

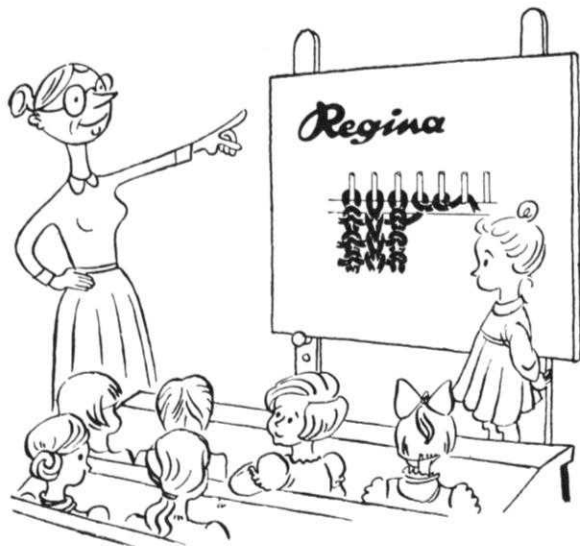
*Regina*  Princess

AUTOMATIC AND UNIVERSAL

I N S T R U C T I O N B O O K

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## *At last*

your last Regina home knitting machine, which you have been looking forward to for so long stands before you. In just a few hours you can enlarge your wardrobe of knitted garments to an extent you have never dreamed of.

## *Naturally*

it is necessary to get acquainted with your new machine, and it is the purpose of this little booklet to help you in this. First read it carefully and try to remember all the motions; then start practicing.

## *Because*

you will not only gain more enjoyment from your new knitting machine, but also from your achievements, this little effort will pay for itself.

# Introduction

The hand knitting machine has become indispensable in modern homes. Although it was virtually unknown a few years ago, it soon won the hearts of all knitwear lovers, thanks to its speed and versatility. In fact, it has gained importance comparable to that of the sewing machine, by enabling the housewife to provide an abundance of knitwear for her family, in the shortest possible time, and with the minimum of effort and expense. In many cases, it has provided an additional source of income.

As the time spent on housework has become increasingly precious,

so have engineers endeavoured to improve the efficiency and ease with which the housewife's daily work can be done. Sewing machines, washing machines, vacuum cleaners, and a host of other invaluable appliances have been developed in the course of time, to render service in homes throughout the world.

The hand knitting machine was one of the more recent arrivals on the domestic scene, and has simplified one of the most popular (though hitherto time consuming), occupations of housewives, so that it has now become a source of profitable pleasure.

## DIFFERENT TYPES OF HAND KNITTING MACHINES

Since the invention of the first hand knitting machine, a large number of different types of knitting machines have gradually been brought onto the market. The more significant of these are briefly described below.

**The open needle system.** Primarily for producing fabric based upon stocking stitch, although with the aid of a comb, most machines of this type can also be used for garter stitch.

**Single bed machines,** which produce only fabrics based upon stocking stitch. Here the Latch Needle system, formerly used only on the large industrial knitting machines, has been adapted to domestic use. These machines will knit the basic stitch, without true ribbing, at varying speeds. Their speed is dependent upon whether the wool is fed into the latch needles by hand, or whether the machine operates with an automatic wool feed. In either case, the speed is considerably greater than that of the open needle system.

**Single bed machines with attachment.** Attachments enabling knit-one, purl-one work to be knitted, and the formation of double

texture ribs on one or both sides of the fabric (e. g. Fisherman's rib), are available for some types of single bed latch needle machines.

**Twin bed machines.** The use of two needle beds arranged opposite one another enables these machines to produce any type of ribbing, such as knit 2 — purl 2, knit 2 — purl 3, knit 4 — purl 4, knit 1 — purl 5, etc.

Most of these patterns may also be knitted, using patent cam mechanisms, to give double texture ribs on one or both sides of the fabric (e. g. single or double sided Fisherman's rib). The ability to produce tubular knitting enables socks, for instance, to be made without seams in one operation.

Almost all twin bed machines, however, required weights or heavy combs for casting on.

## THIS IS WHERE OUR REVOLUTIONARY DESIGN PROVIDES GENUINE TECHNICAL PROGRESS

REGINA hand knitting machines have become popular throughout the world as a result of their sturdy construction and efficient design. This is shown by the large number of REGINA-Princess-STANDARD hand knitting machines which have already been sold.

The new REGINA-Princess-AUTOMATIC and REGINA-Princess-UNIVERSAL hand knitting machines are further developments of our REGINA-Princess-STANDARD hand knitting machine, many thousands of which have already given the fullest satisfaction to their users.

To place a really versatile twin bed knitting machine within the easy reach of housewives, knitting shops and home knitters, REGINA-Princess-AUTOMATIC, the modern single bed hand knitting machine, has been so designed as to be expandable at any time to form the REGINA-Princess-UNIVERSAL twin bed hand knitting machine.

For this reason, it is no longer necessary to make the difficult choice between a simple single bed machine and the more expensive twin bed machine, before its potential use can be assessed and can be compared with the actual requirements of its owner. Every owner of the progressive REGINA-Princess-AUTOMATIC can subsequently convert her machine into one of the last twin bed hand knitting machines, the REGINA-Princess-UNIVERSAL, when she has learned to handle her first machine, and can confidently assess the increased working potential which the second will offer her.

**This twin bed machine has no combs, no weights, and need not be clamped to the table!**

For this reason, we have prepared this booklet for both hand knitting machines — i. e. for the basic unit, and for the twin bed machine.

Our aim is to show the purchaser of a REGINA-Princess-AUTOMATIC in succession all the kinds of work which can be accomplished with her machine.

To the purchaser of a REGINA-Princess-AUTOMATIC, the booklet will give an idea of the even wider range of additional work to which she has an opportunity at any time by expanding her basic unit.

### REGINA-Princess-AUTOMATIC

does not have an "attachment" in the usual sense but can be expanded when required for conversion into the

### REGINA-Princess-UNIVERSAL,

the latest REGINA twin bed hand knitting machine with racking device, without combs, without weights and without the need for being clamped to the table.

Please study the general views and the technical explanations on the following pages before actually starting to knit.

Depending on whether you possess a single bed machine (AUTOMATIC or the complete twin bed machine (UNIVERSAL), please read the respective paragraphs on pages 4—8 most carefully and always follow the rules given there for the sake of your future efficiency.

**IMPORTANT:**

The REGINA-Princess-AUTOMATIC single bed hand knitting machine can be converted into the complete twing bed machine shown on fig. 6 simply by purchasing the second half.

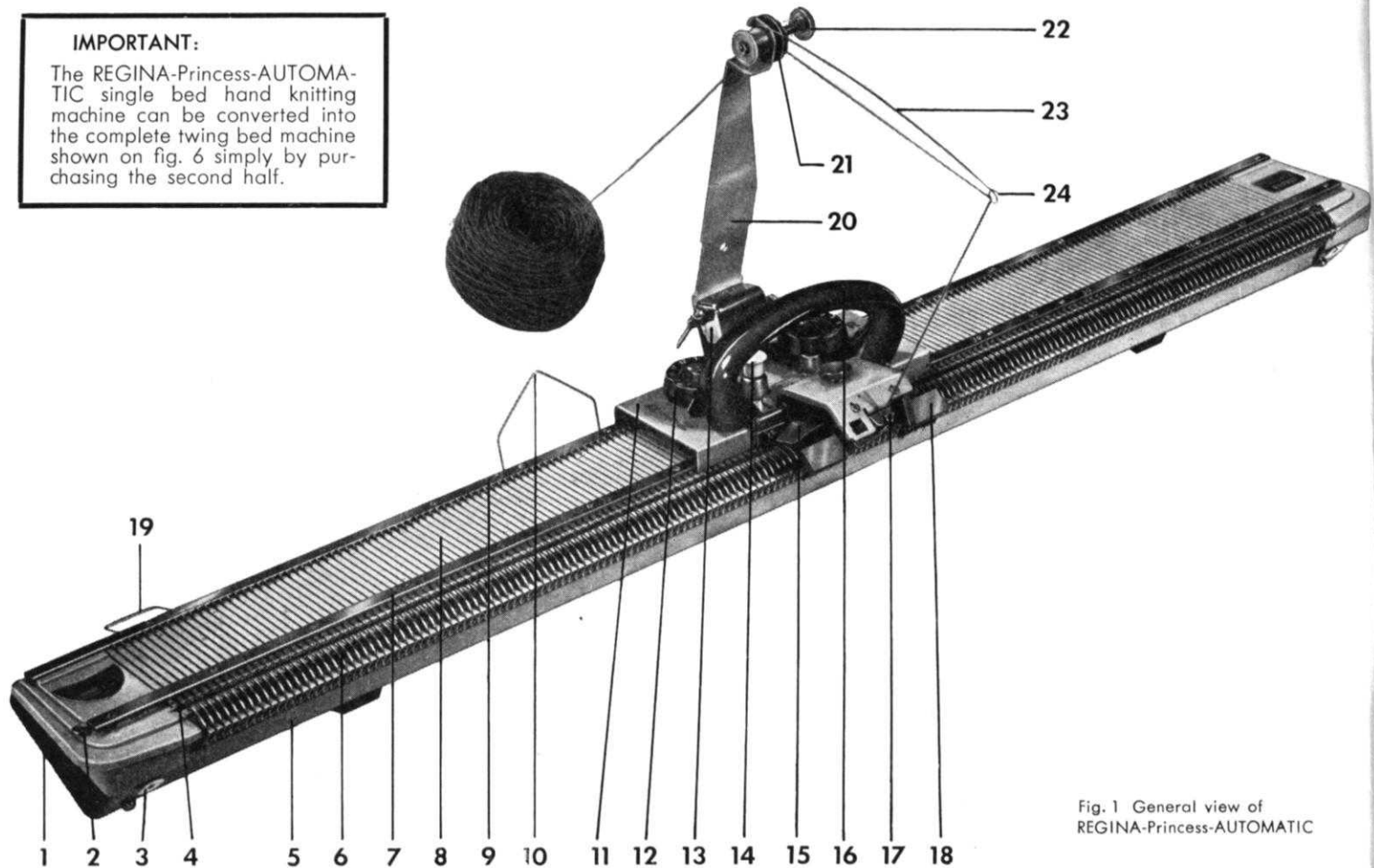


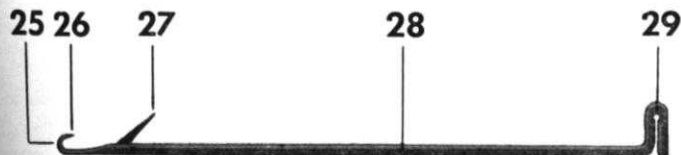
Fig. 1 General view of REGINA-Princess-AUTOMATIC

# Regina<sup>®</sup> Princess-AUTOMATIC

## DESCRIPTION OF PARTS

- |                                  |                                 |
|----------------------------------|---------------------------------|
| 1 End Piece                      | 13 Row Counter                  |
| 2 Eyelet of Needle Retaining Rod | 14 Patent Cam Knob              |
| 3 Casting-on Eyelet              | 15 Sinker Shuttle               |
| 4 Needle Brake Rod               | 16 Cam Box Handle               |
| 5 Chassis                        | 17 Thread Guide                 |
| 6 Sinkers                        | 18 Brush Holder with Brush      |
| 7 Stitch Scale                   | 19 Cam box retaining spring     |
| 8 Needle Bed                     | 20 Wool feed Carrier            |
| 9 Rear Side Rail                 | 21 Thread Braking Disks         |
| 10 Adjustable Row Counter Trip   | 22 Thread Brake Adjusting Screw |
| 11 Cam Box                       | 23 Span Wire                    |
| 12 Stitch Tension Regulator      | 24 Thread Eyelet                |

Your new single bed hand knitting machine is shown on the opposite page. Do identify each part and memorize its name, so that you will more easily understand the instructions given on the following pages.



### THE LATCH NEEDLE

- 25 Needle Head
- 26 Hook
- 27 Latch
- 28 Shaft
- 29 Needle foot

Fig. 2

**IMPORTANT!**

This machine is available as a complete unit or in two parts (AUTOMATIC and SUPPLEMENT to AUTOMATIC).

