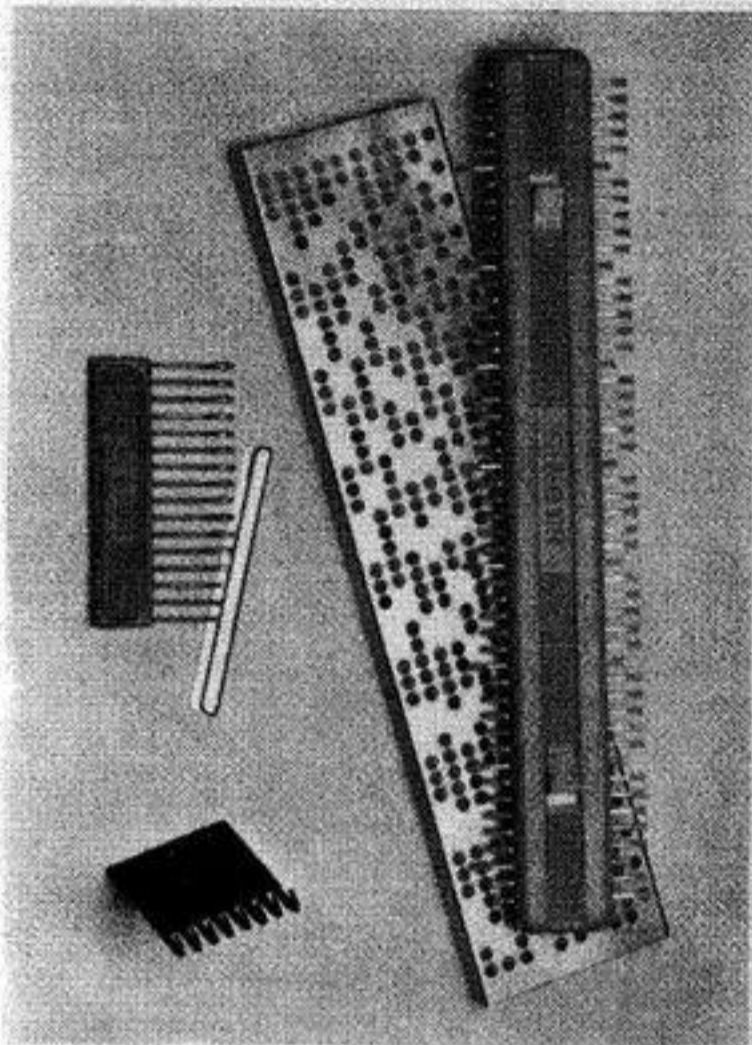


FIG. A

## PREPARATION OF WORK

You have chosen a style and a stitch. Once you have cleaned and brushed your machine and oiled the feet of the needles and cam box slide rails, it is ready for work.

Regulate the tension switch and try a few samples.

Cast on 80 stitches and knit 60 rows.

Press this sample, and using pins mark out a square 2" x 2". Count the number of stitches and rows in this square and make a note of the result. The sample can then be undone, and the wool re-wound for use.

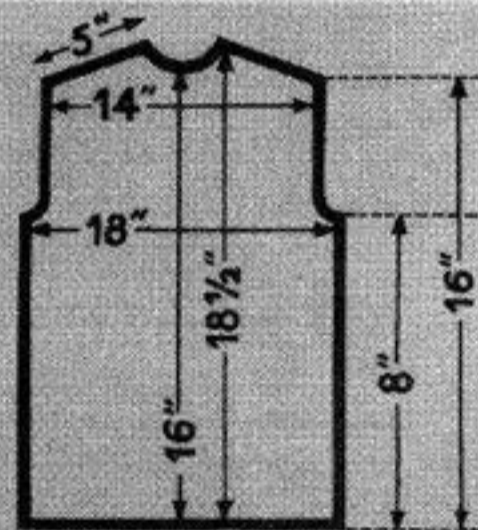
Check your knitting pattern with these figures in mind, making sure you knit to the right size.

### Example:

Assuming that the width of back is 18" and that your test piece gives you 14 stitches and 24 rows to each 2", the following would apply:

2" = 14 stitches.

2" = 24 rows.



