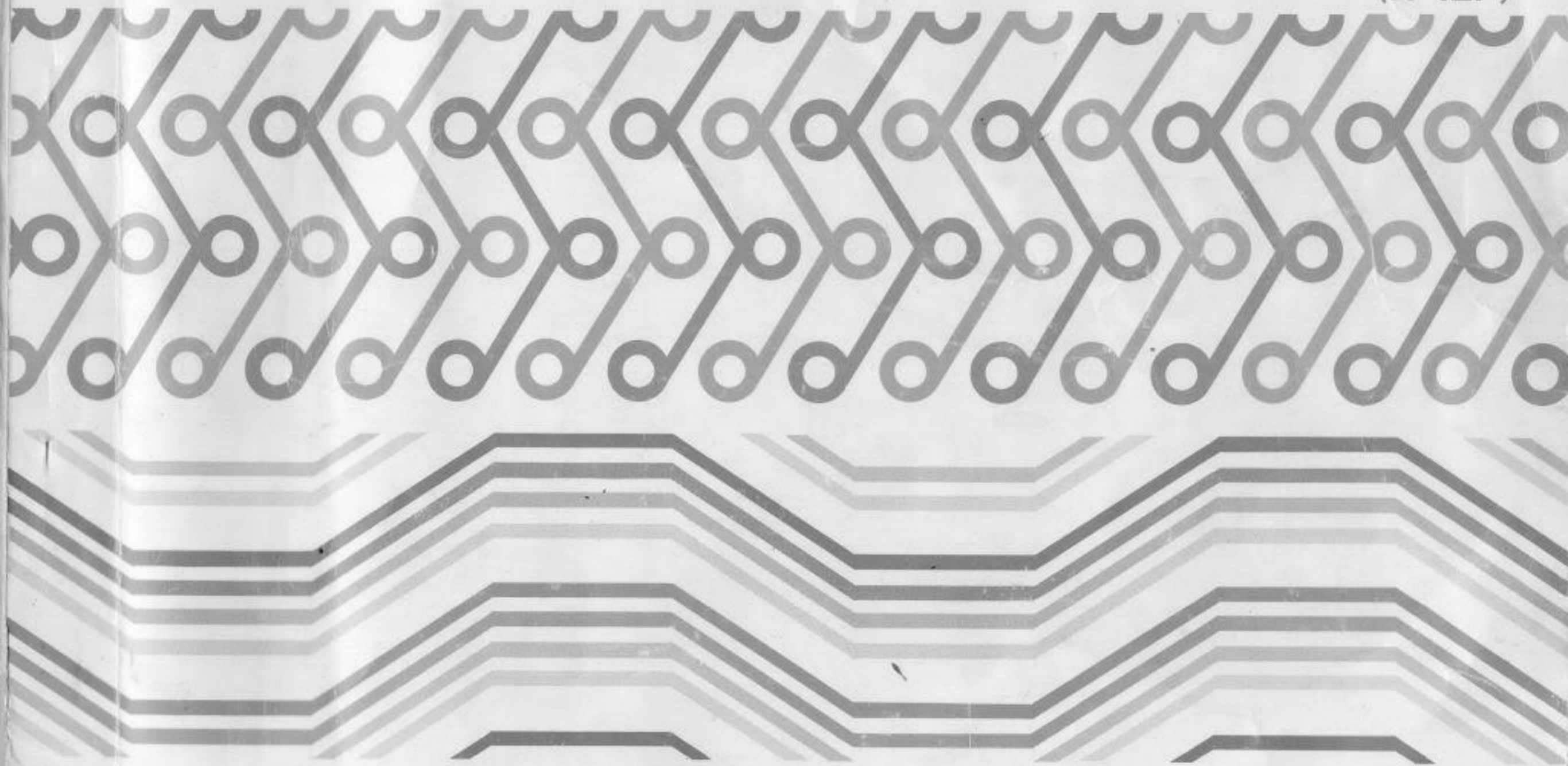


HOUSEHOLD KNITTING MACHINE

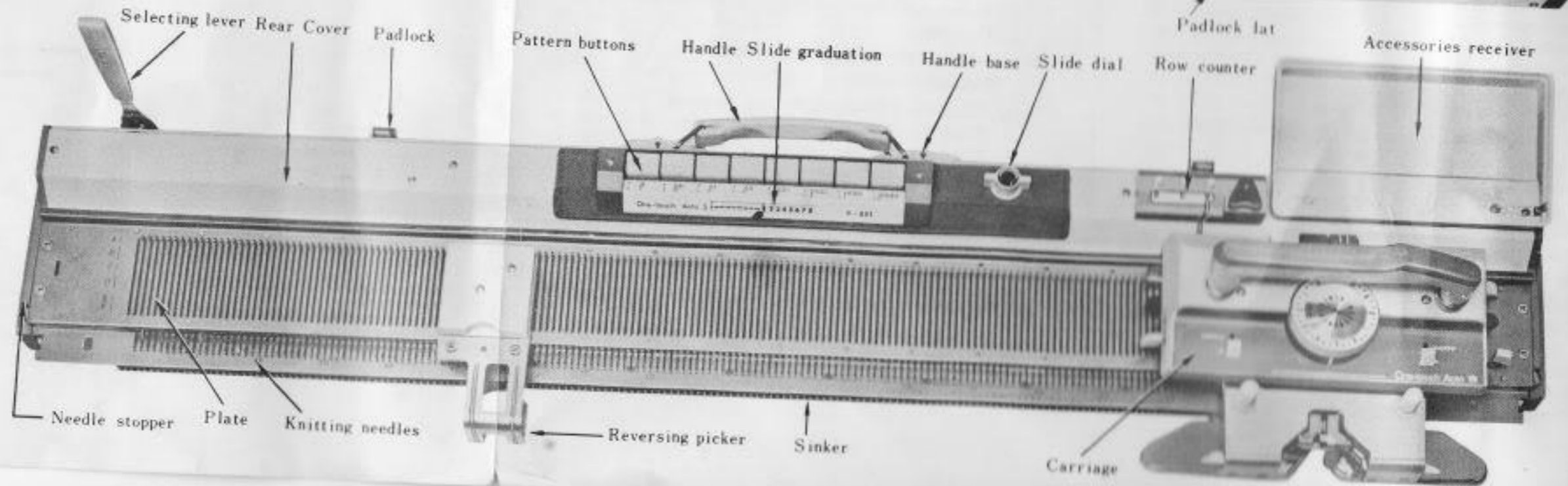
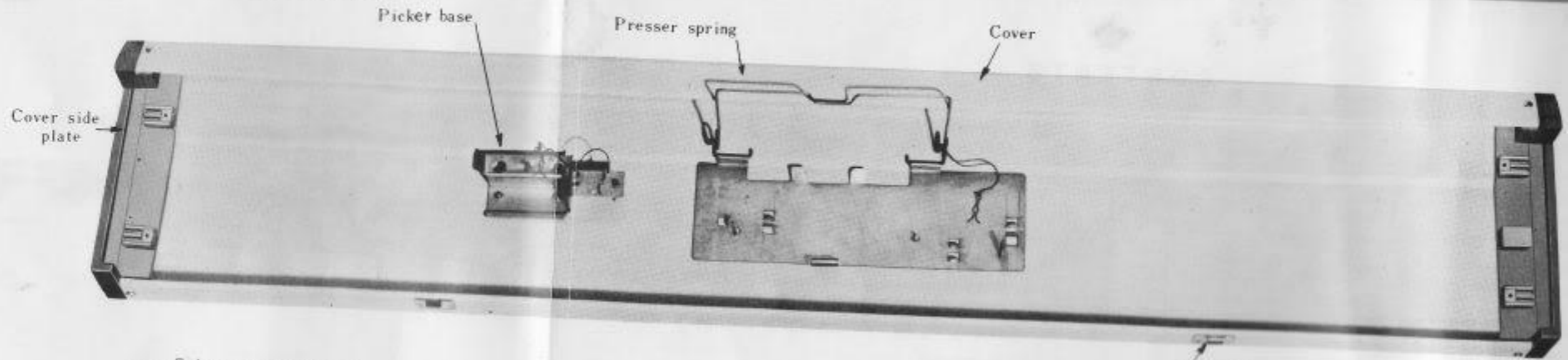
ONE-TOUCH AUTO S

INSTRUCTION BOOK

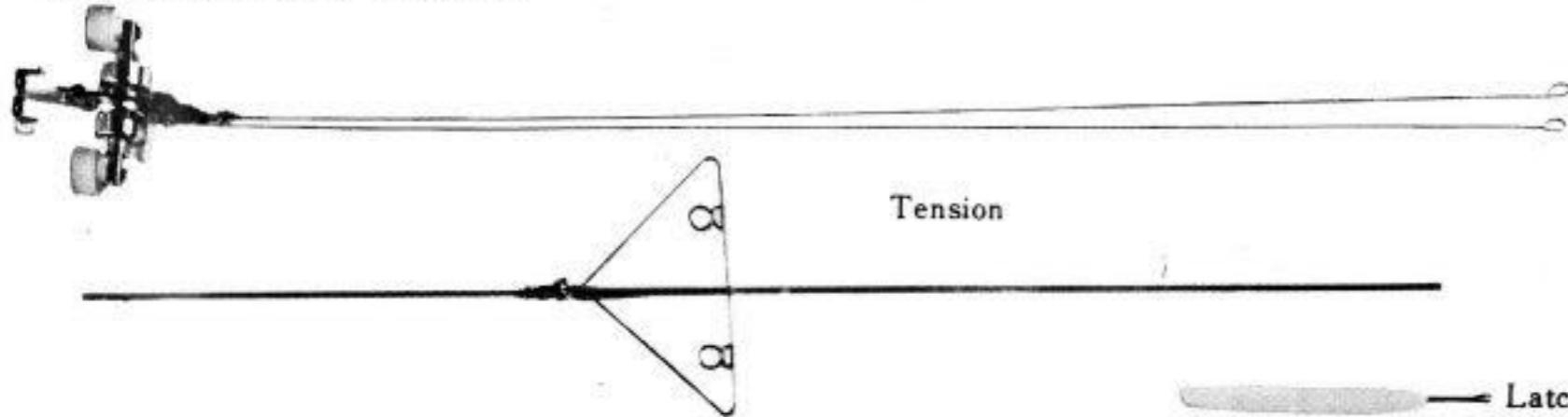
MODEL **K-881**  
(K-12F)