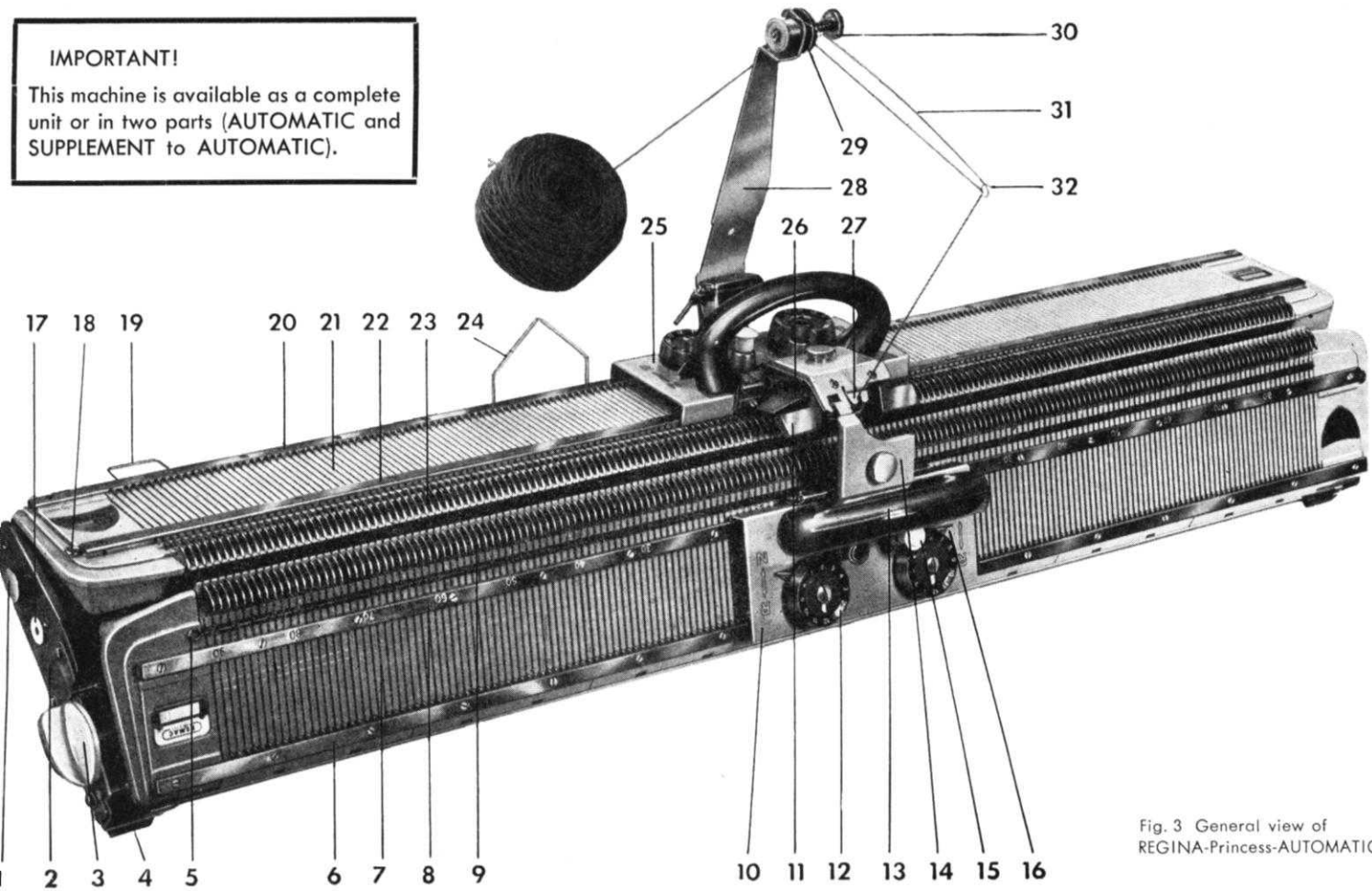


Fig. 3 General view of REGINA-Princess-AUTOMATIC



DESCRIPTION OF PARTS

Your new twin bed hand knitting machine is shown on the opposite page. Identify each part and memorize its name, so that you may more easily understand the instructions given on the following pages.

- |  |                                 |
|--|---------------------------------|
| 1 Coupling Screw                             | 17 Casting-on Eyelet            |
| 2 Coupling Cradle                            | 18 Needle Retaining Rod         |
| 3 Racking Switch                             | 19 Cam box retaining spring     |
| 4 Front Hinge Pin                            | 20 Rear Slide Rail              |
| 5 Needle Brake Rod                           | 21 Back Needle Bed              |
| 6 Front Slide Rail                           | 22 Rear Stitch Scale            |
| 7 Front Needle Bed                           | 23 Rear Sinkers                 |
| 8 Front Stitch Scale                         | 24 Adjustable Row Counter Trip  |
| 9 Front Sinkers                              | 25 Rear Cam Box                 |
| 10 Front Cam Box                             | 26 Rear Sinker Shuttle          |
| 11 Brush Holder with Brushes                 | 27 Thread Guide                 |
| 12 Stitch Tension Regulator                  | 28 Wool feed Carrier            |
| 13 Cam Box Handle                            | 29 Thread Braking Disks         |
| 14 Front Cam Box coupling with Knurled Screw | 30 Thread Brake Adjusting Screw |
| 15 Patent Cam Knob                           | 31 Span Wire                    |
| 16 Hose Lever                                | 32 Thread Eyelet                |

# ASSEMBLING THE HAND KNITTING MACHINES

## IMPORTANT!

### Please follow our advice:

Even if you are already the lucky owner of the complete twin bed machine, curb your understandable desire to work on both needle beds immediately.

It is essential that you first become familiar with knitting on the single bed machine.

For this reason you should begin your knitting experiments as though you had only the single bed machine and follow the instructions given on the following pages, the Front Needle Bed being placed aside for the time being.

The removal of the Front Needle Bed is simple, as is shown in fig. 37, page 22. The Front Needle Bed is swung up and forward, then lifted from the coupling Cradle.

There are two ways in which the two CAM BOXES can be linked:



Fig. ad 1



Fig. ad 2

1. Both cam boxes run simultaneously: to be used for **any** kind of knitting.
2. One Cam Box running ahead of the other Cam Box: to be used **only** for knit 1 purl 1 ribbing when using thin wools (1 to 3 ply). When knitting, it is advisable to move the rear Cam Box instead of the front Cam Box.

**Second position must not be used for racking or any other kind of knitting, except for knit 1 - purl 1 ribbing.**

## ASSEMBLING THE REGINA-PRINCESS-AUTOMATIC SINGLE BED MACHINE

The machine is delivered with the Cam Box fixed by two retaining springs, which should be squeezed out of position. The Wool Feed Carrier has to be fixed to the back of the Cam Box as is shown in the general view on page 4. To do this, the two fixing screws on the back of the Cam Box are loosened, the Carrier is inserted from above and the screws are then moderately tightened. Then the REGINA-Princess-AUTOMATIC is placed on any table, preferably without a table-cloth, and is immediately ready for knitting after the further instructions given on page 10 and thereafter have been followed.

## ASSEMBLING THE REGINA-PRINCESS-UNIVERSAL TWIN BED MACHINE

The machine is delivered with the Cam Box fixed by two retaining springs, which should be squeezed out of position. The Wool Feed Carrier has to be fixed to the back of the Cam Box as is shown in the general view on page 6. To do this, the two fixing screws on the back of the Cam Box are loosened, the Carrier is inserted from above and the screws are then moderately tightened. Then the REGINA-Princess-UNIVERSAL is placed on any table, preferably without a table-cloth, and is immediately ready for knitting after the further instructions on page 22 have been followed.



Fig. 4

## THE ACCESSORIES

(from left to right)

- Needle Selector
- Screwdriver
- Pulling Hook
- Threading Needle
- Special Crochet Hook
- Double Transfer Tools (2)
- Latch Needle Tool
- Spare Latch Needles (4)
- Accessory Wallet

# CARE AND OWNER-MAINTENANCE OF THE HAND KNITTING MACHINE

The proper care of your Regina-Princess requires only little time and effort, but care is essential for the faultless operation and long life of your machine.

## Cleaning

Never let the machine get dusty by letting it stand around without a cover and remove the wool threads from the Needle Grooves using a small brush or pointed piece of wood.

## Oiling

The following parts can and should be oiled from time to time: The Sinker Shuttle should be oiled on the edge which lifts the Sinkers. (Or vaseline can be used.) It is important to keep the upper Sinker Edges which slide over the Shuttle well oiled, using an oiled rag. Oil the various guides of the Cam Box which move the latch needles but only after thorough cleaning. Also the feet of the Sinkers should be oiled. It is also important to lubricate the two Slide Rails, where they come into contact with the Cam Box, i. e. the underneath outside edges. The Needle Feet should be oiled lightly.

Only best quality thin sewing-machine oil should be used which can be applied with a small camel-hair brush or a clean rag. The oil should be used very sparingly, too much oil is harmful. The needle bed need not be oiled but should be cleaned and also the grooves should be wiped over with a clean rag after removal of the needles. However, the grooves must not be oiled.

## Replacing latch needles

Only extreme force in handling the machine would break latch needles. However, in case of such an event latch needles can be exchanged as follows: Remove the Cam Box and insert the Pulling Hook into the Eyelet of the Needle Retaining Rod which can be pulled out until the latch needle to be exchanged is freed. The needle can now be easily lifted (the latch must be closed) and pulled out backwards over the Back Slide Rail. A new needle can be replaced in the same way. When all the latch needles are to be removed for a thorough cleaning of the machine, the Needle Retaining Rod should be completely pulled out.

# THE BASIC KNITTING TECHNIQUE OF THE SINGLE BED MACHINE

## THE CONTROLS ON THE CAM BOX

The Cam Box, which governs the movement of the needles during knitting, has the following controls:

**The Tension Regulators** (right and left), which can be set to any of stitch sizes 1—12, must both be set to the same number when knitting with one bed.

**The Hose Levers** (right and left) serve to render the Cam Box inoperative on one or both sides and remain in position "N" when knitting with one bed.

**The Patent Cam Knobs** (right and left) must always be depressed knitting with one bed.

## THE ADJUSTMENT OF THE STITCH SIZE

When using the single bed machine, both Tension Regulators should be set to the same number, except for certain special patterns.

The stitch size will depend on the setting of the machine as well as on the thickness and elasticity of the wool used and on the pattern to be knitted. Thick wool should not be knitted at very tight tensions.

**We recommend the use of soft 3ply botany wool for the first casting-on and knitting exercises and, to begin with, tension setting 9.**

## THE ROW COUNTER TRIP

The Row Counter Trip can easily be removed and adjusted when it is squeezed together.

## THE VARIOUS POSITIONS OF THE NEEDLES

Depending on the function to be fulfilled by the needles during the knitting operation the following needle positions may be distinguished:

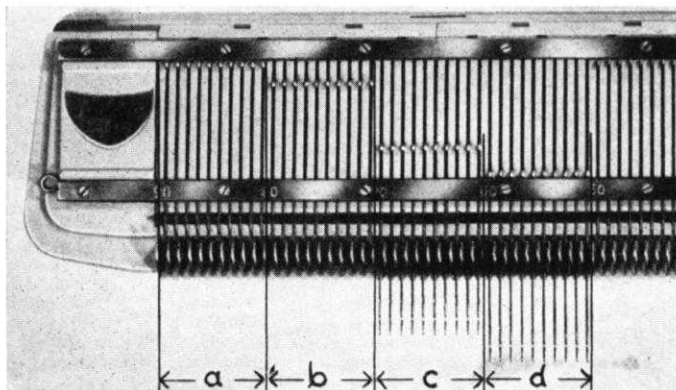


Fig. 5

- a) **Non-working position.** The Needle feet resting against the lower Slide Rail. During knitting, all needles which are not in use must be in that position.
- b) **Working position.** The needles are exactly aligned, with the Needle Heads level with the front edge of the Needle Bed.
- c) **Intermediate position.** In this position the feet of the needles are exactly between the two lines marked on the Needle Bed.
- d) **Holding position.** The feet of the needles are touching the Front Slide Rail. This position will be occupied by needles carrying stitches which are not being knitted for the time being.

## MOVING THE NEEDLES INTO WORKING POSITION

Before beginning to knit, the needles required must be brought into the working position. To do this, push the feet of the required number of needles forward approximately as far as the middle of the Needle Bed. This will be facilitated by using a ruler. Then the Cam Box is carefully pulled across the machine to align the needles in working position and open the Latches.

**Important:** Never use any force if the Cam Box should bind, but check that all needles are in their proper position.

## MOVING THE SINKERS INTO WORKING POSITION

REGINA-Princess is supplied with the Sinkers in the non-working position. For this reason the Sinkers which correspond to the needles in use must be moved into their working position before the knitting begins.

The Sinkers are easily moved into the working position by lifting the Sinker Hook with the fingernail (fig. 6) or with an instrument such as a ruler, the Needle Selector, or the like (fig. 7).

Care should be taken to move only those Sinkers into the working position which are between the Needles so that the knitting range has a needle at its right-hand and left-hand ends.

To render a Sinker inoperative, a slight pressure on its back is sufficient (fig. 8). The Sinker Springs will then snap the Sinker into its non-working position.