Width of back:

$$\frac{18 \times 14}{2} = 126 \text{ stitches.}$$

Width after armhole decreasing:

$$\frac{14 \times 14}{2} = 98 \text{ stitches.}$$

Length of back:

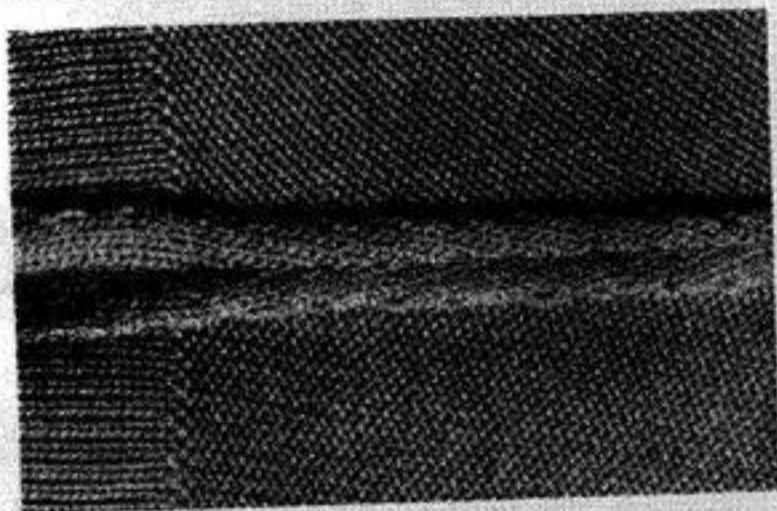
$$\frac{16 \times 24}{2} = 192 \text{ stitches.}$$

Underarm to waist:

$$\frac{8 \times 24}{2} = 96 \text{ rows.}$$

There are accessories on the market that do these calculations automatically.

Turn the row counter to zero (page 8). As the knitting advances, compare the figures on this counter with the notes you have made. In the example given above, when the 96th row is reached the armhole decreasing will have to begin.



## MAKING UP

### Preparation

Fasten off all the odd threads of wool (mounting threads, casting-off threads, joins). Then complete the pockets (page 32) and the buttonholes. Prepare the edging bands. Using a very damp cloth and a warm iron, press the various pieces, taking care previously to pin them into shape on the ironing board. With raised patterns, simply lay the iron on top of the cloth without pressing on it. When the various pieces are dry, (they will become a little damp as the result of the pressing), proceed with the assembly.

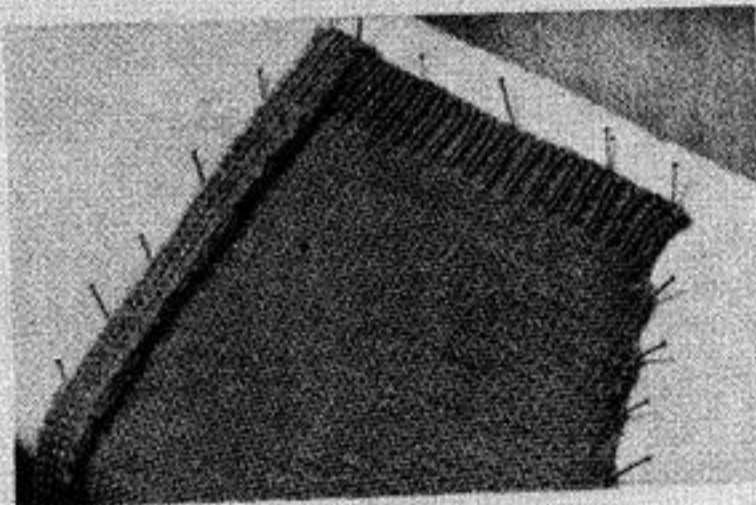
Make any necessary adjustments, straightening the shoulder or edge seams, etc.

Check the shape.

## IMPORTANT

When the work is divided (buttonholes, zip-fasteners, neck, etc.) always return the row counter to zero when one side is completed. Note the number of rows knitted and knit a similar number for the second side.

Always join wool at the edges of the knitting where the threads can be caught in the seams. Similarly, when knots appear in the wool break the thread and re-join at the edge of the work. If you ignore knots, they will show in the work and spoil the look of your finished garment.



Machine sew the seams. Open them out, and press flat with the iron.

To obtain regular sewing on wool, slacken the tensions on your Singer machine. The stitching will not, then, pucker the knitting.

Cotton is sewn normally.

"Invisible sewing" (page 35) will be necessary for fine wool, layette, raglan sleeves and "Italian style" decreaseings on certain pullovers.