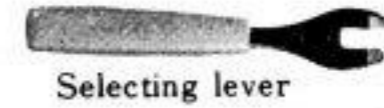
# THE MACHINE BODY



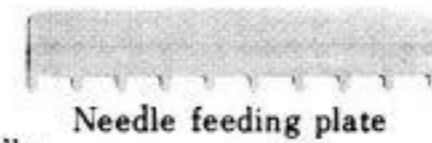
ACCESSORIES PARTS



Tension



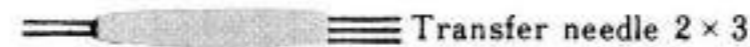
Selecting lever



Needle feeding plate



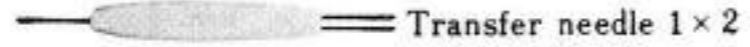
Latch needle



Transfer needle 2 x 3



Transfer needle 1 x 3



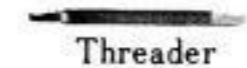
Transfer needle 1 x 2



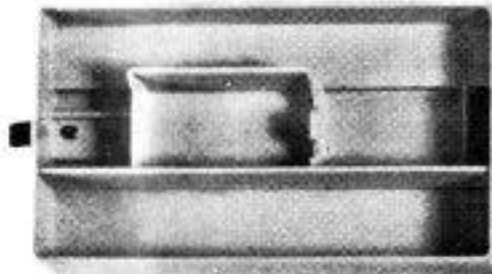
Carriage stop



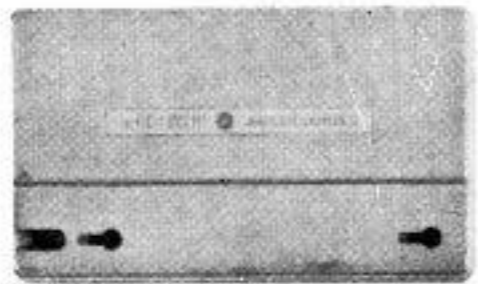
Crochet needle



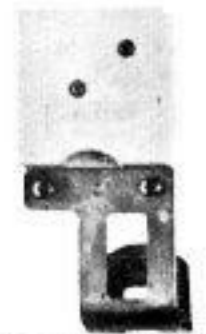
Threader



Accessories box



Accessories box cover



Reversing picker

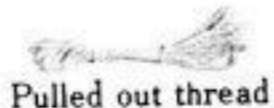


Row counter

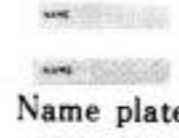
Closing needle



Threader weight



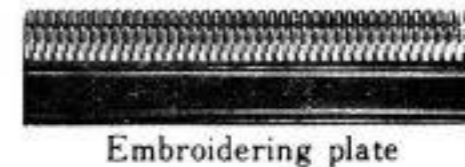
Pulled out thread



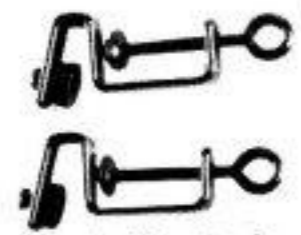
Name plate



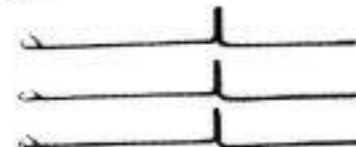
Oiler



Embroidering plate



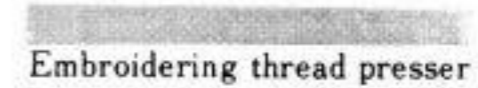
Installing tools



Spare needles



Hand brush



Embroidering thread presser

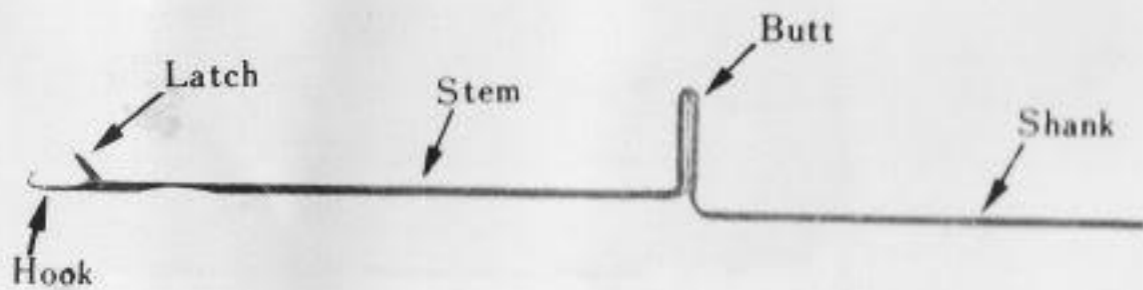
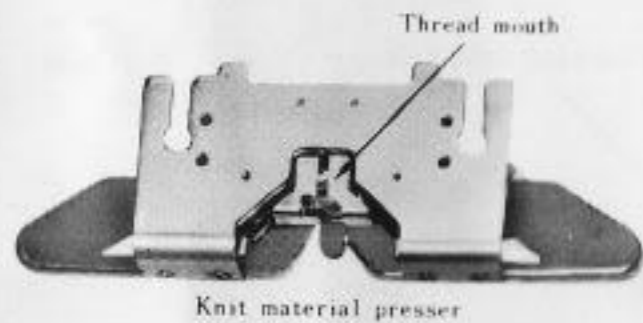
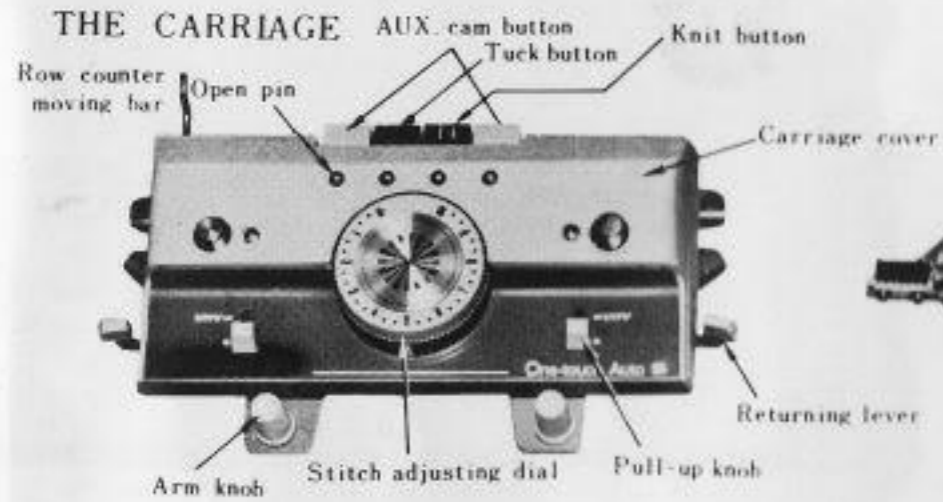