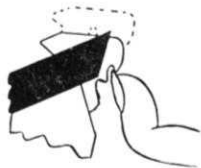


Fig. 6

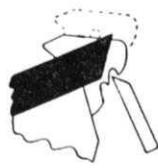


Fig. 7



Fig. 8

## THE WOOL FEED

The wool is fed from loose balls, in which the wool runs from the centre so that they will not roll around. If you do not get the wool from your local shop in suitable balls, you may wind these yourself with the aid of a wool winder, with which your dealer can supply you.

The Cam Box must be on the right hand side of the machine before the wool feed is threaded.

As is shown in fig. 9, the thread is inserted from above between the two Braking Disks. Then the thread is guided through the eye of the span wire (allowing the thread to move freely underneath the top wire guide) and the loose end wound around the left-hand Casting-on Eyelet. Finally, the tensioned thread is inserted into the Thread Guide, as shown in fig. 10.

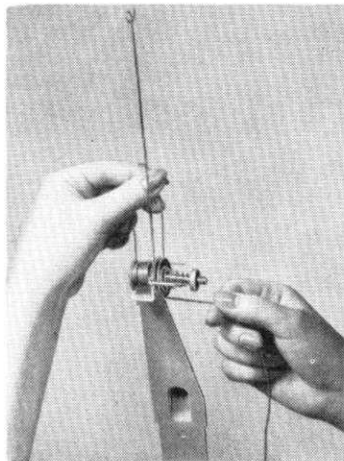


Fig. 9

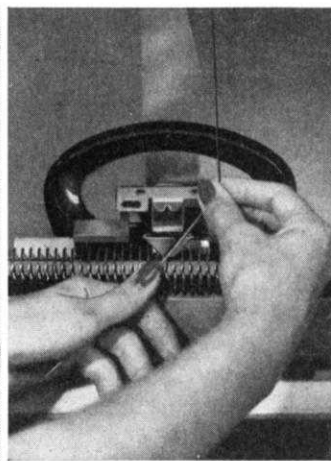


Fig. 10

## CASTING-ON

For casting-on, the needles required are pushed forward with a ruler until the Needle feet exactly between the two lines marked on the Needle Bed. Then the thread is laid from below around

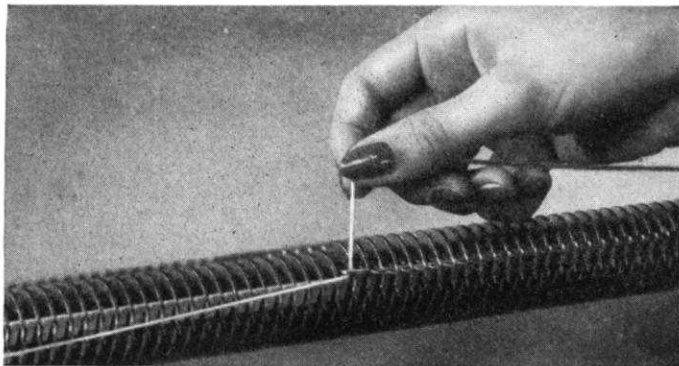


Fig. 11

the Shaft of the first needle on the left-hand end of the bed (fig. 11) and is wound anticlockwise around each successive Upper Sinker Hook and needle towards the right, as is shown in fig. 12.

The wool should be cast on fairly loosely (see also fig. 13). The wool must not be pulled so tightly as to raise the Sinkers above their normal working position.

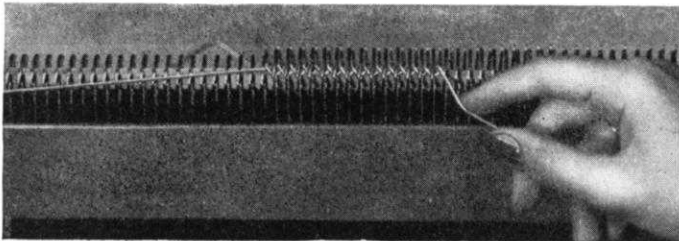


Fig. 12

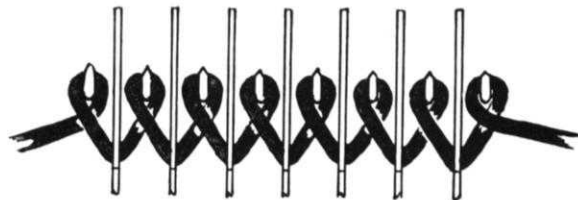


Fig. 13

Now make sure that:

(1) The Lower Sinker Hooks are free. (2) The cast on loops are on the needle shafts behind the open Latches, (3) all Latches are open,, (4) the needles are exactly aligned, their feet lying exactly between the lines marked on the bed.

## KNITTING

The Automatic Wool Feed enables the knitting to be effected simply by the operator moving the Cam Box smoothly from right to left over the cast-on needles.

The knitting is continued by simply moving the Cam Box back and forth. Each movement will form a complete row of stitches.

Care must be taken to move the Cam Box beyond the working range until a final click can distinctly be heard from the Cam Box. This is essential to ensure the satisfactory knitting of the next row.

If you have returned the Cam Box too soon, it can be moved back to its original position after the Hose Levers have both been set to "R" position, Then set them immediately back to "N", retension the thread, if required, and continue to knit.

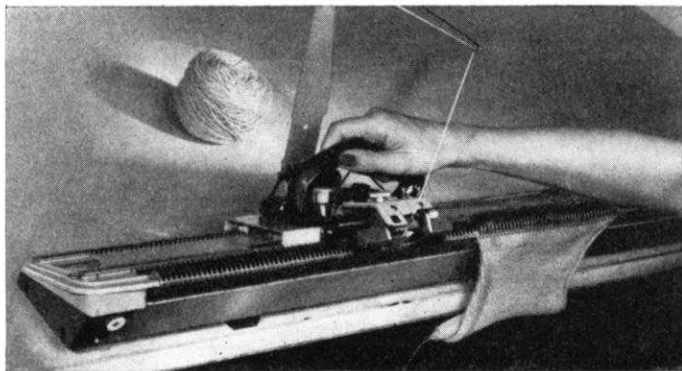


Fig. 14

Should it be very hard to move the Cam Box across the needles it is an indication that the Tension Regulator is set for too tight a tension and it should be moved to a higher number.

After you have knitted several rows you may remove the knitting from the needles at any time by moving the Cam Box across the needles WITHOUT inserting the thread. Either remove the wool from the Thread Guide, or break off the wool. The knitting can easily be unravelled.

Please, practise the casting on and the basic knitting process very thoroughly.

These exercises are extremely important because the understanding of everything that follows is based upon them.

Therefore it is advisable to become familiar during the very early exercises with the method with which the stitches are formed, together with the functioning of each part, particularly the Latch Needles.

## SOME IMPORTANT METHODS OF SHAPING

### INCREASING ONE STITCH



Fig. 15 Increasing on the left (clockwise)

Increasing is possible only on that side the knitting where the wool and the Cam Box happen to be. It is simply effected by moving the Sinker which is adjacent to the working range and the next following needle into working position and continuing to knit as usual.

### INCREASING SEVERAL STITCHES

Increasing several stitches at once is also possible only on that side of the knitting where the wool and Cam Box are. Wind the wool around each of the required number of new Sinkers and Needles, exactly as when casting-on (fig. 15 and 16). The necessary number of Needles and the corresponding Sinkers must, of course, be moved to their working position for this purpose (see page 11).

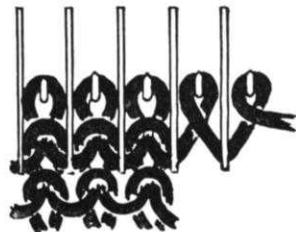


Fig. 16 Increasing on the right (anticlockwise)

## THE USE OF THE STITCH TRANSFER TOOL

For various operations and pattern stitches it is necessary to move stitches from one Latch Needle to another. This is easily done with one of the Stitch Transfer Tools, as follows:

Engage the eye of the Stitch Transfer Tool into the Needle Hook (see fig. 17). Then pull the Latch Needle toward you with the aid of the Stitch Transfer Tool so that the stitch slides behind the Latch of the Needle and lies on the needle shaft (fig. 18).

Then the Latch Needle is pushed back with the aid of the Stitch Transfer Tool. This causes the stitch to slide on to the Tool (see fig. 19). The eye of the Stitch Transfer Tool is now transferred to the Hook of the next needle (see fig. 20) and the Tool is swung up to lever the stitch into the head of this needle.

The needle which has thus been freed is moved into its non-working position if this is necessary (see page 10, fig. 5).

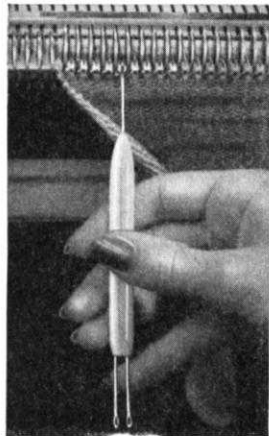


Fig. 17

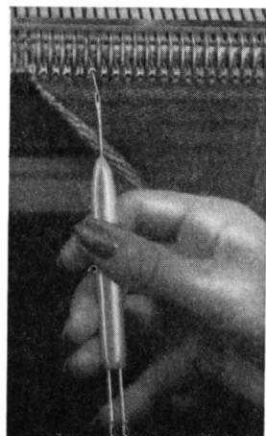


Fig. 18

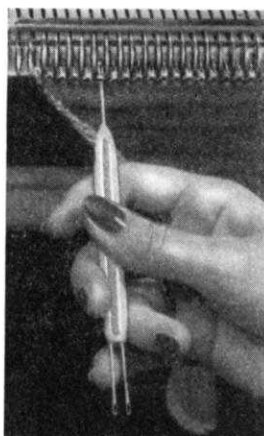


Fig. 19



Fig. 20

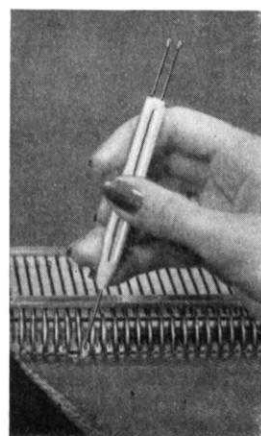


Fig. 21

## DECREASING ONE STITCH

Decreasing only one stitch may be effected at both ends of the same row, regardless of the position of the wool. With the aid of the Stitch Transfer Tool (see instructions at left) the end stitch is removed and placed onto the adjacent needle. The needle which is now empty and its respective Sinkers are moved to their non-working positions.

## DECREASING SEVERAL STITCHES AND CASTING OFF

Decreasing several stitches is possible only on the side where the wool and Cam Box are.

Take hold of the foot of the end needle and push it forward until the stitch slides behind the Latch. Lay the wool from above into the needle head (fig. 22) and push the Latch Needle back to form a new stitch.

Transfer this new stitch on to the adjacent needle with the aid of the Stitch Transfer Tool (see instructions at left).



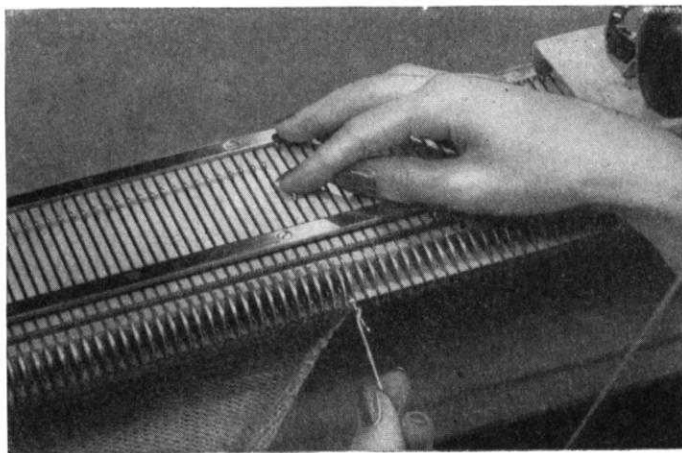


Fig. 22

This needle, which now carries two stitches, is then pushed forward as described above and the entire operation is repeated.

The needles which have become empty, and their respective Sinkers, should be moved into their non-working positions, bearing in mind that the Sinker Hooks can be rendered entirely inoperative only when they have been freed of the knitting.

## CASTING OFF

Casting off is achieved by continuing the process of decreasing several stitches, and, once again, is possible only from the same side of the machine as the wool and Cam Box.

It is also possible to remove the knitting from the machine simply with open stitches. To achieve this, the wool removed from the Thread Guide and the Cam Box is moved across the working range without the wool being inserted. These stitches may then be subsequently placed onto a knitting needle and cast off.

## THE KNITTING OF NECK OPENINGS

Vertical slits, wide and narrow V-necks, etc. are formed by dividing the knitting after a certain row and knitting the several parts (e. g. the two shoulders of a pullover) successively.