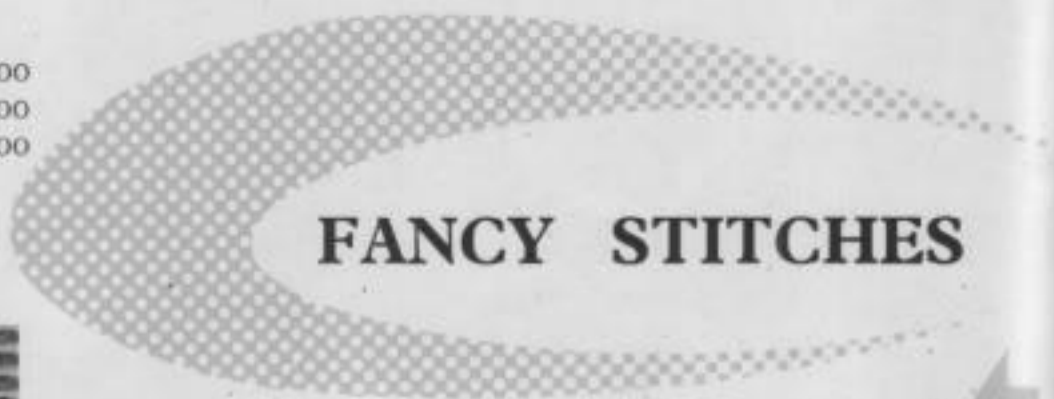
To protect the seams of sports clothes, jumpers, etc., it is preferable to reinforce them by double stitching.

At the bottom of jumpers and at the edge of borders, attach (with running stitches) a soft backing.

Sew on the buttons and any other trimmings.

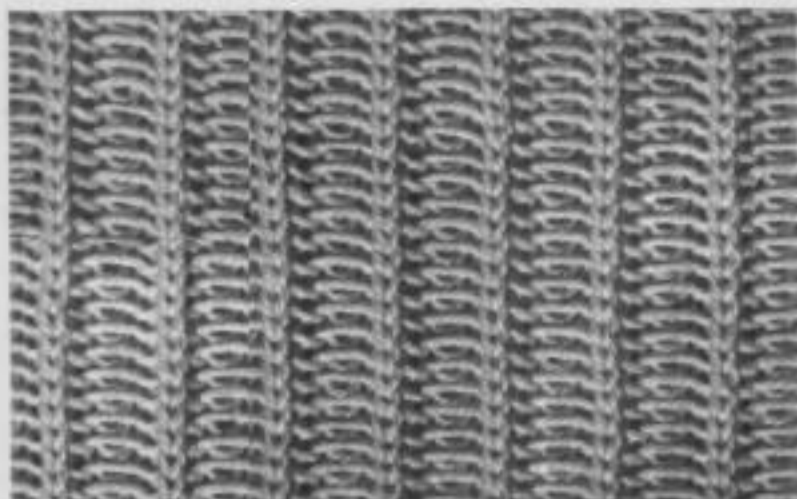
Your Singer sewing machine can be used to make sturdy buttonholes and to sew in zip-fasteners.

Various Classical Stitches .....	SERIES 100
Layette and Scarf Stitches.....	SERIES 200
Racking Stitches .....	SERIES 300



## FANCY STITCHES

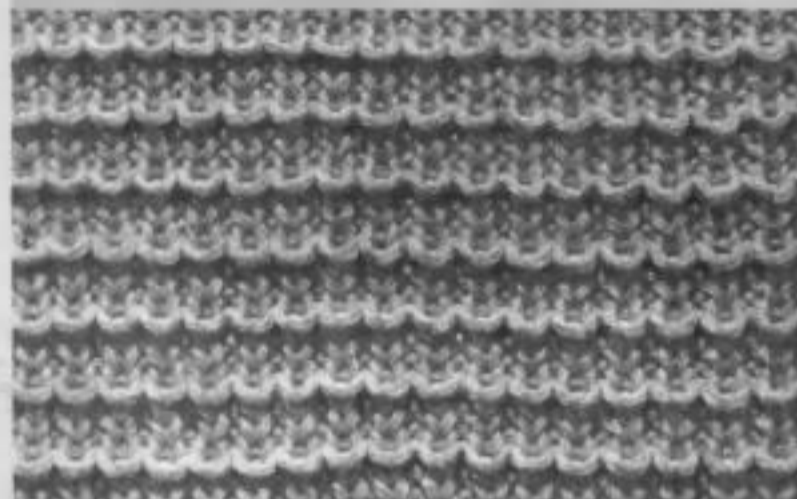
I = needle in working position 1  
 . = needle non-working.



### STITCH 101 *flow combs face to face*

Back Cam Box green and yellow keys.  
 Front Cam Box green and yellow keys.