Embroidering thread scissors



Needle stopper puller

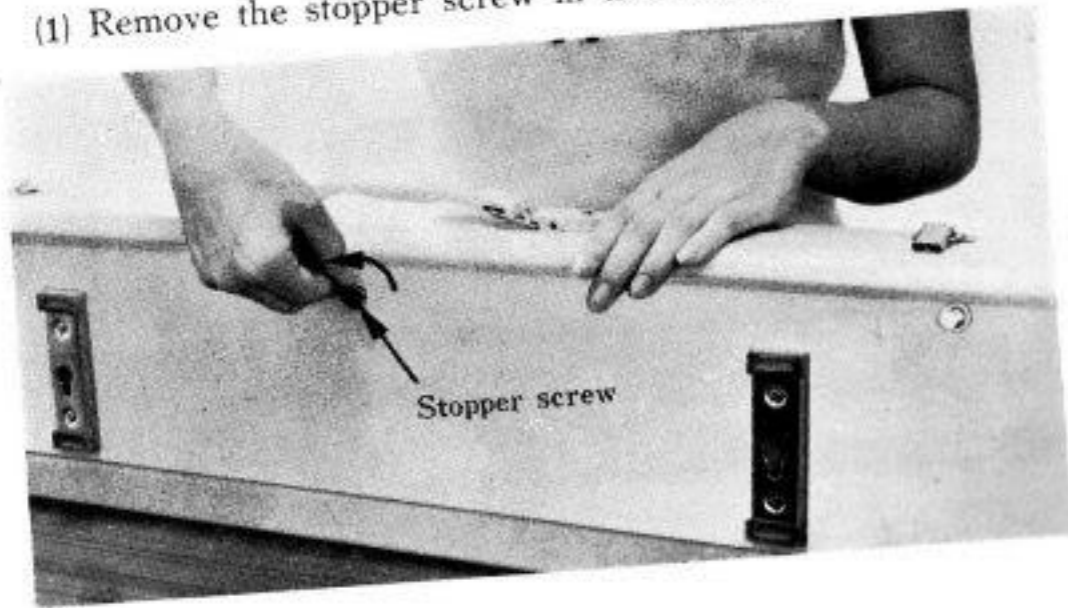
# THE CARRIAGE



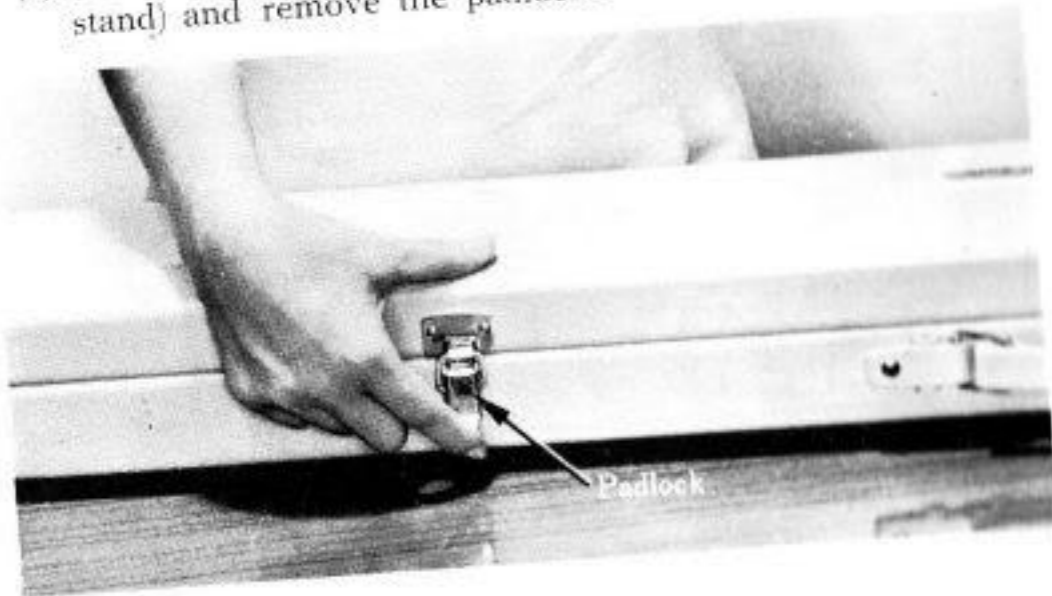


## ❑ I. HOW TO SET UP THE MACHINE

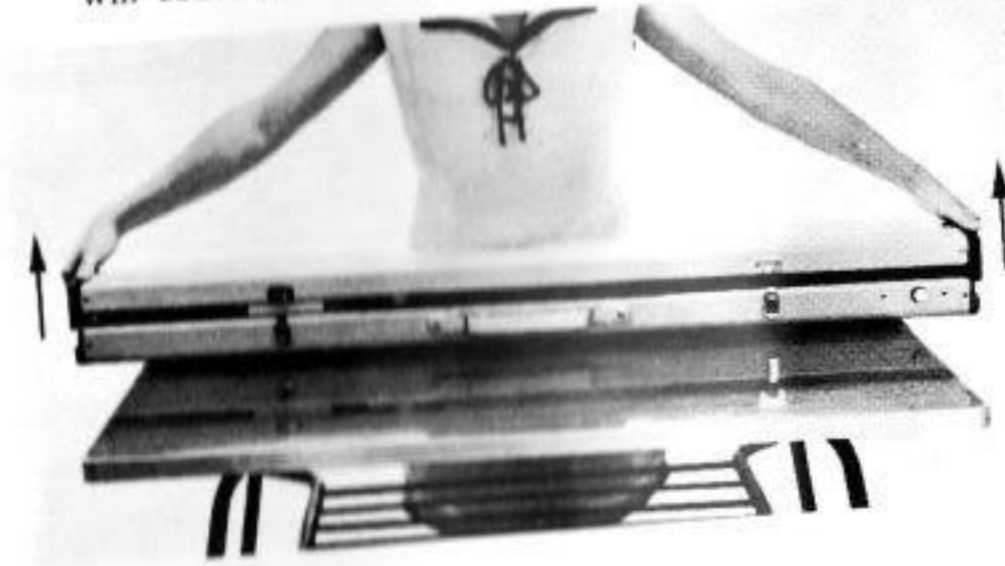
(1) Remove the stopper screw in the rear of the machine.



(2) Put the handle on the opposite side of the table (knitting stand) and remove the padlock.



(3) Lift up the cover lightly and pull it towards you and it will come off.

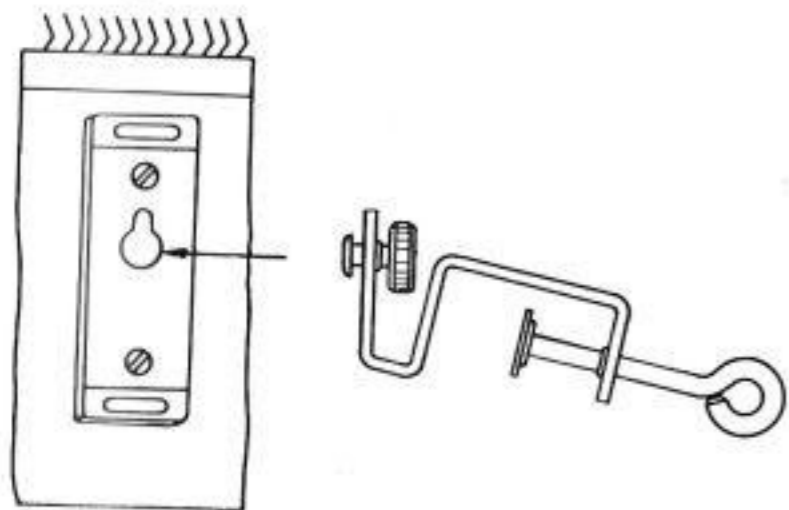


(4) Remove the accessories box.

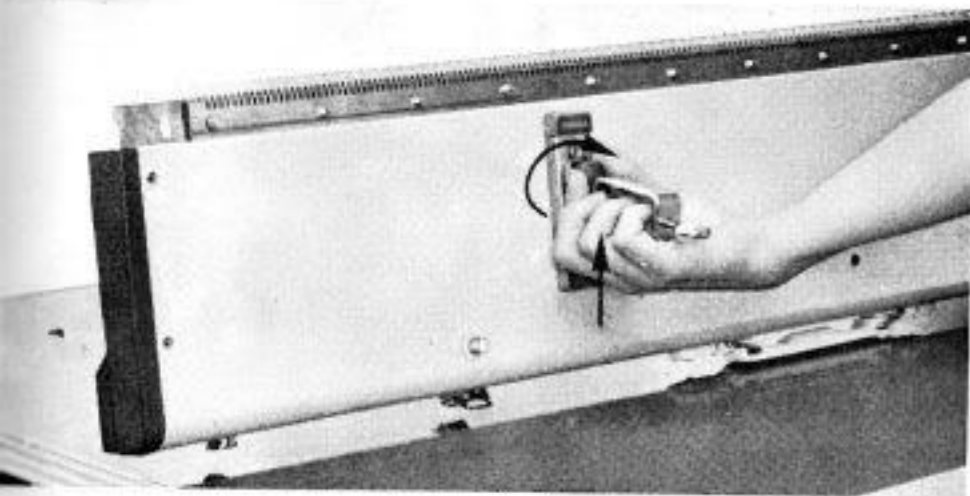


(5) Take out the installing tools from the accessories box and insert tools into the installing hole in the rear of the machine

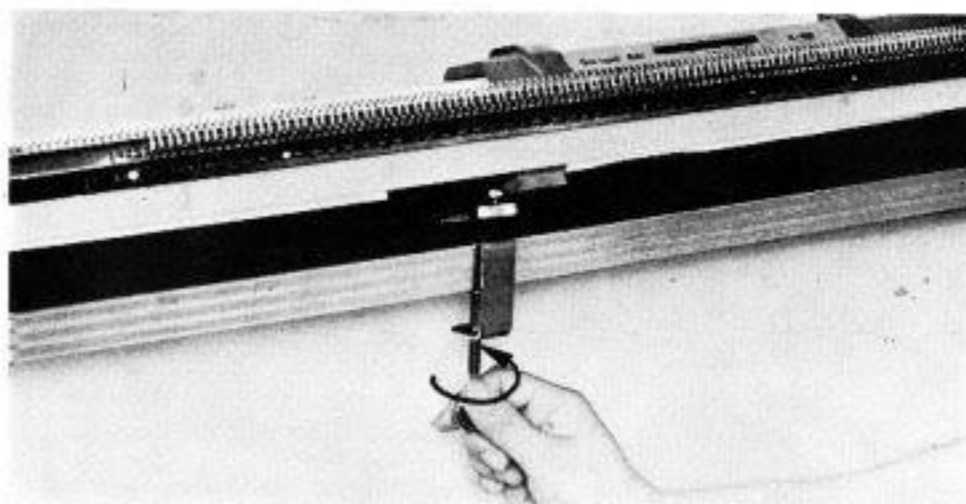
\* Turn the tightening nut of the installing tool to your left fully.



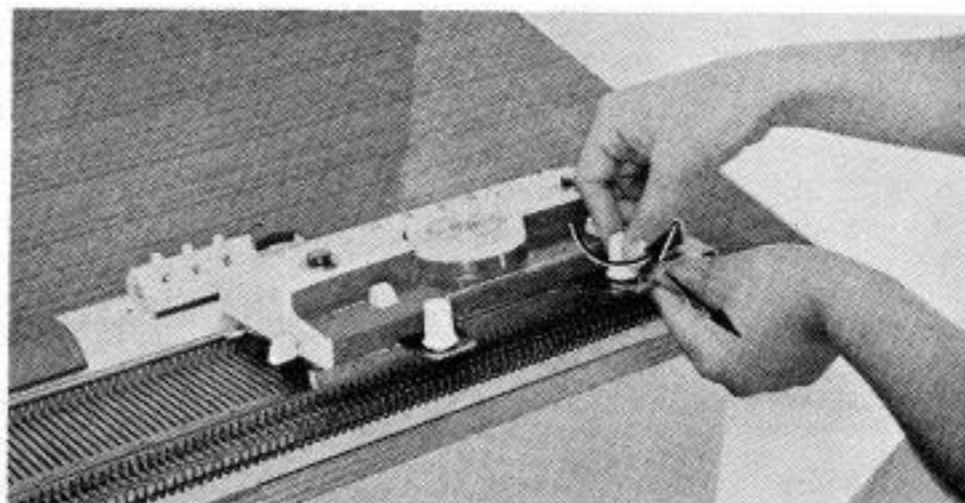
(6) Push up the installing tool to the limit and tighten it and turn the knob to your right and tighten it.