### The vertical slit:

In the row which the slit is to begin, the needles of that half of the working range which is opposite to the Cam Box are brought forward into the holding position and their respective Sinkers are moved to the non-working position. You must free the Sinkers entirely from the knitting and snap them by thumb pressure into their lowermost position (see fig. 8 on page 11).

**Important:** A thorough check is required to see that the Sinkers are in fact inoperative and aligned because the Sinker Shuttle could be damaged by striking an improperly positioned Sinker.

Now the knitting of one half can be completed and the wool broken off. Before the wool is re-joined and the knitting of the other half is continued, the needles which are in the holding position must be pushed back into the intermediate position (see fig. 5, p. 10) and the Sinkers must again be engaged into the stitches. All other needles and Sinkers must be in the non-working position.

### The V-neck:

Split the work in the same manner as for the vertical opening. Then decrease on each side of the division by one stitch every second to sixth row, depending on the opening desired.

### The round neck:

Split the work in the same manner as for the vertical opening. Then, depending on the shape of the round neck, decrease on each side of the division first by several, then by fewer stitches in each row. For instance the number of stitches decreased in each successive pair of rows could be 4, 2, 1, 1, 0, 1, 0, 1, 0, 1, etc.

## THE KNITTING OF BUTTON HOLES

### Vertical button holes

Use the same method as when making a vertical opening (see page 15). When the button hole is the desired length it is closed by knitting across the entire width. At this time all needles and Sinks of the working range must again be in the working position.

### Horizontal button holes

At the point where a button hole is desired cast-off the necessary number of stitches with an auxiliary piece of yarn and the Stitch Transfer Tool. Then cast on again, using the same auxiliary yarn, and going in the opposite direction. By hand move each of the Latch Needles on which you newly cast on first forward and then back into the working position to get the stitches behind the Latches. Let the rest of the auxiliary yarn which will later be used to finish off the button hole, simply hang down, and knit with the regular yarn across the entire row.

## KNITTING OF POCKETS

Pocket openings are knitted in any desired size in the same way as vertical and horizontal button holes, respectively.

## JOINING IN NEW WOOL

The knitting can be continued with another ball of wool at any time, although it is desirable that where this is to be done, the new wool should be introduced at the beginning of a row, to avoid knotting. When changing colours frequently, it is not necessary to break off the wool each time a new colour is introduced. The wool is changed as described in the section on the automatic Wool Feed (page 11) and is left on the knitting after the change has been effected.

In the case of a change in colour, it is recommended that you leave the main colour wool in the Wool Feed and remove it only from the Thread Guide, winding the end around the nearest Casting-on Eyelet until it is needed again. The contrasting colour is then inserted into the Thread Guide and is tensioned by hand during the Cam Box movement. The main colour wool should be retensioned when it is replaced in the Thread Guide.

## REVERSING STITCHES

In case it should be necessary during pattern work or in the correcting of a mistake to pick up stitches it is best to use the Latch Needle Tool.

To pick up **purled** stitches when the Plain Side of the work faces you, apply the Latch Needle Tool from behind the knitting (see fig. 23).

To pick up **knitted** stitches when the Plain Side of the work faces you, use the Latch Needle Tool from the front of the knitting (see fig. 24).

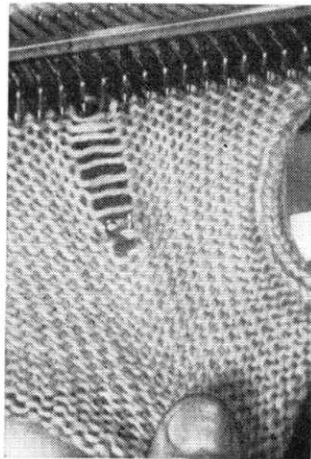


Fig. 23

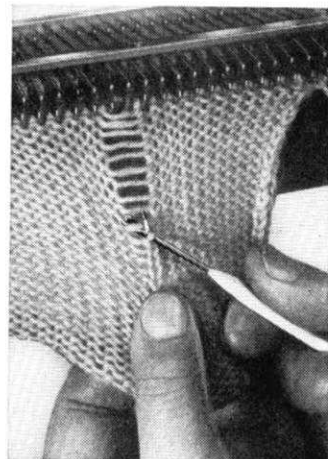


Fig. 24

When the REGINA-Princess-AUTOMATIC hand knitting machine has been expanded by the provision of the second Needle Bed it is no longer necessary to pick up stitches as has been described above in the making of patterns.

For this reason all single bed patterns discussed on pages 18 to 21 and involving a reversion of stitches can be knitted on the REGINA-Princess-UNIVERSAL hand knitting machine without additional picking up.

## UNRAVELLING WITHOUT REMOVING THE WORK FROM THE MACHINE

Should it be necessary to unravel just a few rows it is not necessary to remove the knitting, unravel the rows and then hang the knitting back on the machine, but it is recommended to proceed as follows:

Take hold of the wool and, pulling slightly, move it alternately up and down between the Sinkers. This will lift the stitches from the previous row up onto the needles, thus allowing the top row of stitches to be unravelled.

## HEMMING

### Ordinary hems

Cast on and knit twice the depth of the hem. Next fold the hem up and with the pointed end of the Crochet Hook place each cast-on loop onto the Latch Needle directly above it. Then raise the Sinkers and push the loops under the Sinker Hooks and carefully knit the first row together.

### The picot edge

First knit the single depth of the hem. Working from the right, place every second stitch, with the aid of the Stitch Transfer Tool, onto the next needle on the left (see page 14). Check that all needles are in proper working position and continue to knit until twice the depth of the hem has been reached. Then pick up the cast-on loops as has been described above for the ordinary hem and knit them in (see above).

## THE KNITTING OF DARTS

Darts can be knitted using the same shaping principle as for sock heels, but the shaping is carried out at one side of the fabric only. Care must also be taken to move the Sinkers **entirely** into the non-working position to avoid damage to the Sinker Shuttle by striking a Sinker which is out of place. To avoid holes at the point of turning, the wool is wound from below once around the last needle that has been moved into the holding position, next to those still in working position.

## TURNING THE HEEL OF A SOCK

To simplify the explanation it is assumed that the Cam Box is on the left at the beginning of the knitting of the heel proper.

Bring the last needle at the right-hand end of the working range forward into the holding position and put the next Sinker on the left of this needle entirely out of operation (remove all wool from the Sinker Hook and snap the Sinker back to its lowest position by finger pressure). Knit the row and place the wool under the needle in the holding position. Repeat this operation at the extreme left of the knitting range and knit the second row.

Now move the second needle from the right forward into the holding position and put its Sinker out of operation. Knit the row, and place the wool under the needle on the left which was last brought into holding position.

Before each movement of the Cam Box the last needle on the opposite side is brought from working position into holding position and the adjoining Sinker is put entirely out of operation. After each movement of the Cam Box the wool is placed below the innermost of the Needles which are in holding position, next to those which are still in working position.

As a result, the knitting range is reduced by one stitch per movement of the Cam Box so that shorter rows are obtained, which form the curvature of the heel. Depending on the desired depth and shape of the heel it is possible to decrease two stitches at a time. This will depend on the thickness of the wool and on the size of the stitches.

When the width has been reduced to about one third of the original working range the needles in holding position and their Sinkers are gradually returned to working position in the same sequence. Care should be taken that the wool is placed, in each row, below that needle in holding position which is next to the working range, on the same side as the Cam Box. The heel will be completed when all needles are back in working position.

## THE KNITTING OF SOCK TOES

In this case and for all similar types of shaping, the same method is adopted as with heels. Because sock toes usually have steeper borders it may be necessary to knit two rows between decreasing operations. Take care to increase the rows at the same intervals as those at which they have been decreased.

# THE KNITTING OF PATTERN STITCHES

There are many ways in which the basic stitch of your REGINA-Princess-AUTOMATIC can be varied.

It is impossible to describe here all the stitches and possibilities but the following explanation of the principles of making different pattern stitches and the selection of actual stitches described in detail should give you a good idea of the technique of creating new designs. From this it should be easy for you to create new pattern stitches or combine some of those that are described hereafter.

## THE VARIOUS PRINCIPLES BY WHICH PATTERN STITCHES ARE CREATED

- I Change of colour
- II Leaving needles out of work
- III Putting some needles in holding position
- IV Varying the size of the stitch
- V Moving stitches from one needle to another
- VI Reversing stitches
- VII Crossing stitches
- VIII Pulling up stitches from previous rows
- IX Combinations of I to VIII

For easy reference the roman numerals in the above variations will appear in brackets beside the descriptions of the various patterns.

Practise the following stitches thoroughly and try some variations of them as you go along. The test pieces may be unravell'd at any time.

## INSTRUCTIONS FOR VARIOUS PATTERNS

### No. 1. COLOURED STRIPES (I), fig. 25

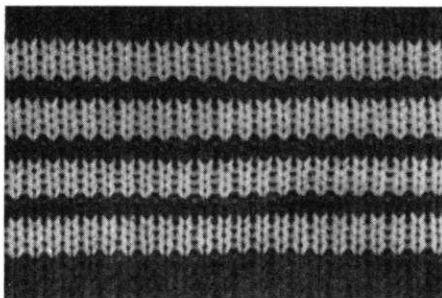


Fig. 25

Knit in main colour (shown by dark thread).

- Fasten contrasting colour (shown by light thread) on casting on eyelet.

Knit 4 rows in contrasting colour.

Knit 2 rows in main colour.

Repeat from ●.

The figure shows a group of 4 stripes in the contrasting colour, after which the knitting is continued in the main colour.

### No. 2. MOCK RIBBED PATTERN (II), fig. 26

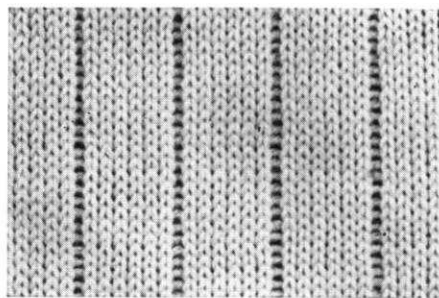


Fig. 26

When casting on leave every seventh needle in the non-working position and at those places carry the yarn under both adjacent Sinker Hooks. Knit the first row very carefully, then continue to knit normally, leaving the needles as they are.

### No. 3. TWEED STITCH (III), fig. 27

- Put needles 2, 4, 6, 8, etc. in holding position.

Knit two rows.

Replace needles in <sup>INTERMEDIATE</sup> working position. Put needles 3, 5, 7, 9, etc. in holding position.

Knit two rows. Repeat from ●.

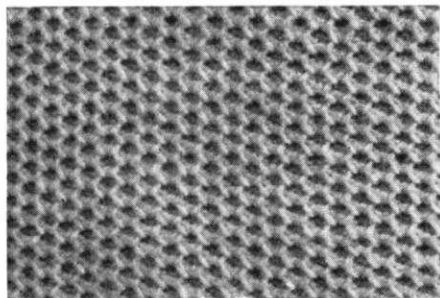


Fig. 27

#### No. 4. STEP PATTERN (IV), fig. 28

Start with the Cam Box on the right.

- Set right-hand Tension Regulator to number 11 and left-hand Tension Regulator to number 10. Knit two rows.
- Set right-hand Tension Regulator to number 9 and left-hand Tension Regulator to number 8. Knit two rows.
- Set right-hand Tension Regulator to number 7 and left-hand Tension Regulator to number 6. Knit two rows.
- Set right-hand Tension Regulator to number 5 and left-hand Tension Regulator to number 4. Knit two rows.
- Repeat from ●.

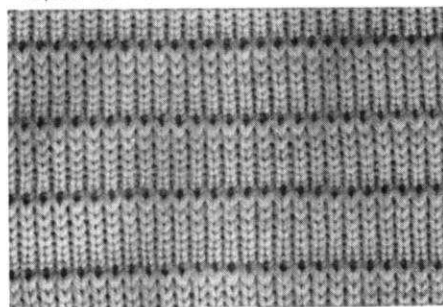


Fig. 28

#### No. 5. LACE PATTERN (V), fig. 29

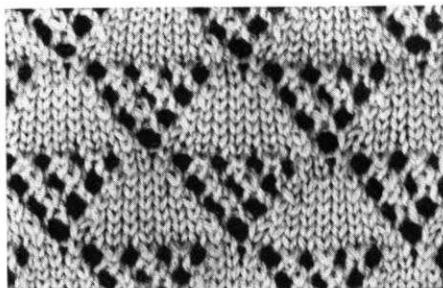


Fig. 29

Each of the stitches listed on the chart is transferred, with the aid of the Transfer Tool, to the next needle on the right. (See photograph above and instructions on p. 14.)