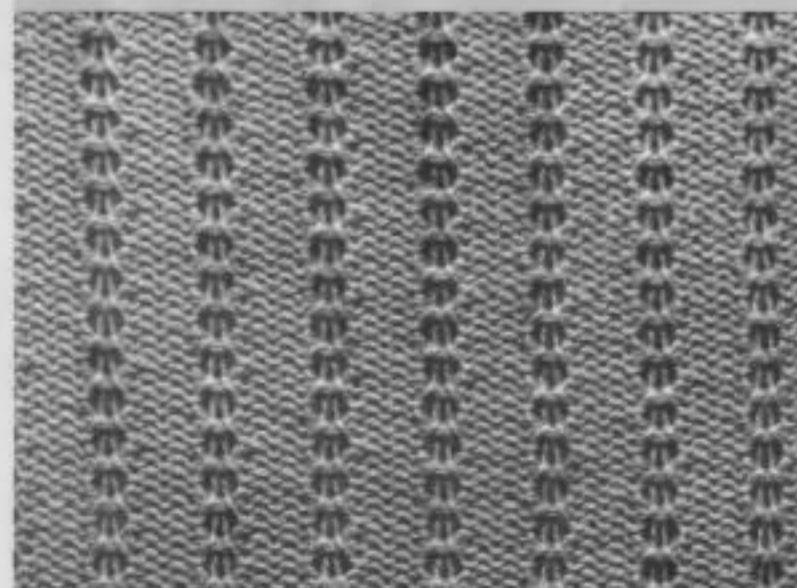
Back Bed . I . I . I . I . I . I . I . I . I  
 Front Bed I . . . I . . . I . . . I . . .



### STITCH 102 *flow combs face to face*

★ Back Cam Box red key.  
 Front Cam Box green and yellow keys. } Knit two rows.  
 Back Cam Box red key.  
 Front Cam Box red key. } Knit two rows.  
 Repeat from ★ to ★.

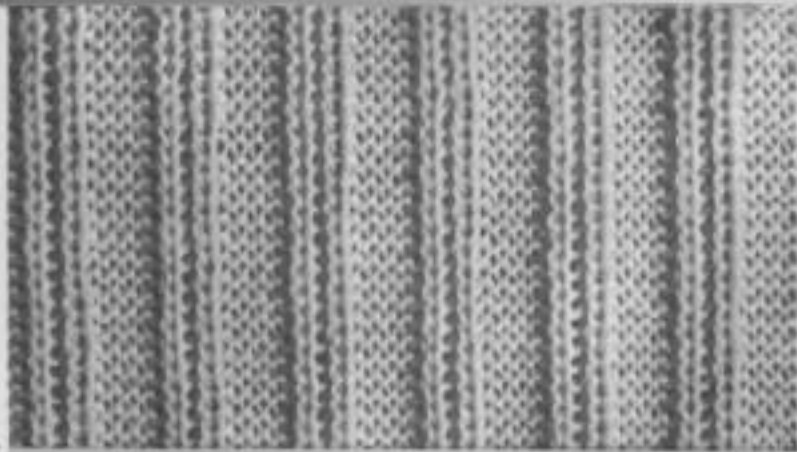
Back Bed . I . I . I . I . I . I . I . I . I  
 Front Bed I . I . I . I . I . I . I . I . I .



### STITCH 103 *flow combs face to face*

★ Back Cam Box red key.  
 Front Cam Box disengaged.  
 Cam Box to the right.  
 Place every third stitch in "holding" position.  
 Knit two rows.  
 Place the "holding" needles in number 2 position.  
 Knit one row ★.  
 Repeat from ★ to ★.

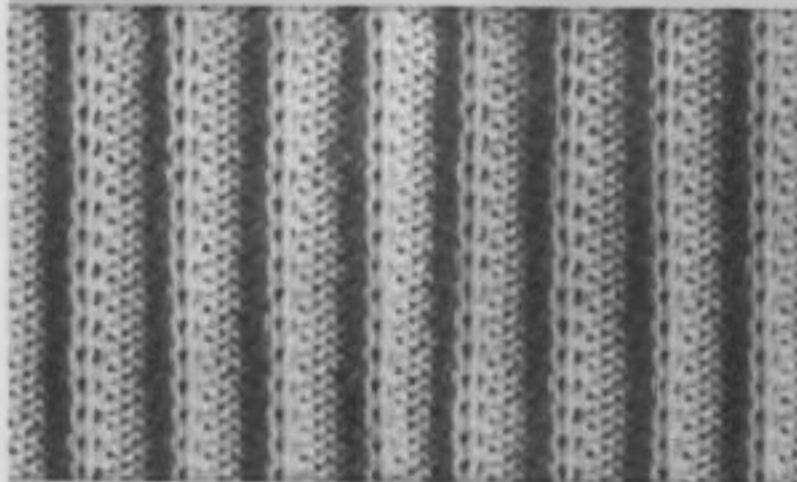
All needles on Back Bed.