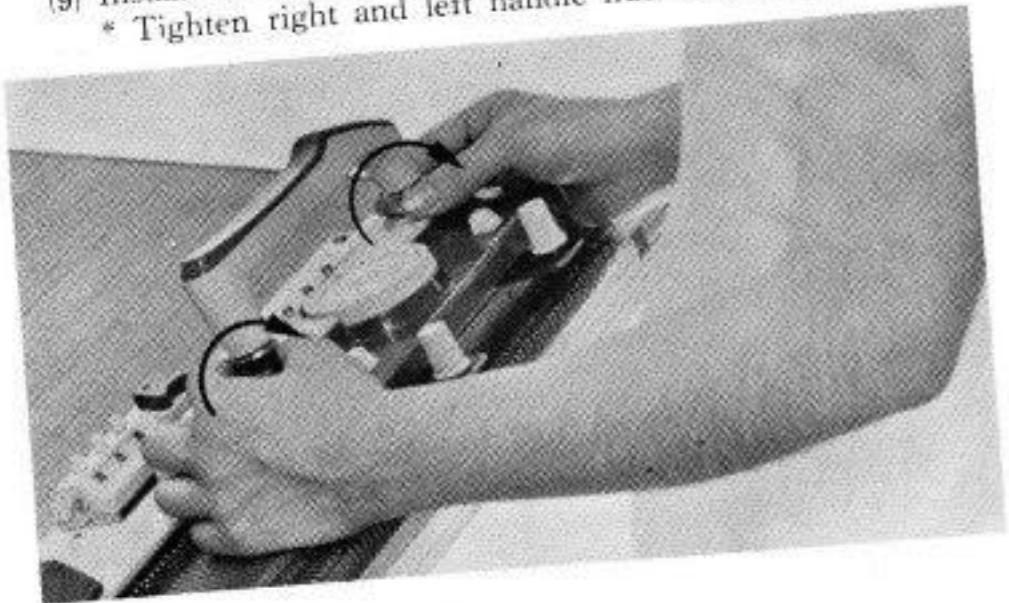
(7) Tighten both sides with the installing tools and set the machine on the table.



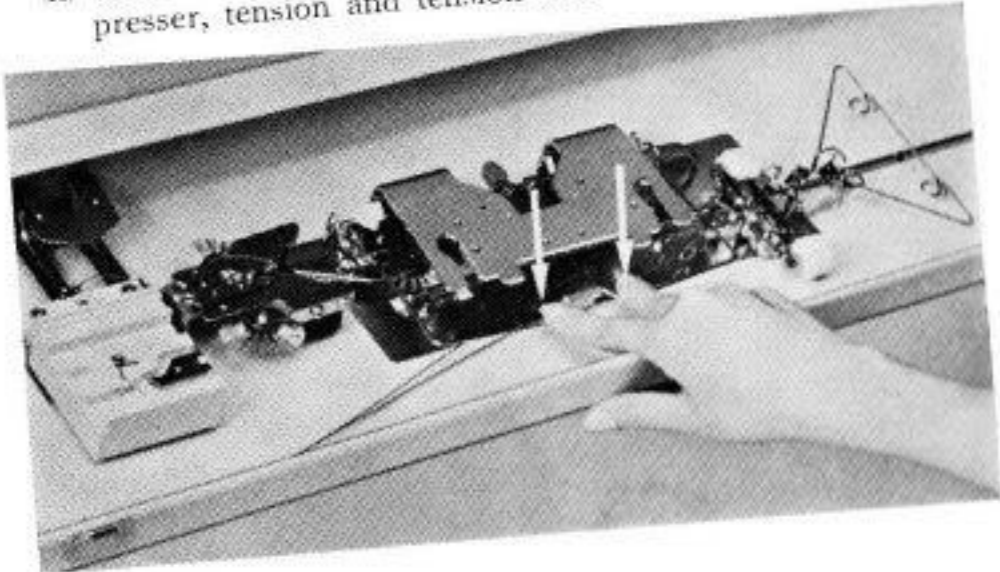
(8) Release the carriage stopper.



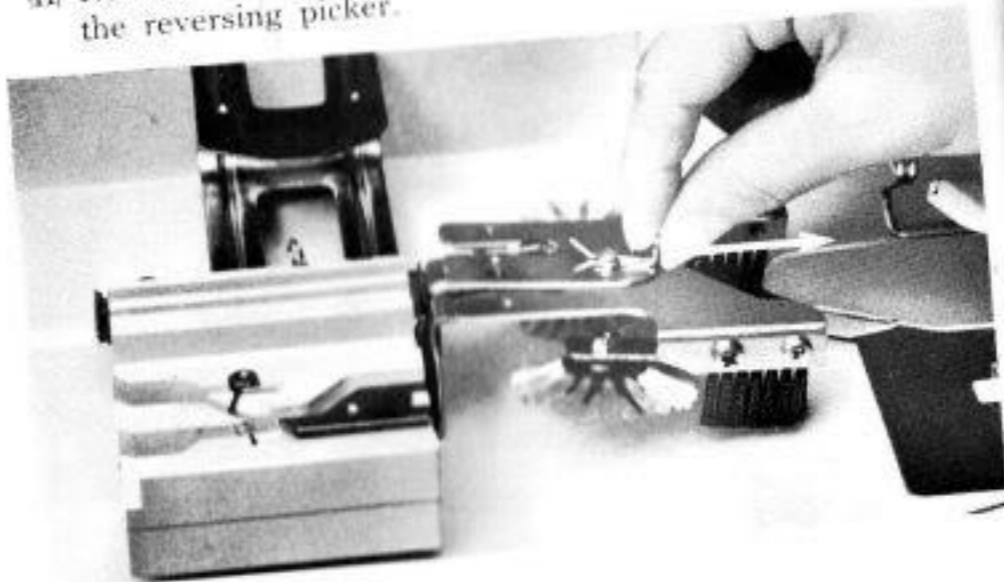
- (9) Install the handle.  
\* Tighten right and left handle nuts at the same time.



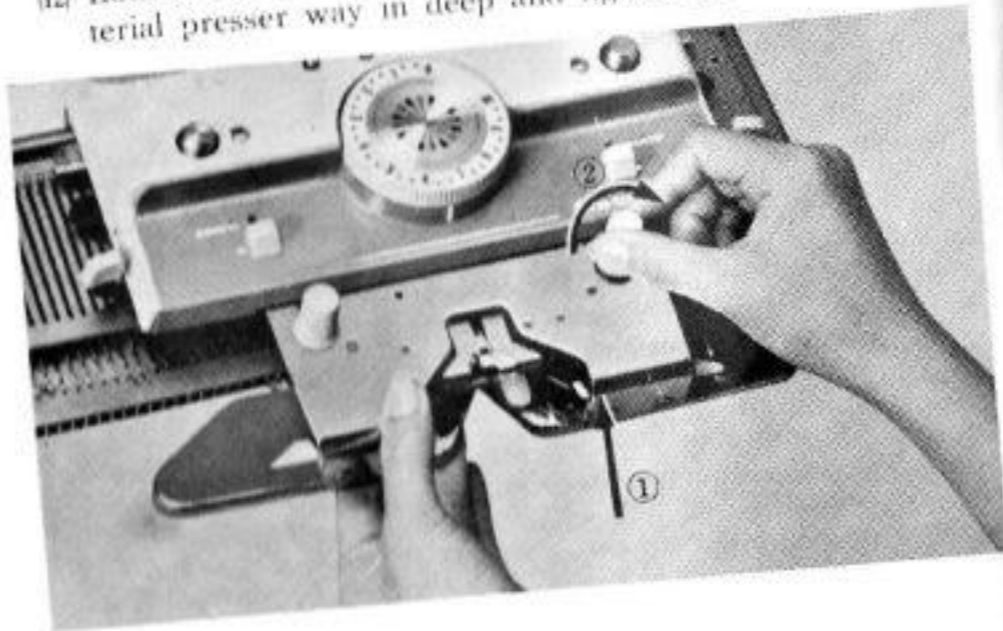
- (10) Remove the cover pressing spring, take out the material presser, tension and tension bar.