- Hang stitches 10, 20, 30, etc. on the next needle to the right.
- Knit two rows.
- Hang stitches 9, 11, 19, 21, 29, 31, etc. on next needle to the right.
- Knit two rows.
- Hang stitches 8, 10, 12, 18, 20, 22, 28, 30, 32, etc. on the next needle to the right.
- Knit two rows.
- Hang stitches 7, 9, 11, 13, 17, 19, 21, 23, 27, 29, 31, 33, etc. on next needle to the right.
- Knit two rows.
- Hang stitches 15, 25, 35, etc. on next needle to the right.
- Knit two rows.
- Hang stitches 14, 16, 24, 26, 34, 36, etc. on next needle to the right.
- Knit two rows.
- Hang stitches 13, 15, 17, 23, 25, 27, 33, 35, 37, etc. on next needle to the right.
- Knit two rows.
- Hang stitches 12, 14, 16, 18, 22, 24, 26, 28, 32, 34, 36, 38, etc. on next needle to the right.
- Knit two rows.
- Repeat from ●.

#### No. 6. JACK STRAW STITCH (VI), fig. 30

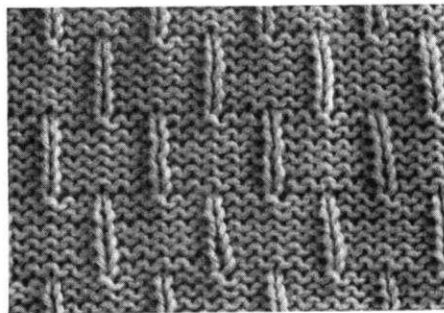


Fig. 30

- Knit six rows.
- Drop stitches 3, 9, 15, 21, etc. in succession, one at a time down six rows and pick them up from the front as described on page 16 and shown in fig. 24.
- Knit six rows.
- One at a time, drop stitches 6, 12, 18, 24, etc., down six rows and pick them up again as knitted stitches.
- Repeat from ●.

#### No. 7. TUCK PATTERN (VIII), fig. 31

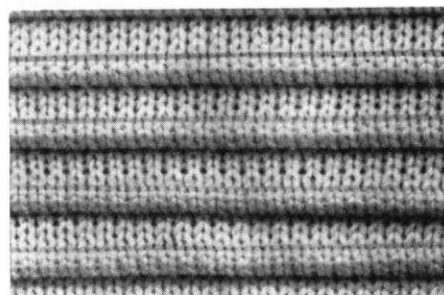


Fig. 31

- Knit 11 rows.

With the pointed end of the Special Crochet Hook pick up each stitch of the fifth from the last row, and hang it on the needle right above it. Bring the loops under the Sinkers and behind the Latches and replace needles in working position.

Repeat from ●.

### No. 8. RAINDROP PATTERN (Combination of II and V), fig. 32

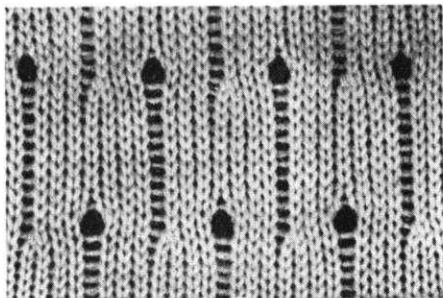


Fig. 32

- Hang stitches 8, 16, 24, 32, etc. on the next needle to the right, and put empty needles into the non-working position. Knit 12 rows. Replace non-working needles into working position.
- Hang stitches 4, 12, 20, 28, etc. on the next needle to the right, and put empty needles into the non-working position. Knit 12 rows. Replace non-working needles into working position. Repeat from ●.

### No. 9. CABLE PATTERN (Combination of II and VII), fig. 33

Leave needles 2, 7, 14, 19, 26, 31, etc. in non-working position when casting on. (See also pattern No. 2, page 18.) Knit 14 rows.

- Place the 5th and 6th, 17th and 18th, 29th and 30th stitches successively on the Double Stitch Transfer Tool.

With the aid of the Crochet Hook pull the 3rd and 4th, 15th and 16th, 27th and 28th, etc. stitches to the right onto the two needles which have become empty.

Then place the two stitches from the Stitch Transfer Tool on the empty needles on the left.

Knit 14 rows. Repeat from ●.

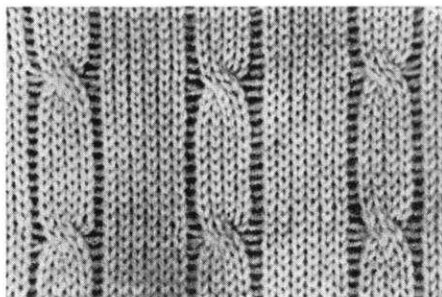


Fig. 33

### No. 10. DOT PATTERN (Combination of I and III), fig. 34

- Knit four rows in main colour. Move needles 2, 3, 4, 6, 7, 8, 10, 11, 12, etc. into holding position.

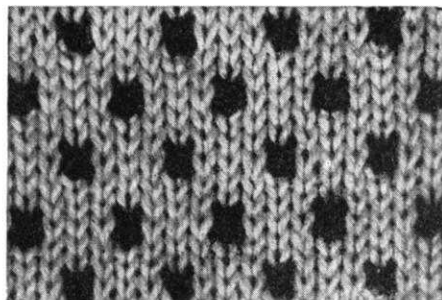


Fig. 34

Knit two rows in contrasting colour. Move needles into working position.

Knit four rows in main colour.

Move needles 4, 5, 6, 8, 9, 10, 12, 13, 14 into holding position.

Knit two rows in contrasting colour.

Move needles into working position.

Repeat from ●.

### No. 11. HONEYCOMB PATTERN (Combination of I and III), fig. 35

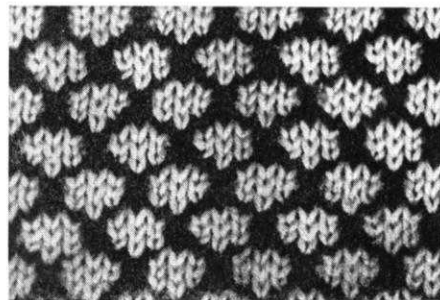


Fig. 35

Knit three rows in main colour (here light colour).

- Knit one row in contrasting colour. Place both Hose Levers in position "R". Return the Cam Box to the side of the main colour. Return the Hose Lever to position "N". Move needles 2, 6, 10, 14, etc. into holding position.

Knit three rows in main colour.

Move needles from holding position to intermediate position.

Knit one row in contrasting colour.

Move needles 4, 8, 12, 16, etc. into holding position.

Knit ~~one~~ <sup>3</sup> rows in main colour.

Move needles from holding position to intermediate position.

Repeat from ●.

## No. 12. NORWEGIAN PATTERN, fig. 36

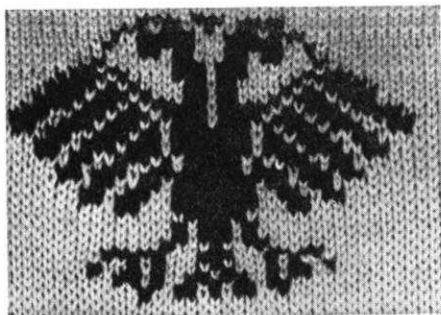


Fig. 36

Work in main colour (here light colour) to the beginning of the chart.

- Move both Hose Levers to position "R".
- Move the needles which will carry the main colour in the first row according to chart to the intermediate position, taking care that the Latches are open.

Knit in main colour, remove wool from Thread Guide and move the Cam Box with Hose Levers still at "R" back across the Needle Bed.

Move the needles which will carry the contrasting colour in the first row according to the chart into intermediate position, taking care that the Latches are open.

Knit in contrasting colour. This completes the first row of the chart.

Repeat from ● in accordance with the chart. After the pattern has been completed, both Hose Levers must be moved back to position "N" before the knitting is continued.

## THE KNITTING OF PATTERNS

is as you may see from the small selection above practically unlimited and very interesting and enjoyable. These patterns should serve you as an introduction and you may now use your own imagination to create many more.

## THE KNITTING OF GARMENTS

with the single bed machine can no longer cause you any trouble if you have studied the foregoing instructions carefully, as these actually represent a full course of instruction in the operation and working potential of your machine.

Some important hints on the knitting of garments to measure have been compiled as a supplement to these instructions on pages 34 to 36.

*We hope that you will derive great pleasure  
from the work which you can now begin.*

If you are the owner of the REGINA-Princess-AUTOMATIC single bed hand knitting machine and begin to make all your knitwear on this machine, you will soon become aware that this work can be carried out much more simply, quickly and effectively than by hand.

Your busy REGINA hand knitting machine will afford a great deal of enjoyment to you and your family because there is no greater pleasure than that of working creatively.

You will soon be entirely familiar with everything relating to machine knitting and will realise that your REGINA-Princess-AUTOMATIC will perform everything which can be done by any single bed hand knitting machine.

If you feel the growing desire to increase this range of knitting work even further or to make an income by knitting, please remember that you may add to your single bed hand knitting machine at any time, and so obtain one of the latest twin bed machines.

For this reason, we suggest that you should study the following pages of this booklet to become aware of the abundance of new and additional possibilities which will be opened up to you when you have the second Needle Bed.

Looking through the following pages, you can anticipate the pleasure you will enjoy with your future REGINA-Princess-UNIVERSAL hand knitting machine!

# GENERAL REMARKS ON THE TWIN BED HAND KNITTING MACHINE

If you are the lucky owner of the complete REGINA-Princess-UNI-VERSAL twin bed hand knitting machine and have followed our advice on page 8, first removing the Front Needle Bed and becoming familiar with knitting on one bed, the study of the following pages will not cause you any difficulty.

## ASSEMBLING THE NEEDLE BEDS

Owners of the single bed machine should assemble the basic machine and the attachment by following the instructions which are supplied with the Guarantee Card which they received with the attachment.

Owners of the twin bed machine, who have dismantled the two halves for practising with the single bed machine, as advised on page 8, can reassemble the Needle Beds as follows: Push the Cam Box of the basic machine to the left-hand side. Move

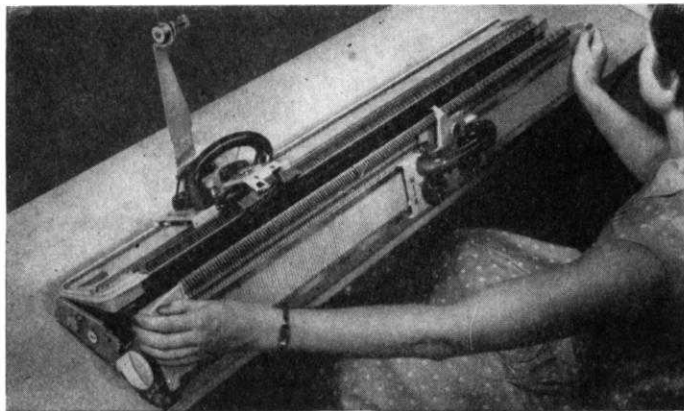


Fig. 37

the Cam Box of the Front Needle Bed to the right-hand side. Insert the Front Hinge Pins of the Front Needle Bed into the corresponding apertures of the two Needle Bed Couplings and swing the Front Needle Bed into those apertures of the Needle Bed Couplings which are provided for the pivotal mounting, as is shown in fig. 37. Then loosen the knurled screw of the Front Cam Box. Lift the Cam Box Coupling and move the two Cam Boxes into register. Now insert the flange of the Cam Box Coupling into the square aperture of the Brush Holder and retighten the knurled screw (fig. 38).



Fig. 38

## THE TWIN BED CAM BOX

When the twin bed machine has been assembled, the rear and front halves of the Cam Box are rigidly connected by the Cam Bot driver but can be separated at any time, by reversing the procedure outlined above.

As is shown by the general view on page 6, 4 Stitch Tension Regulators, 4 Patent Cam Knobs and 4 Hose Levers must be attended to as necessary for different types of work.

The Patent Cam Knobs are always depressed and the Hose Levers in position "N" (normal) unless otherwise stated.



## Explanation of the setting system:

### Example 1

9		9	All Stitch Tension Regulators are in position 9. All Patent Cam Knobs are depressed. All Hose Levers are in position "N" (normal).
9		9	

### Example 2

6		6	The Stitch Tension Regulators of the Back Bed are in position 6. The Stitch Tension Regulators of the front half of the Cam Box are in position 1. All Patent Cam Knobs are depressed. All Hose Levers are in position "N" (normal).
1		1	

### Example 3

4P		1	The left back and right front Stitch Tension Regulators are in position 4, the other two in position 1. The left rear and right front Patent Cam Knobs (white buttons) are raised, the others remain depressed. All Hose Levers are in position "N" (normal).
1		4P	

### Example 4

8		8	All Stitch Tension Regulators are in position 8. All Patent Cam Knobs are depressed. The rear Hose Levers are in position "N". The front Hose Levers are in position "R" (round).
8R		8R	

The following basic rule governs the stitch size adjustment on the twin bed machine:

**If three or more consecutive needles are in working position on one Needle Bed:** Adjust as for the single bed.

**If only pairs of consecutive needles are in operation on one Needle Bed:** Use the mean value between the recommended setting for the single bed and No. 1.