**STITCH 104** *flow combs alternated*

Back Cam Box red key.  
Front Cam Box red key.

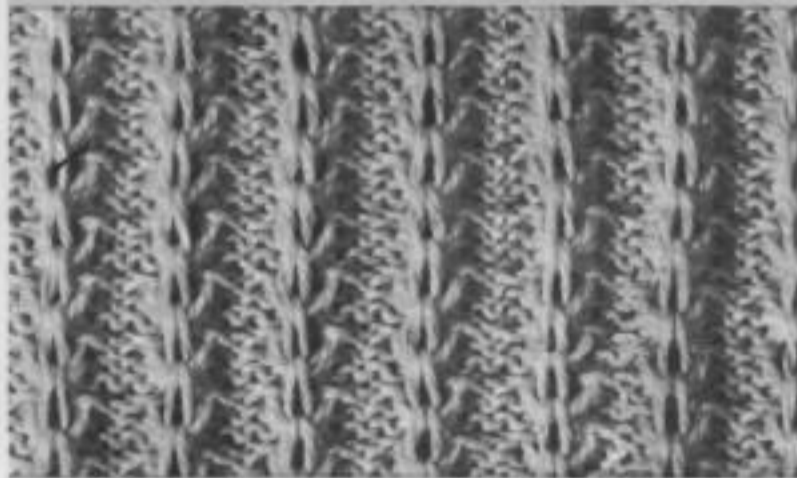
Back Bed I I I I I I I I I I I I I I I I  
Front Bed . I I . . . I I . . . I I . . .



**STITCH 106** *flow combs face to face*

Back Cam Box red key.  
Front Cam Box green and yellow keys.

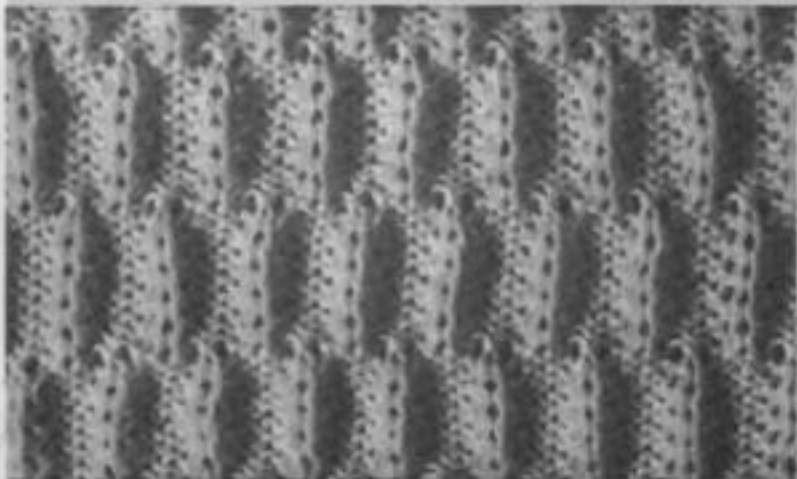
Back Bed I I I . I I I . I I I . I I I . I I I  
Front Bed . . . I . . . I . . . I . . . I . . .



**STITCH 105** *flow combs face to face*

Back Cam Box red key.  
Front Cam Box . . . . . 3 rows yellow key.  
I row red key.

Back Bed I I I . I I I . I I I . I I I . I I I  
Front Bed . . . I . . . I . . . I . . . I . . .



**STITCH 107** *flow combs face to face*

Back Cam Box red key. }  
Front Cam Box green } Knit 10 rows.  
and yellow keys. }  
★ Transfer the stitches:  
× transfers on to the Front Bed.  
∇ transfers on to the Back Bed.  
Back Cam Box red key. }  
Front Cam Box yellow } Knit 10 rows ★.  
and green keys. }  
Repeat from ★ to ★ × returning to Back Bed.  
∇ returning to Front Bed.

Back Bed I<sup>x</sup> I<sup>x</sup> I<sup>x</sup> . I<sup>x</sup> I<sup>x</sup> I<sup>x</sup> . I<sup>x</sup> I<sup>x</sup> I<sup>x</sup> . I<sup>x</sup> I<sup>x</sup> I<sup>x</sup> . I<sup>x</sup> I<sup>x</sup> I<sup>x</sup>  
Front Bed . . . I<sub>∇</sub> . . . I<sub>∇</sub> . . . I<sub>∇</sub> . . . I<sub>∇</sub> . . .