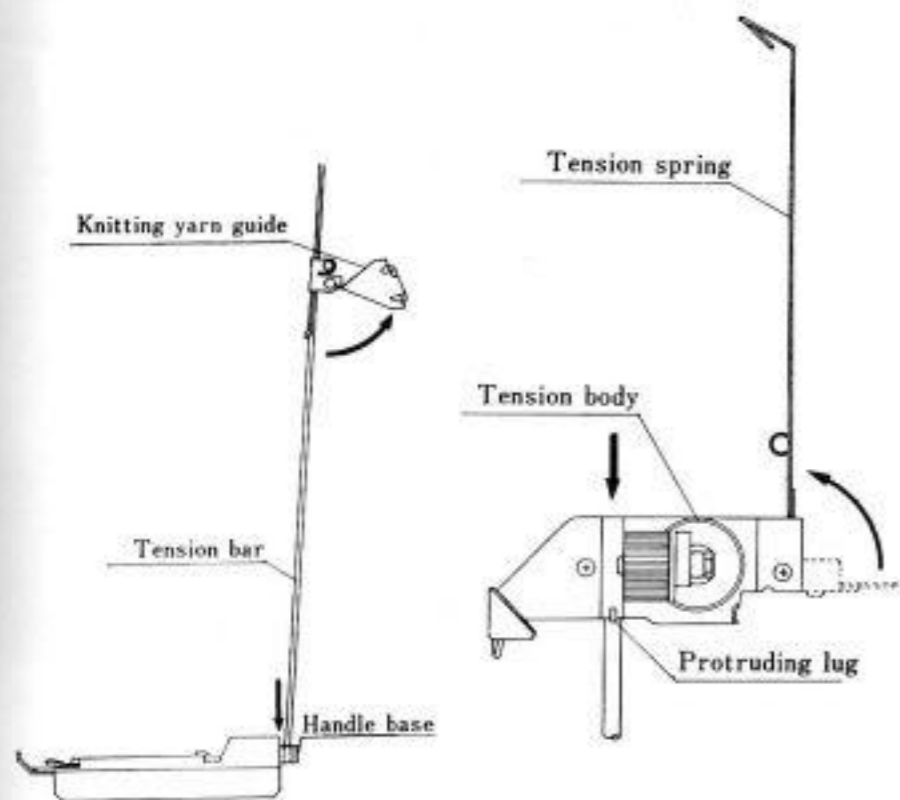
- (11) Remove the setting pin and take out the threader and the reversing picker.



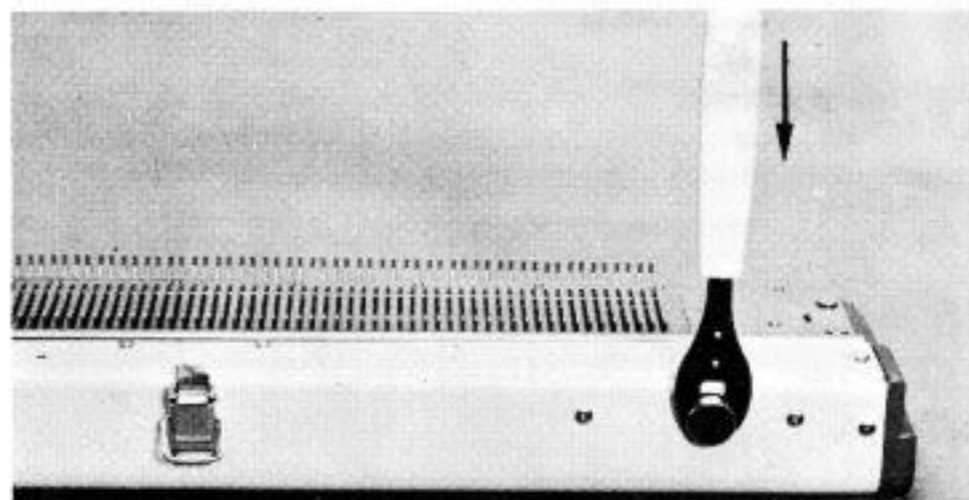
- (12) Loosen the arm knob of the carriage, push in the material presser way in deep and tighten it.



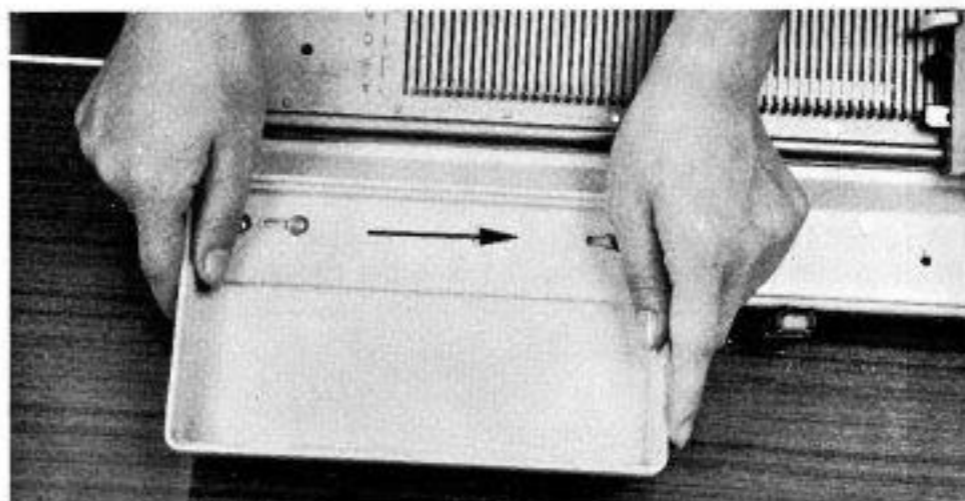
- (13) With the bent side of the tension bar downwards, insert it to the hole of the handle base.  
Raise up the knitting yarn guide to the opposite side.
- (14) Raise up the tension spring of the tension body and by matching the groove to the protruding part, insert it.



- (15) Insert the selecting lever with the name plate JUKI in front.



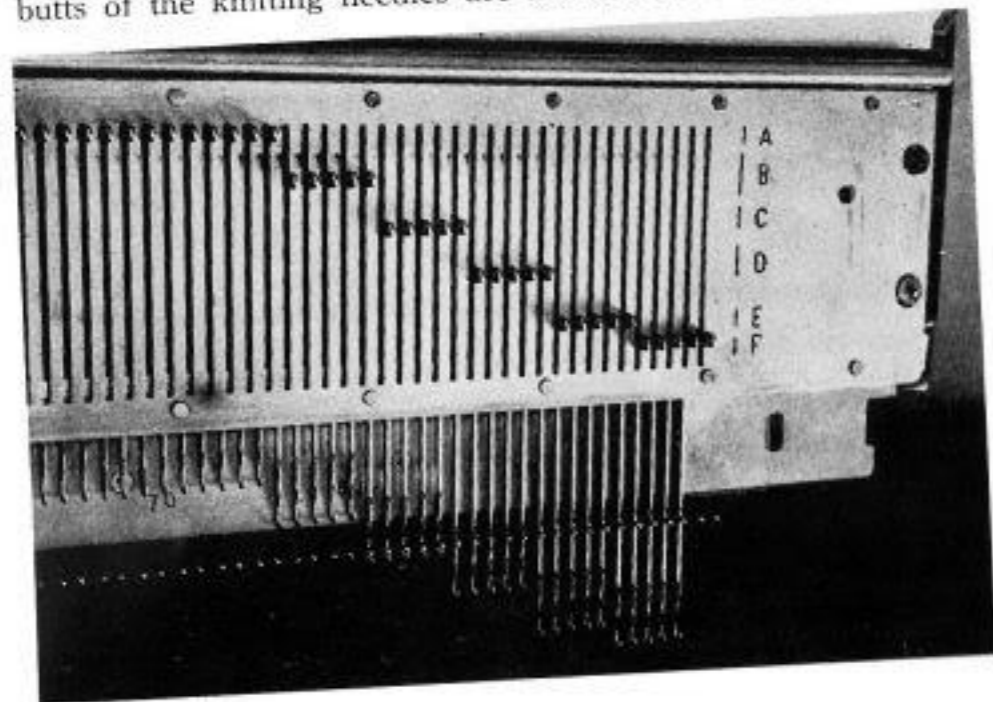
- (16) Insert the accessories box cover by matching the hole with the pin on the right side of the machine case, move it towards the left and set it.  
(To be used to receive latch needles and transfer needles.)





## II. BASIC KNOWLEDGE BEFORE KNITTING

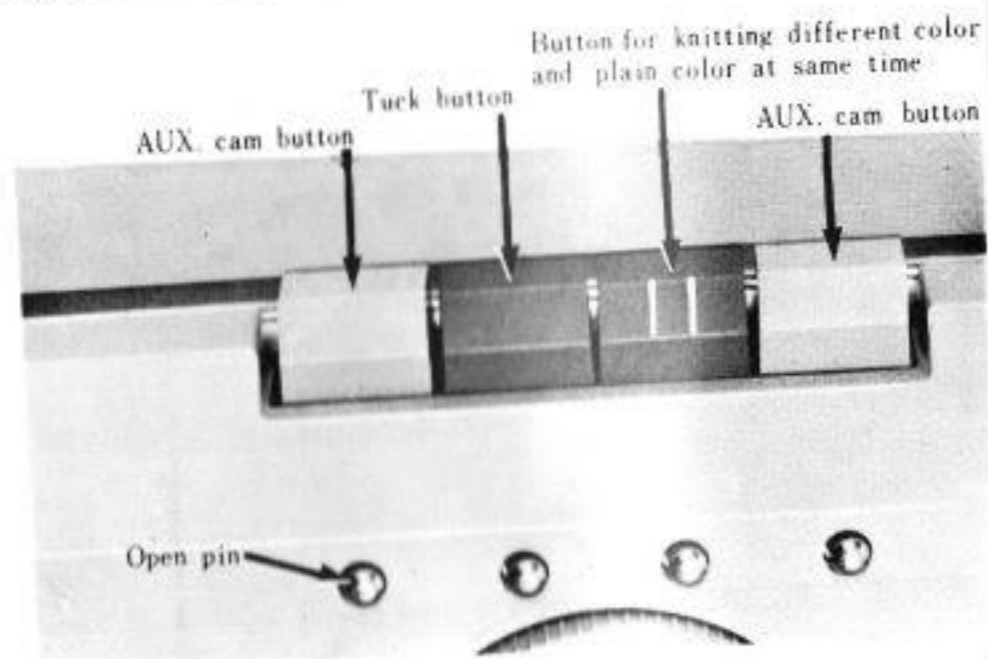
1. The positions of the butts of the knitting needles  
On both sides of the grooved plate, the positions of the butts of the knitting needles are marked as A, B, C, D, E, F.