**If only single needles without adjoining needles are working on a Needle Bed:** Adjustment No. 1.

The foregoing information will have given you some idea of the setting principles used for various types of basic knitting and pattern work. It should be borne in mind that these settings are based on an average 3ply botany wool and may be varied proportionally in the light of the knitter's own experience.

## RACKING

The universal application of your REGINA-Princess-UNIVERSAL hand knitting machine is also facilitated by the possibility of displacing the two Needle Beds in relation to each other.

The displacement is effected by the two Racking Switches provided at the centre coupling of the Front Needle Bed (see page 6).

**Three basic positions are provided:**

**Normal position:** The Needle Beds are exactly in register. The Racking Switch points horizontally to the front.

**Displaced position I:** Take hold of both Racking Switches with the hands and turn them upwards by one notch. The Needle Beds are then displaced by half a needle space. This position is used for various modes of casting on.

**Displaced position II:** Take hold of both Racking Switches with the hands and turn them upwards as far as they will go. This position is not used for any basic knitting technique, but only for the so-called "racking" or "zig-zag" patterns, such as No. 27 on page 31.

## THE RELATIVE POSITIONS OF NEEDLES AND SINKERS

**The normal position (both beds in register):**

Care should be taken that two needles which are opposite each other should not be put into working position at the same time.

This does not apply to the basic techniques for circular and U-shaped knitting.

**In displaced position I:**

Care should be taken that Sinkers which are exactly opposite needles in working position should not be in working position.

# THE BASIC KNITTING TECHNIQUES FOR THE TWIN BED HAND KNITTING MACHINE

## Explanation of the casting-on diagrams

In the following description of the basic knitting techniques and in the instructions for the patterns, the needles and Sinkers to be used in casting on are diagrammatically indicated as follows:

B = Back Needle Bed

F = Front Needle Bed

o = Needle temporarily in holding position

. = Needle in working position

| = Sinker in working position

I = Sinker in non-working position

 Needle Beds in normal position  
 Needle Beds in displaced position

## BASIC PATTERN: "KNIT 1, PURL 1"

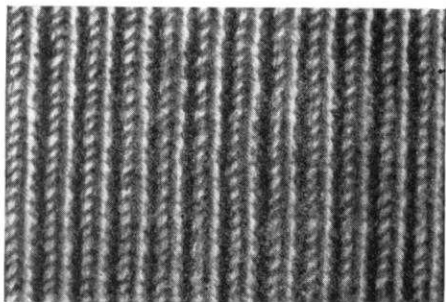
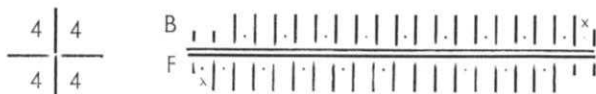


Fig. 39



The Cam Box is on the right-hand side. Bring the Latch Needles and the Sinkers according to the diagram above **with the exception of those Latch Needles that are marked with (x)** into working position.

Thread the wool feed and wind the wool around the Casting-on Eyelet on the right.

When knitting the first row (loop row) care should be taken that the first needle on the right at the back actually takes hold of the thread. When moving the Cam Box the left it is recommended

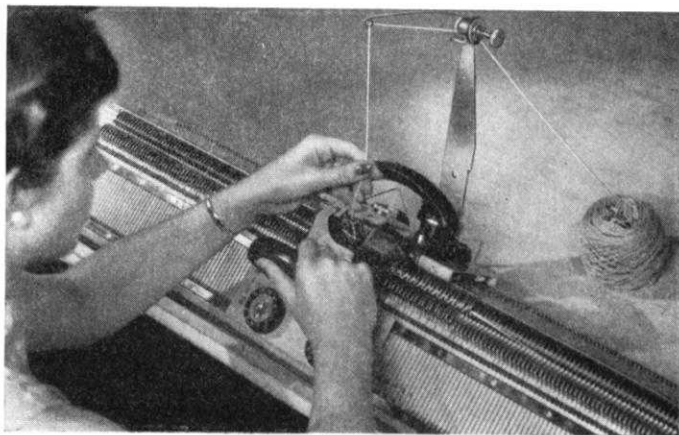


Fig. 40

that you increase the tension on the wool by braking it between thumb and forefinger. This will give a firm edge (see fig. 40). The loop row has now been formed.

Before the Cam Box is returned move the needle on the left of the Front Needle Bed marked by (x) into working position. Now move the Cam Box back to the right side.

Before knitting the next row move the needle on the right of the rear Needle Bed marked by (x) into working position and only after that move the Cam Box to the left side. Next move the left front and right rear Hose Levers to "R" (round knitting) and knit four rows (i. e. two complete turns). Now return all Hose Levers to "N" (normal knitting). The actual k. 1, p. 1, rib row begins. From here continue to knit by moving the Cam Box back and forth.



Fig. 41

### BASIC PATTERN: SINGLE SIDED FISHERMAN'S RIB

Fig. 42

The casting on and the settings are the same as for the knit 1, purl 1 rib. After the loop row, round rows and one ordinary k. 1, P. 1 row have been knitting, the Cam Box is again on the right side.

Now pull up the white Patent Cam Knob of the Front Cam Box and set the left-hand Front Stitch Tension Regulator to number 1. This will give the following scheme:

4	4
1	4P

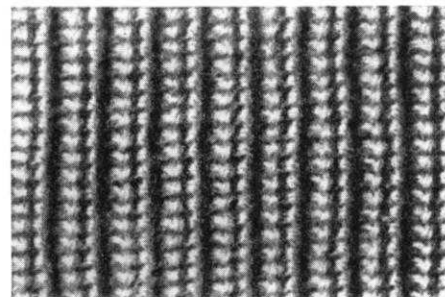


Fig. 42

If the knitting is then continued the raised rib will be automatically obtained on that side of the fabric which faces the Back Needle Bed.

### BASIC PATTERN: DOUBLE SIDED FISHERMAN'S RIB

When knitting double sided Fisherman's Rib, the casting on and the initial settings are exactly as for the knit 1, purl 1 rib.

After the loop row, the round rows and one ordinary k. 1, p. 1 row have been knitted, the Cam Box is again on the right side.

Then pull up both white Patent Cam Knobs and set the left front and right rear Stitch Tension Regulators to number 1. This will give the following scheme:

4P	1
1	4P

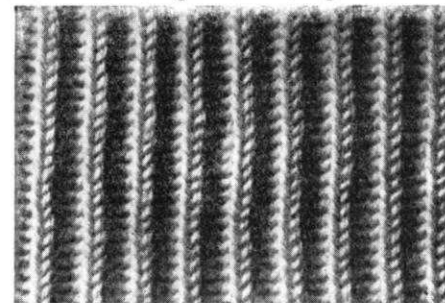


Fig. 43

If the knitting is then continued the rib will be automatically obtained.

The Cam Box may be set for the formation of Fisherman's Rib after any number of rows have been knitted in the knit 1, purl 1 pattern, e. g. after an ordinary ribbed welt has been completed.

## BASIC PATTERN: KNIT 2, PURL 2

Fig. 44

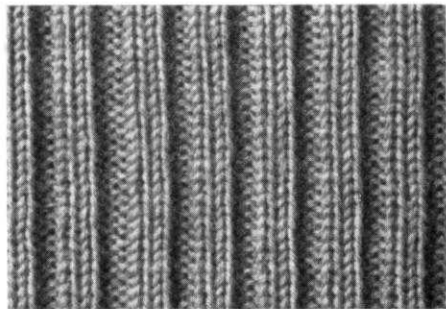
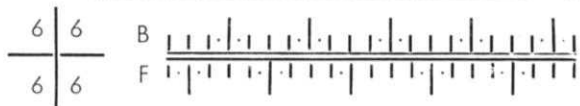


Fig. 44



The Cam Box is on the right side. The Needle Beds are in normal position. Thread the Wool Feed and fix the loose end to the left-hand Casting-on Eyelet. All needles and Sinkers are initially in the non-working position. The thread is now wound anticlockwise around each of the needles and Sinkers from left to right. This operation is similar to casting on on the single bed machine (see page 12).

To facilitate this operation, the required needles and Sinkers are moved into the working position one at a time according to the above casting on scheme, before the wool is wound around them. This is shown in fig. 45.

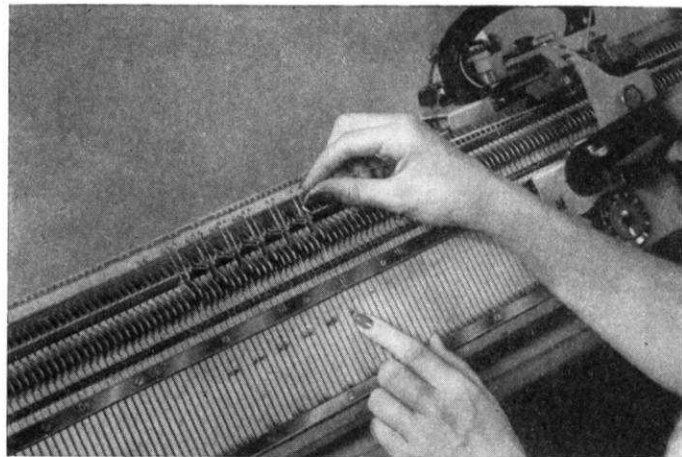


Fig. 45

Care should be taken to see that the knitting range begins in front on the left-hand side and ends at the rear on the right-hand side.

Knitting by moving the Cam Box will then automatically produce the 2 plain, 2 purl rib.

This basic pattern can also be knitted in single sided Fisherman's Rib if the front white Patent Cam Knob is pulled up after the second row. This is shown in the photograph on the right:

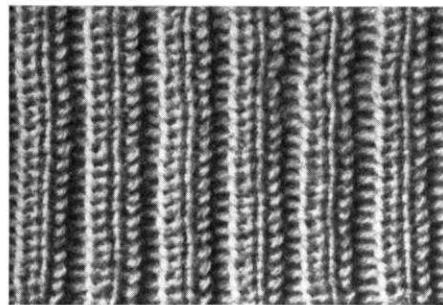
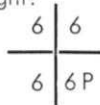
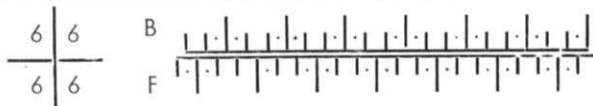


Fig. 46



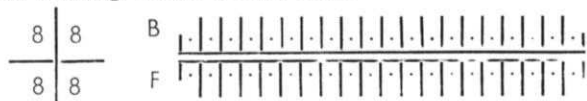
This pattern may be knitted in displaced position I if you wish to accommodate more stitches on the same width, e.g. where very thin wool is used. In this case the needles and Sinkers are moved into working position as follows for casting on:



## CIRCULAR KNITTING

The Hose Levers (see fig. 3 on page 6) are used for circular knitting. Circular knitting is produced by knitting on the two Needle Beds in succession rather than simultaneously. As a result the wool is alternately laid in front and at the rear around the gap between the two Needle Beds and is knitted in a circle.

The Cam Box is on the right side and the Hose Levers are in position "N". Stitch size 8 is used throughout. The end of the wool is wound around the left-hand Casting-on Eyelet and the wool is then cast on to the Front Needle Bed by winding ~~anti~~ clockwise around each needle and Sinker. It is desirable to bring the individual needles and Sinkers into operation only as the wool is being wound around them.



The Cam Box is now moved to the left and the wool is removed from the Wool Feed. The Cam Box is divided by loosening the Knurled Screw and the rear Cam Box is pushed back to the right. Then the wool is cast on the Back Needle Bed by being wound around the needles and Sinkers. ANTI-CLOCKWISE

The wool is again threaded into the Wool Feed and is knitted back. Then the Cam Box is again coupled together. The Cam Box is now again on the left.

Then the actual circular knitting begins. For this purpose the front right and rear left Hose Levers are set to position "R" in raising them before turning them.



When the knitting is continued by moving the Cam Box back and forth, the wool will be automatically knitted clockwise.

When it is desired to work anticlockwise, the setting scheme shown on the right is employed:



Whereas "rows" have always been referred to in these instructions so far (simple Cam Box movement from right to left or from left to right), the term "turn" is employed in connection with circular knitting. A turn is the movement of the Cam Box from left to right and back to the left, i. e. its original position (two rows following each other).

## U-SHAPED KNITTING

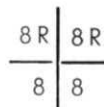
All basic knitting techniques of the single bed machine, and their patterns, can be performed on the twin bed machine in double width, without taking the two Needle Beds apart or placing them end to end.

Cast on as for circular knitting.

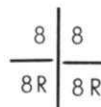
After the wool has been cast on and the Cam Box has been recoupled the latter is on the left.

Set both Hose Levers of the rear Cam Box to position "R" and knit one turn (two rows). Return the Hose Levers to position "N". Set both Hose Levers of the front Cam Box to position "R", knit one turn (two rows) and return the Hose Levers to position "N". The Cam Box is always on the left when the Hose Levers are being shifted.

This is represented by the settings



and



which alternate after each turn (two rows).

# THE KNITTING OF PATTERNS WITH THE TWIN-BED MACHINE

Just as the basic stocking stitch of the REGINA-Princess-AUTO-MATIC single bed hand knitting machine can be employed for producing a large number of patterns, it applies even more to the various basic knitting technique of the REGINA-Princess-UNIVERSAL twin bed knitting machine.

As with the single bed machine it is not possible to describe here the thousands of different patterns that can be produced. The following small selection is intended to induce you to create further patterns by yourself.

## ADDITIONAL PATTERN VARIATIONS

In addition to the basic variations listed on page 18 the lucky owner of both Needle Beds has the following variations at her disposal:

- X Any desired combinations of knitted and purled stitches.
- XI Operation of the Patent Cam Knobs when desired.
- XII Operation of the Hose Levers when desired.
- XIII Operation of the Racking Switches when desired.
- XIV Transfer of stitches from one Needle Bed to the other.
- XV Combinations of I to XIV.

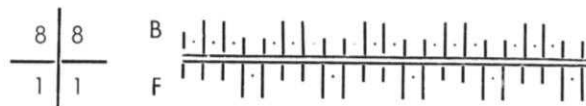
## COMBINATION OF KNITTED AND PURLED STITCHES

The yarn is cast on as for knit 2, purl 2 (i. e. by hand) (page 26). The following patterns are shown for the normal position (both needle beds in exact register) and for the displaced position I (Needle Beds displaced by half a Needle Space).

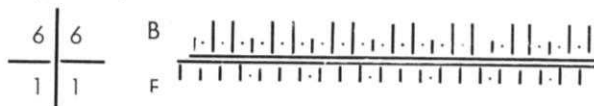
Displaced position I is recommended for thinner wools because it permits the accommodation of more stitches on the same width.

### No. 13. knit 1, purl 3

In normal position:



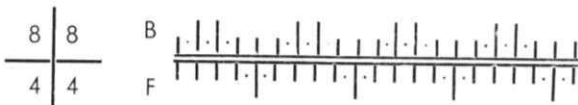
In displaced position I:



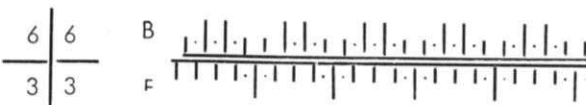
For single sided Fisherman's Rib, pull up the front right Patent Cam Knob.

### No. 14. knit 2, purl 3

In normal position:

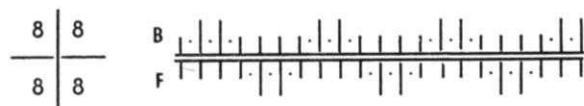
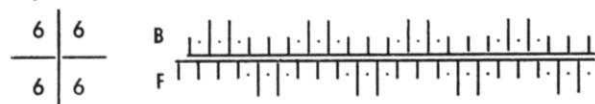
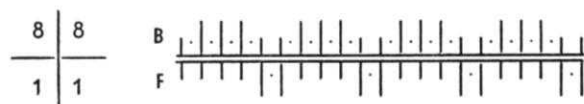
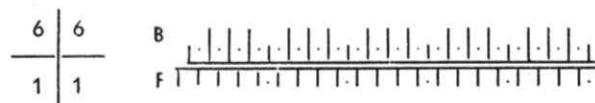


In displaced position I:

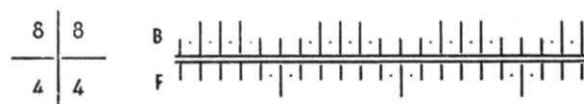


For single sided Fisherman's Rib, pull up the front right Patent Cam Knob.

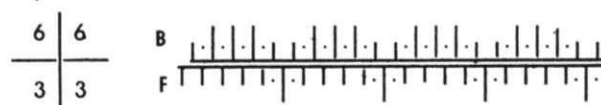
Where no more than two consecutive stitches are in knitting position, the white Patent Cam Knob may also be pulled up to give a different stitch pattern.

**No. 15. Knit 3, Purl 3****In Normal Position:****In Displaced Position I:****No. 16. Knit 1, Purl 4****In Normal Position:****In Displaced Position I:**

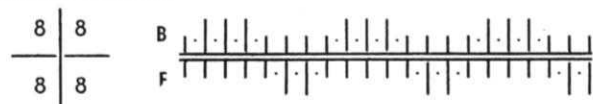
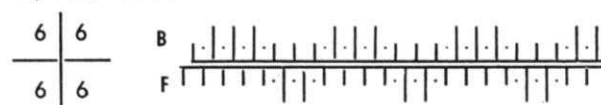
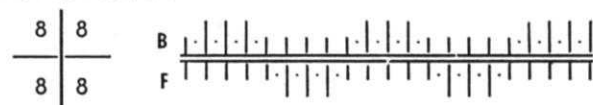
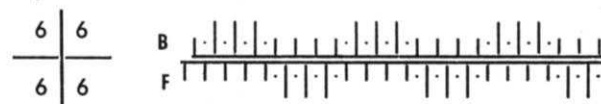
For raised rib on one side pull up the front right Patent Cam Knob

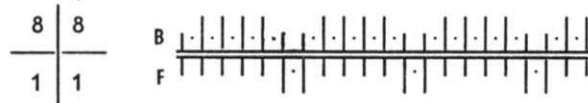
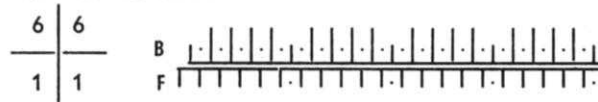
**No. 17. Knit 2, Purl 4****In Normal Position:**

The settings have been chosen for medium wools. This system may be continued as desired.

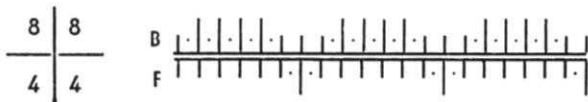
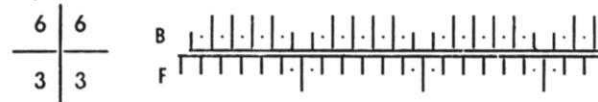
**In Displaced Position I:**

For single sided Fisherman's Rib, pull up the front right Patent Cam Knob.

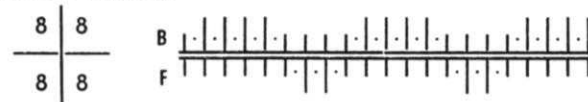
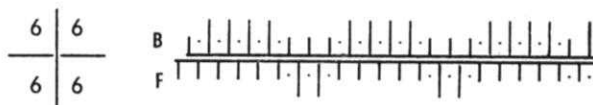
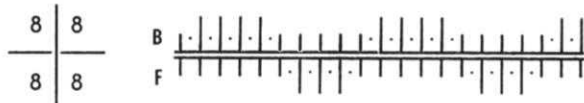
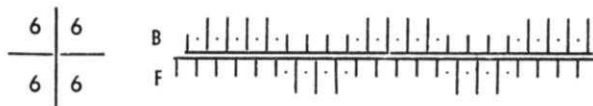
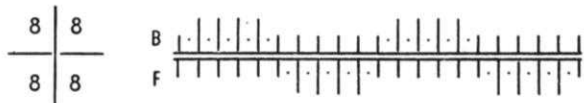
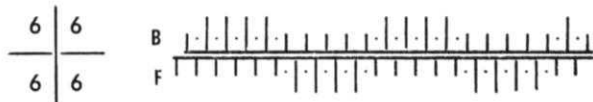
**No. 18. Knit 3, Purl 4****In Normal Position:****In Displaced Position I:****No. 19. Knit 4, Purl 4****In Normal Position:****In Displaced Position I:**

**No. 20. Knit 1, Purl 5****In Normal Position:****In Displaced Position I:**

For single-sided Fisherman's Rib, pull up the front right Patent Cam Knob.

**No. 21. Knit 2, Purl 5****In Normal Position:****In Displaced Position I:**

For single-sided Fisherman's Rib, pull up the right front Patent Cam Knob.

**No. 22. Knit 3, Purl 5****In Normal Position:****In Displaced Position I:****No. 23. Knit 4, Purl 5****In Normal Position:****In Displaced Position I:****No. 24. Knit 5, Purl 5****In Normal Position:****In Displaced Position I:**



## ADDITIONAL PATTERNS

### No. 25. RAISED BLOCK PATTERN (XI), fig. 47

Cast on as for knit 2, purl 2, in normal position or displaced position I (see page 26).

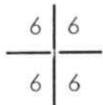


Fig. 47

- Knit 6 rows with the front white Patent Cam Knob pulled up. Knit 2 rows with the Patent Cam Knob depressed. Repeat from ●.

#### Examples of variations:

- Knit 4 rows with the front white Patent Cam Knob pulled up. Knit two rows with the Patent Cam Knob depressed. Repeat from ●.
- Knit 4 rows with the front white Patent Cam Knob pulled up. Knit 4 rows with the Patent Cam Knob depressed. Repeat from ●.

### No. 26. SPORTS PATTERN (XII), fig. 48

Cast on as for knit 1, purl 1 (see page 24).



Knit with the above Cam Box setting.

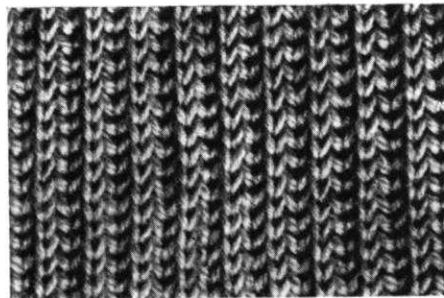
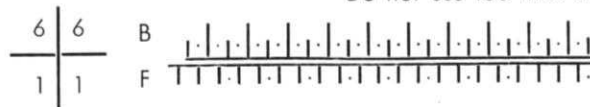


Fig. 48

### No. 27. RACKING PATTERN (XIII), fig. 49

Do not use too thick a wool.



- Knit two rows in displaced position I.

Knit two rows in displaced position II. Repeat from ●.

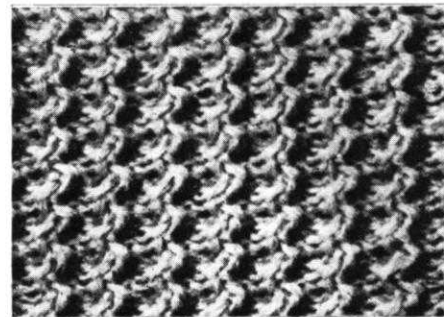


Fig. 49

**No. 28. JACK STRAW STITCH (XIV), fig. 50**

Cast on as for knit 1, purl 5, in normal position (see page 30).

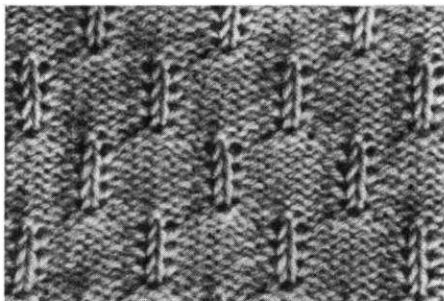


Fig. 50

- Knit 8 rows.

Transfer the stitches of the Front Bed with the aid of the Stitch Transfer Tool to the free needles of the Back Needle Bed. Transfer the centre stitch of each group of five forward onto the Front Bed and place all empty needles into the non-working position.

Repeat from ●.

**No. 29. MINARET PATTERN (Combination of I and X), fig. 51**

Cast on as for knit 1, purl 1 (see page 24).

- Move every alternate needle of those which are in operation on the Front Needle Bed into the holding position.

Knit 4 rows and move the needles back to the working position.

Knit two rows.

Now move the other needles of the Front Needle Bed into the holding position.

Knit 4 rows and move the needles back into the working position.

Knit two rows.

Repeat from ●.