Position A denotes needles at rest (position of unused needles)  
Position B denotes position for plain knitting  
Position C denotes position for plain knitting  
Position D denotes position of selected needles  
Position E denotes position of pull-up knitting  
Position F denotes position of needles at rest (front side)  
(used for return knitting)

## 2. Cam buttons

These buttons are used for knitting different color and plain color at the same time, tuck knitting or slide knitting.  
(For returning, just push the open pin from above)



### 3. Pull-up knob and returning lever

#### (1) Pull-up knob

There are two positions, one is "pull-up" position and the other is  $\diamond$  position.

For pull-up knitting, match it with "pull-up" position.

For other knitting jobs, match it to the  $\diamond$  position.

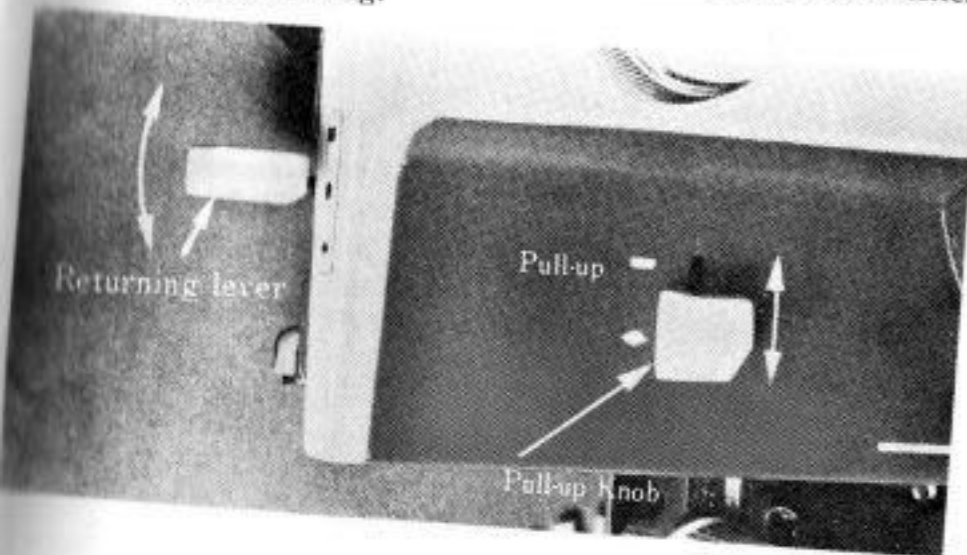
#### (2) Returning lever

For this knitting, there are three positions,  $\square$   $\circ$   $\diamond$ .

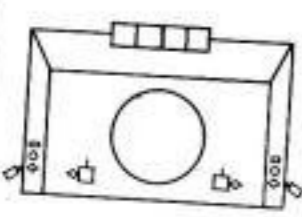
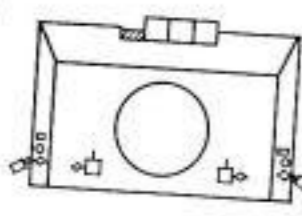
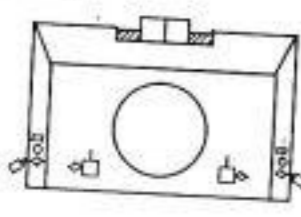
$\square$  : position is used for pull-up knitting and return knitting.

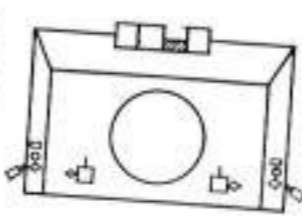
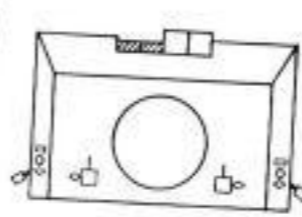
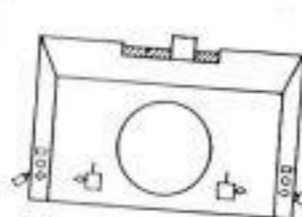
$\circ$  : position is used for making the pulled up knitting stitches plain knitting.

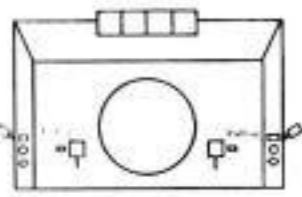
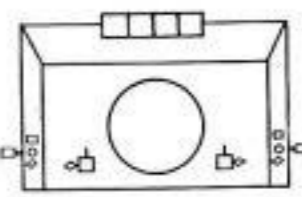
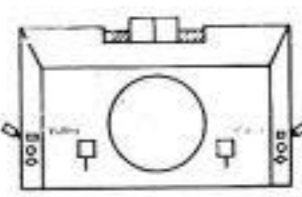
$\diamond$  : position is used for making the returned part of stitches to plain knitting.



RELATION BETWEEN THE CAM BUTTONS, PULL-UP KNOB AND RETURN LEVER KNITTING

Kind of knitting	Positions of buttons, Knob and lever	Relation between the carriage direction (arrow) and position of knitting needles
Plain Knitting		<p>← →</p> <p>○ All needles at B, C, D, E, F positions can knit and after carriage is passed, they all return to B position, arranged in order.</p>
Slide knitting (Slip-stitch) Idle feeding of B, C positions		<p>←</p> <p>○ B, C needles cannot knit. D, E, F needles can knit and after carriage is passed, they return to B position, arranged in order.</p> <p>→</p> <p>○ Same as Plain knitting</p>
		<p>← →</p> <p>○ B, C needles will not knit.</p> <p>○ D, E, F needles can knit and after carriage is passed, return to B position, arranged in order.</p>

Kind of knitting	Positions of buttons, Knob and lever	Relation between the carriage direction (arrow) and position of knitting needles
Diff. pattern knitting (Diff. color at same time)		<p>← →</p> <p>○ B, C, D, E, F needles knit and after carriage is passed, return to B position, arranged in order.</p>
Tuck knitting		<p>←</p> <p>○ B &amp; C needles cannot knit though the threads will be caught by the hook.</p> <p>○ D, E, F needles can knit and after carriage is passed, return to B position, arranged in order.</p> <p>→</p> <p>○ Same as plain knitting</p>
		<p>← →</p> <p>○ B, C needles cannot knit though the threads will be caught by the hook.</p> <p>○ D, E, F needles can knit and after carriage is passed, return to B position in order.</p>

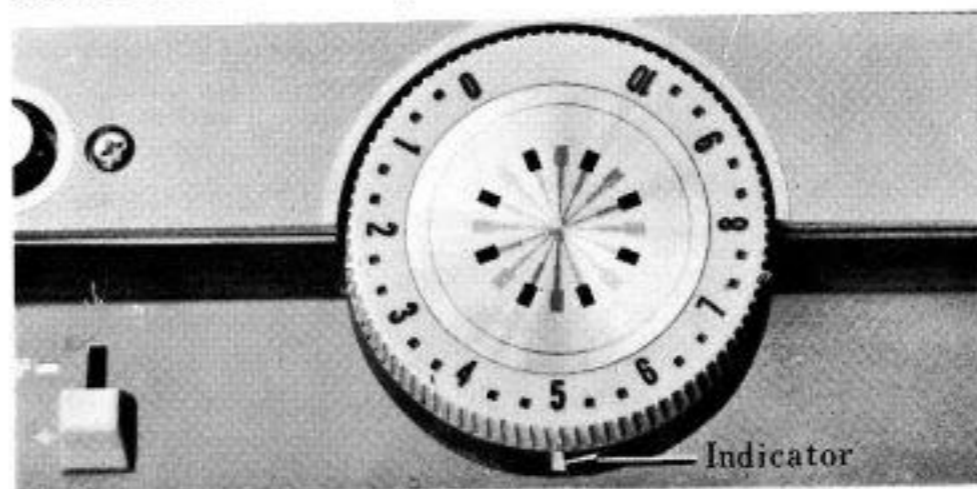
Kind of knitting	Positions of buttons, Knob and lever	Relation between the carriage direction (arrow) and position of knitting needles
Pull-up knitting		<p style="text-align: center;">←      →</p> <ul style="list-style-type: none"> <li>○ B, C needles can knit and after carriage is passed, return to B position, all arranged in order.</li> <li>○ D, E needles cannot knit after carriage is passed, return to E position, all arranged in order.</li> <li>○ F needle does not move</li> </ul>
Plain knitting of only the pulled-up part by return of pulled-up knitting		<p style="text-align: center;">←      →</p> <ul style="list-style-type: none"> <li>○ B, C, D, E needles can knit and after carriage is passed, return to B position all arranged in order.</li> <li>○ F needle does not move.</li> </ul>
Idle feeding during pull-up knitting		<p style="text-align: center;">←      →</p> <ul style="list-style-type: none"> <li>○ B, C, E, F needles do not move.</li> <li>○ D needle does not knit and after carriage is passed, moves to E position.</li> </ul>

\* In knitting all patterns, when return knitting is to be performed, match both right and left returning levers with the mark.

#### 4. Knit stitch adjusting dial

The knitting stitch length must be adjusted according to the size of the knitting thread.

The knitting figure should be matched with the indicator in the center of the dial.