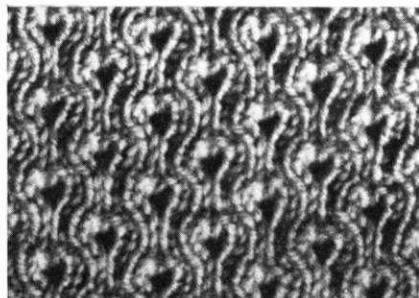
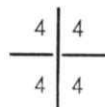


Fig. 51

**No. 30. SCREEN PATTERN (Combination of XI and XII), fig. 52**

Cast on as for knit 1, purl 1 (see page 24).

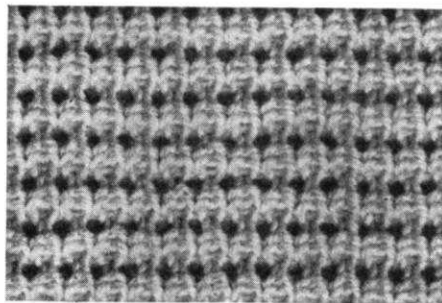
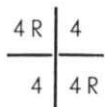
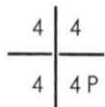


Fig. 52

- Knit 4 rows with the upper Cam Box setting, then depress the Patent Cam Knob.

Knit 2 rows (1 turn) with the lower Cam Box setting, then return the Hose Levers to "N".

Repeat from ●.

# APPENDIX FOR ADVANCED WORKERS

## QUICK METHODS OF CASTING-ON

**Quick method of casting on for stocking stitch on the Single Bed.** Put the required needles and Sinkers into operation and pull the Cam Box across the machine to open the Latches. With the Cam Box on the right, insert the wool and affix it to the Casting-on Eyelet.

Counting from the needle on the extreme left, move every other needle back into the non-working position. Move the Cam Box to the left, braking the wool additionally between the thumb and index finger, as is shown in fig. 40 on page 24. Then return the needles from the non-working position to the working position, open the Latches and continue to knit as usual.

**Quick method of casting on for Circular Knitting and semi-circular open knitting on the twin bed.**

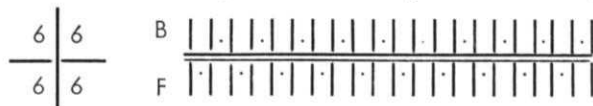
Put the required Needles and Sinkers on the Front Needle Bed into operation and pull the Cam Box across the machine to ensure that the Latches are open. The Cam Box is on the left. Insert the wool and affix it to the Casting-on Eyelet.

Counting from the needle at the right-hand edge, move every other needle to the non-working position. Move the Cam Box from the left to the right, braking the wool additionally between the thumb and index finger, as is shown on fig. 40, page 24. Then return the needles from the non-working position to the working position, taking care that the Latches are open. Return the Cam Box from the right to the left. Then set both Hose Levers of the front Cam Box to position "R". Counting from the needle opposite to the front bed needle on the left-hand edge, move every other needle of the Back Needle Bed to the working position and open the Latches. Set the front Stitch Tension Regulators to position 1. Move the Cam Box from the left to the right, slightly braking the wool. Move the remaining needles, with open Latches, into the working position and return the Cam Box. Return the front Cam Box to the original setting.

When continuing to knit, make sure that you have the correct Cam Box settings, previously described for circular and U-shaped open knitting techniques.

**Quick Method of Casting-on Knit 1, Purl 1 on the Twin-Bed.**

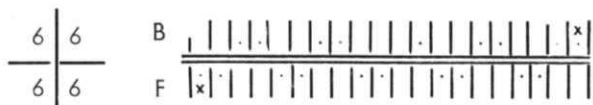
Use a stitch size setting two numbers higher than normal, e. g.



The Cam Box is on the right. Move the needles and Sinkers into working position while the Racking Switch is in normal position. Insert the wool.

Move the Needle Bed to displaced position II. Move the Cam Box from the right to the left. Return the Needle Bed into the normal position. Reduce the stitch size setting by two points and continue to knit as usual.

**Quick Method of Casting-on Knit 2, Purl 2 on the Twin-Bed.**



The Cam Box is on the right. Move the needles (except those marked X) into working position while the Racking Switch is in normal position. Insert the wool.

Move the Needle Bed to displaced position II. Move the Cam Box from the right to the left. Return the Needle Bed to the normal position. Move the front needle on the right-hand edge (X) into working position. Return the Cam Box to the right. Move the rear needle on the right-hand edge (X) into working position and continue to knit as usual.

**We are always grateful for suggestions from our customers. May we ask you to let us know the knacks and tricks which you devise in working with the REGINA-Princess-UNIVERSAL hand knitting machine?**

# GARMENTS MADE TO MEASURE

Knitting on the REGINA-Princess may be done from regular dress pattern and by measurement.

For a well-fitting garment, a well-fitting pattern is naturally essential. It should first be measured and the measurements should be compared with the actual body measurements. Make the necessary adjustments where the fit is not exact.

## THE TEST PIECE

In order to determine the required tension a test piece should be made up as follows:

Cast on about 50 stitches with the wool to be used and work in the pattern stitch to be used with the Stitch Regulator adjusted to the desired stitch size, for approximately 6 inches. Then cast off.

Stretch the test piece in all directions and let it lie for a while so that the stitches assume their natural size. Next determine with a ruler the number of stitches and rows per inch by counting them over a length of 4 inches in the centre of the test piece, and then dividing the result by 4. This will give you the gauge.

Since the test piece may be useful during the work in case changes etc. are made, it should be saved, and the determined gauge should be noted down. (For instance 7 stitches = 1 inch, 8 rows = 1 inch.)

## FIGURING THE KNITTING INSTRUCTIONS

The following example will show how to figure the various details, and it should serve as a good example when knitting from any pattern.

Abbreviations: stitch = st., stitches = sts.,  
Inch = in.

The gauge was found from the test piece to be: 7 sts. = 1 in., 8 Rows = 1 in.

**Figuring the numbers of stitches to cast on**  
One half of the total width is 7 in.

$7 \times 7 = 49$  sts.

Therefore total width:  $49 \times 2 = 98$  sts.

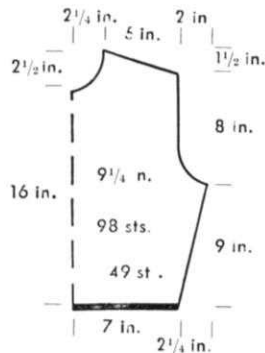


Fig. 53

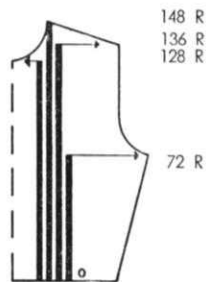
### Figuring the number of rows to be knitted

The armhole starts after 9 in.  
 $9 \text{ in.} = 9 \times 8 = 72$  rows.

The neck opening starts after 16 in.  
 $16 \text{ in.} = 16 \times 8 = 128$  rows.

The shoulders start after 17 in.  
 $17 \text{ in.} = 17 \times 8 = 136$  rows.

The total length is  $18 \frac{1}{2}$  in.  
 $18 \frac{1}{2} \text{ in.} = 18 \frac{1}{2} \times 8 = 148$  rows.



**Results:** Thus after the 72nd, the 128th, the 136th and the 148th rows special operations have to be performed.

Fig. 54

### Figuring diagonal edges

During the first 72 rows there is a uniform increase of  $2\frac{1}{4}$  in.

$$2\frac{1}{4} \text{ in.} = 2\frac{1}{4} \times 7 = 15\frac{3}{4} \text{ sts.}$$

(Choose 16 sts.)

Therefore an increase of 16 sts. has to be distributed uniformly over 72 rows.

$$72 : 16 = 4 \text{ remainder } 8.$$

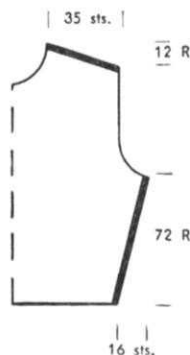


Fig. 55

**Results:** Add one st. every 4th row 16 times, knit the last 8 rows straight.

In the last 12 rows there is a uniform decrease of 5 in.

$$5 \text{ in.} = 5 \times 7 = 35 \text{ sts.}$$

Observe that in 12 rows there are only 6 opportunities (every other row) to decrease. Thus:

$$35 : 6 = 5, \text{ remainder of } 5.$$

**Results:** At armhole edge first decrease 5 sts. every other row 5 times, then  $5+5 = 10$  sts. once.

This little example should help you to develop your own knitting technique with your REGINA hand knitting machine. Study this example carefully and then apply it to another pattern, so that you will get into the habit of carefully planning even your very first garments.

**This little effort will pay for itself in knitted garments that will fit and are knitted fast.** With careful preparation the knitting itself will be extremely enjoyable.

### Figuring curved edges

Starting at the 72nd row the armhole has to be formed by decreasing 2 inches first rapidly, then more gradually.

**Results:** Decrease every other row the following numbers of stitches in the order they are given: 3, 2, 1, 1, 1, 1, 1, 0, 1, 0, 1, 0, 1, 1.

This sub-division of the total decrease of 14 sts. is a matter of experience, and can be used with small variations as a thumb rule.

After the 128th row a decrease of  $2\frac{1}{2}$  in. ending at the 148th row is required. The decrease should approximately result in a quarter circle.

$$2\frac{1}{2} \text{ in.} = 2\frac{1}{2} \times 7 = 17\frac{1}{2} \text{ sts.}$$

(Choose 17 sts.)

This decrease can only be done every other row, i. e. when the yarn is at the neck edge. There is a total of 20 rows, so the decreasing is done in 10 rows. Decrease every other row the following number of sts. in the order they are given: 4, 3, 3, 2, 1, 1, 1, 1, 0, 1.

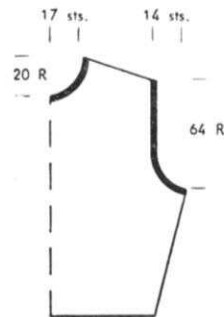


Fig. 56

Rows	Stitches	Result
1	4	4
2	6	$2 \times 3$
1	2	$1 \times 2$
4	4	$4 \times 1$
1	0	0
1	1	$1 \times 1$
10	17	Check

The work can easily be done in tabular form which also can be used as a good check: —

## A FEW HELPFUL HINTS

With careful preparation as described on pages 34 and 35 the knitting itself will be extremely enjoyable. Here are some tips which will help you further.

**The yarn** should unwind easily and freely, and should therefore be wound into a very loose ball. Unnecessary stretching will harm the elasticity of the yarn.

**If you wind the yarn** by hand always wind it over your fingers. When your hand changes position, pull your fingers out of the ball and again wind over your fingers. Thereby you will get a loose ball of yarn.

**The correct type of wool winder** will give you a few seconds a particularly loosely and evenly wound ball of yarn which will unwind from the centre.

**Good Quality Wool** will pay for itself with more beautiful and longer lasting garments, and will be easier on your knitting machine. In the long run good quality wool will prove less expensive than poor wool.

**The casting on** is usually done at the lower edge of the garment. However, it is also possible to start at the top, and work in the reverse direction. This may be particularly useful in children's garments, which can then be easily enlarged at the bottom when necessary.

**Dolman or bat wing sweaters** are started at the beginning of one sleeve, then knitted crosswise across the front or back, and finished up with the other sleeve. The ribbing is added afterwards.

**Garments made on a bias** require particularly accurate instructions, calculations and a slightly larger test piece.

**Skirts** should be made in gores and sewn together; a lining can be put in.

**Children's skirts** can easily be knitted, circularly by using darts (see page 17).

**Border ribs** and other hems should be knitted somewhat tighter than the rest of the garment.

## THE CARE OF KNITTED GARMENTS

It is necessary to take good care of your knitted garments if you wish to enjoy them for a long time.

**Washing:** First dip the garment into cool, clear water, and squeeze it out lightly. Next dip in into lukewarm water with a mild soap. This way the garment will absorb the soapy water more evenly. Never rub the garment or use a brush to remove dirt spots. Rather squeeze and knead the entire garment lightly, then go once more over the particularly dirty spots. Remove the garment quickly from the soapy water and squeeze it out, never wring it out. Rinse it several times, first in lukewarm water, then in cool water, until the water remains clear. In the next to last rinse add a little vinegar to bring out the colours. After the water has been squeezed out of the garment, roll it between dry towels. Then lay it on a clean towel, stretch it into its original size, and let it dry. Never hang it up.

## FINISHING YOUR GARMENT

After casting off, the loose threads should be carefully darned into the garment. The various parts should be stretched according to the pattern. Be careful not to distort the fabric by pulling too much in one direction. Carefully press each part on the wrong side of the garment using a steam iron or a damp cloth. Allow the parts to cool and dry while they are still stretched. Sew the parts together, using the same wool. Press the seams. It is not advisable to sew knitted garments together on a straight stitch sewing machine. Take your time finishing the garment and work with great care — the most beautiful knitting will lose its value if the seams are poor and the collar not fastened properly.