(EXAMPLE)

Knitting thread	Graduation
Extremely fine	0 ~ 3
Medium fine	3 ~ 6
Normal thickness	6 ~ 9
Extremely thick	9 ~ 10

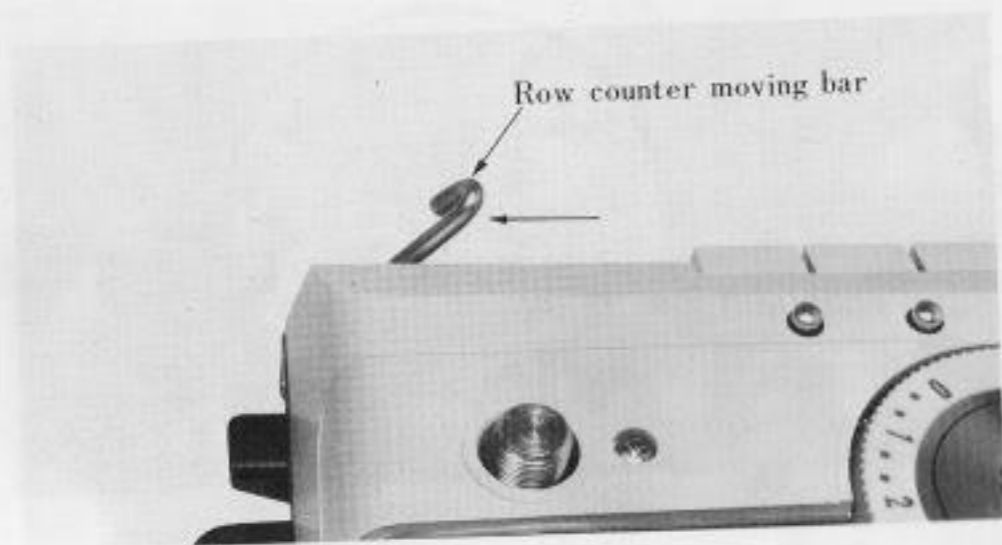


### 5. Row counter moving bar

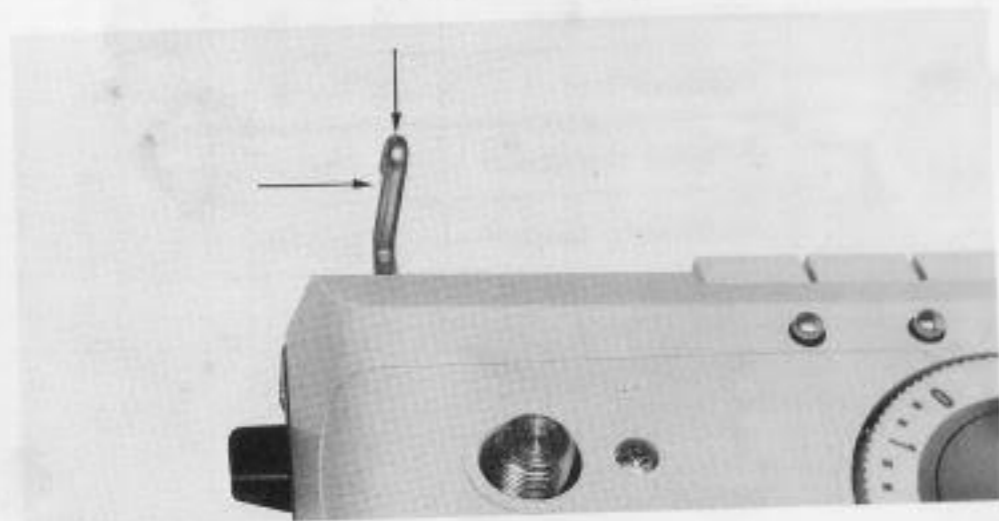
If this bar is raised up to your right, it will come up on the opposite side.

\* To store it away, push it forward and tilt it to your left.

To bring it out



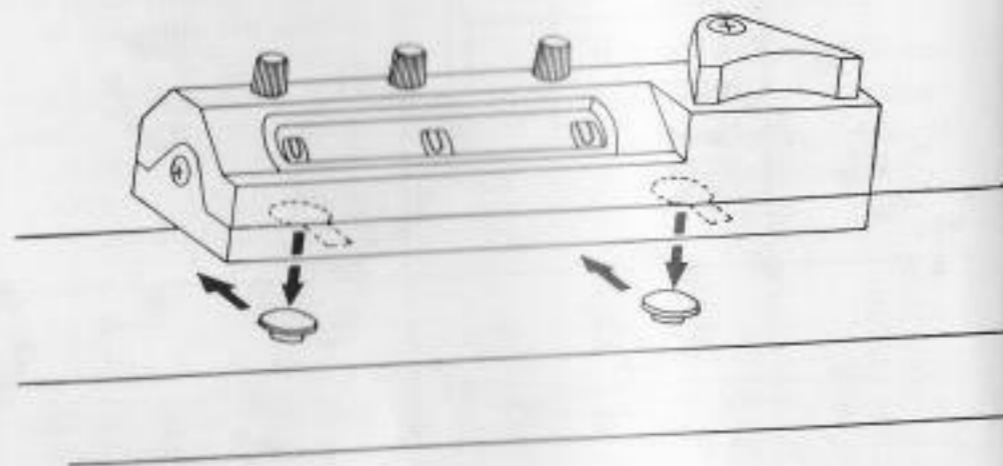
To store it away



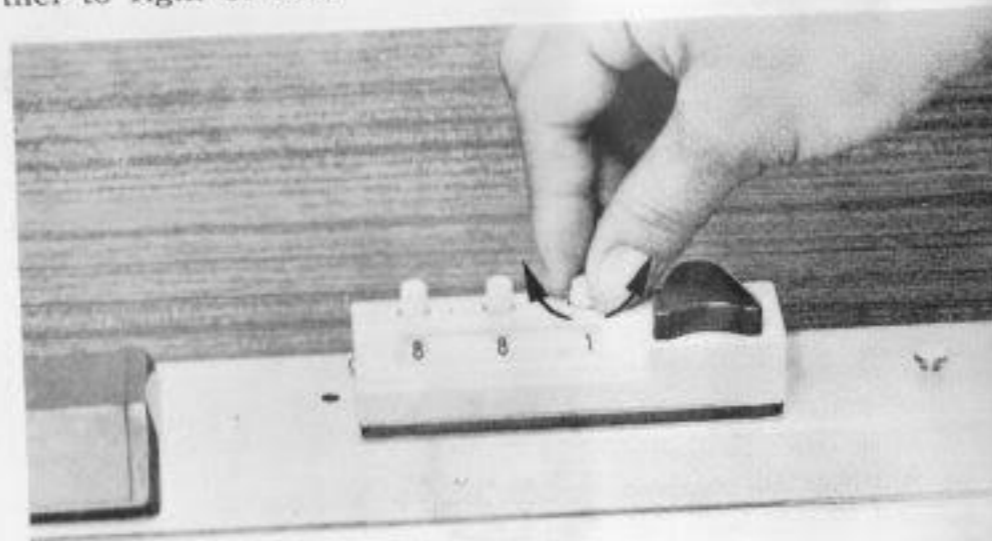
### 6. Row counter

Row counter shows, in figures, the number of rows knitted. There are two places, left and right, to attach this device but depending upon the position demanded by the knitting needles, attach it to one side.

\* To remove the row counter, pull it forward.



To return the figures to "0", rotate the respective knobs either to right or left.

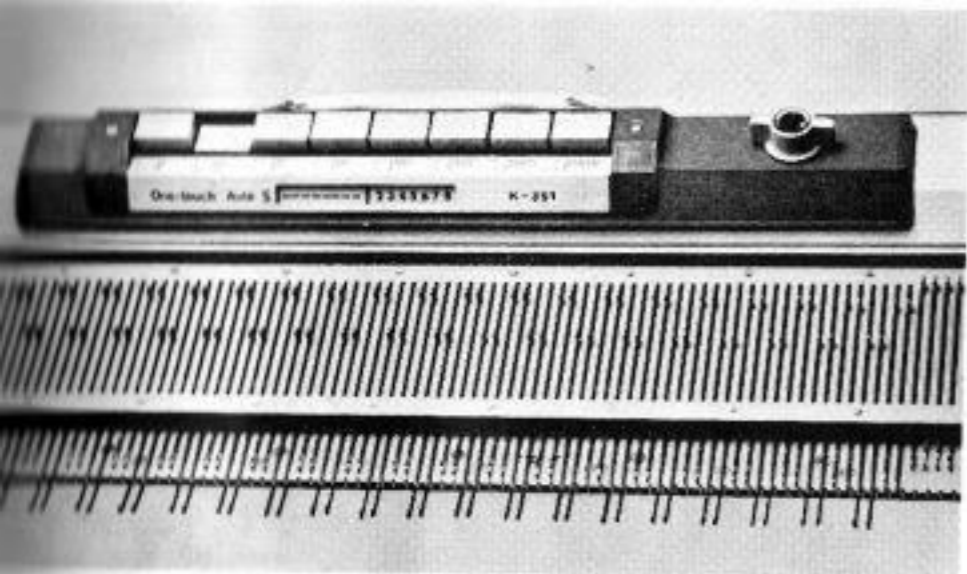


## 7. Needle selector

With the pairing of the knitting needles, many patterns can be knit.

The picture below shows positions of the selected needles to the B and D positions by the needle selector.

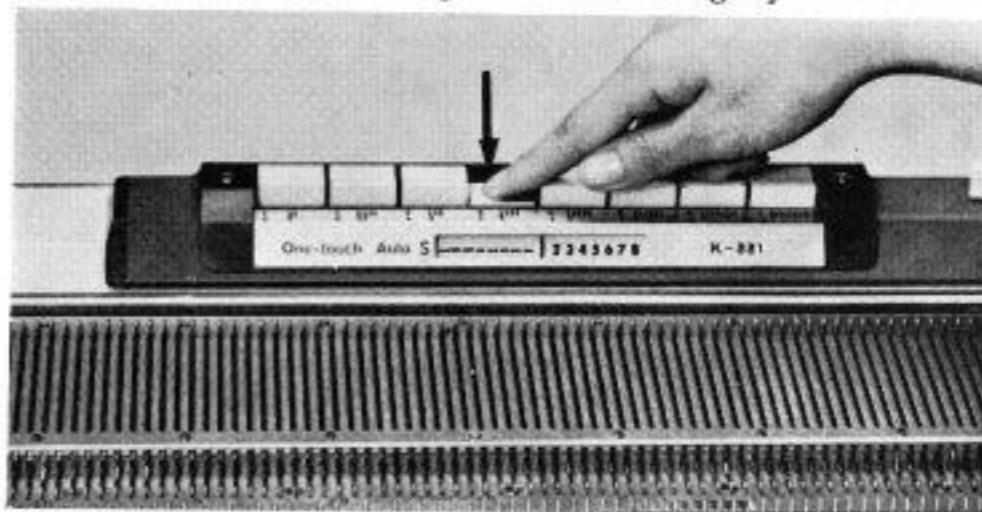
The assembling of the knitting needles in this condition is called "Needle Selection".



### (1) Pattern buttons

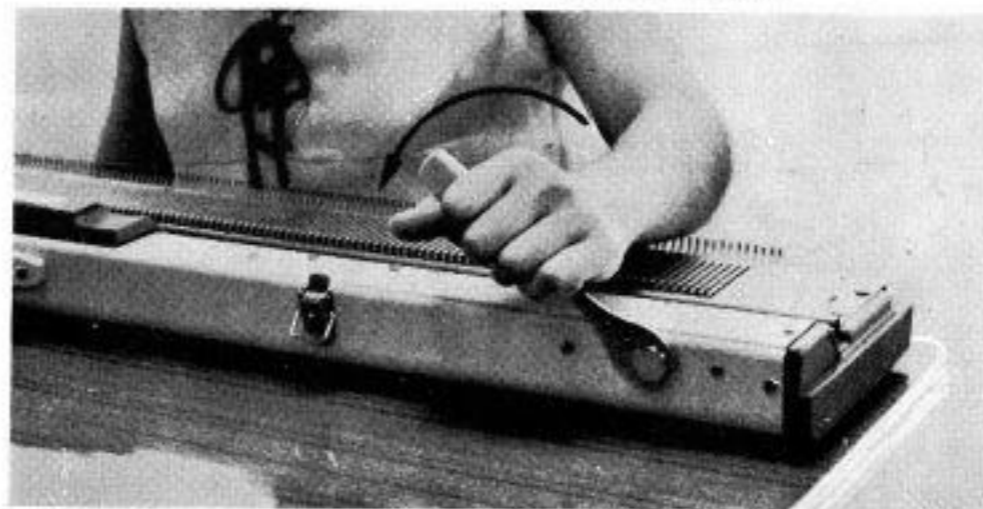
By pushing one button only, the shape of the needle selection as shown by the indicator, is set.

\* To return the pattern button to its original position, just push the other pattern buttons lightly.



### (2) Needle selection lever

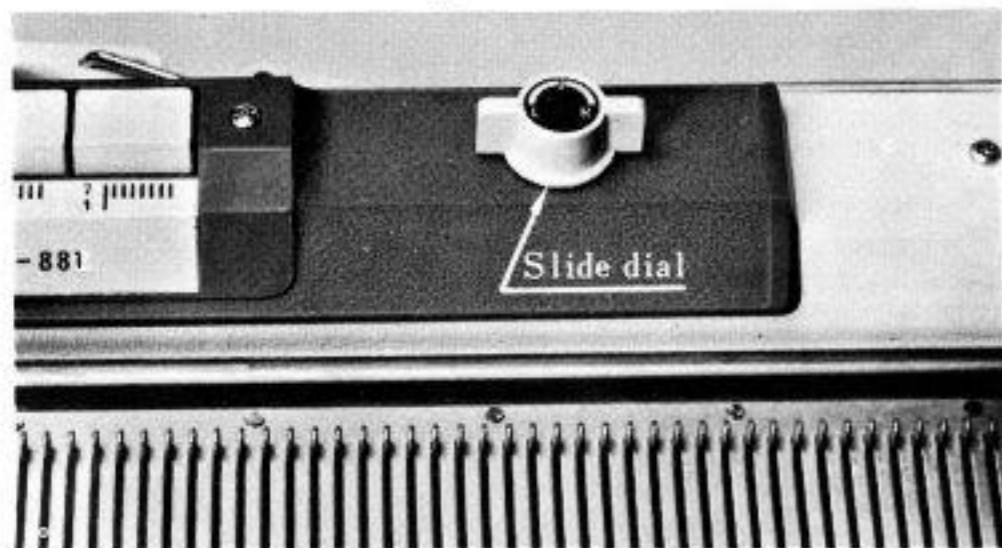
After pushing the pattern button, tilt the needle selection lever to your right, to the limit, and the knitting needles at the B position will be "selected" to the D position in accordance with the indicator of the pattern button.



### (3) Slide dial and the slide graduation

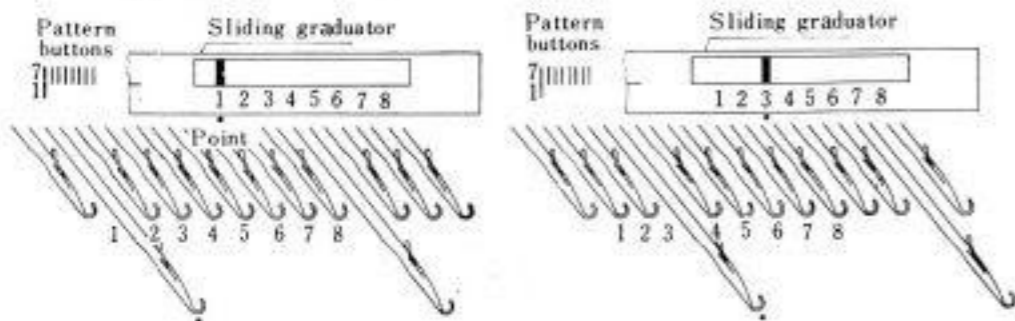
Slide dial is used to move the position of the selecting needles horizontally.

Match the figure of the slide graduation with the red line and fix the position of the knitting needles which becomes the standard for selecting the needles.



When the slide graduation is matched to "1", the standard knitting needles to be selected come to "1" position of the groove plate.

Thus, if the slide graduation is advanced to 2...3..., the standard knitting needles also move to 2...3... positions of the groove plate.



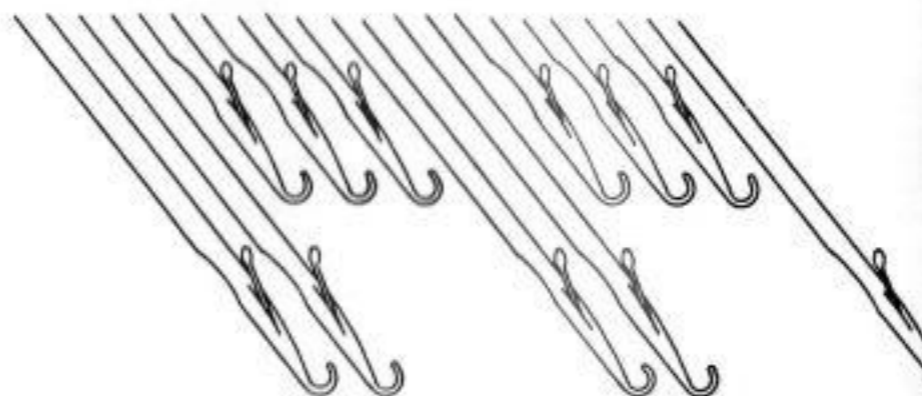
\* Do not move the pattern buttons or the slide dial when the selecting lever is in knocked down condition.

### 8. Selecting units not in pattern buttons

It is possible to select needles not in pattern buttons in the following manner:

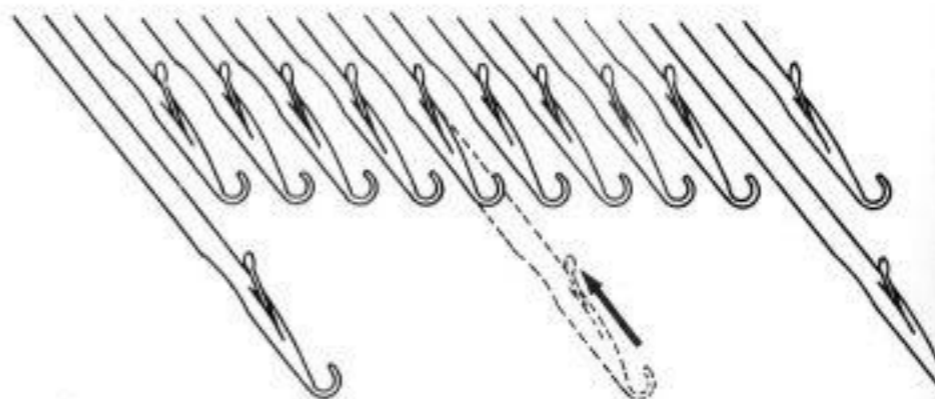
Example 1: 2-3 needles selection

- ① Match the slide graduation to "1" and make 1-4 needle selection.
- ② Next, match the slide graduation to "2" and repeat 1 needle selection.



Example 2: 1-9 needles selection

- ① Make 1-4 needle selection.
- ② Next, return the knitting needles at "D" position, which are placed at alternate units, to B position.

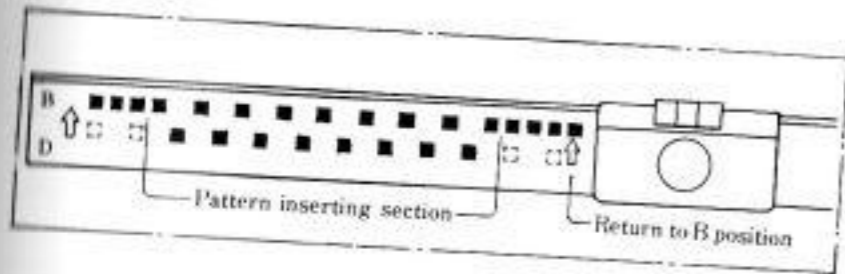


Besides the above, many other selected needle shapes can be made by combination of pairings.

### 9. Partial selections

When the pattern is to be inserted to one section of the knitting cloth, select the needles and by leaving the required needles only, return all other needles to the B position.

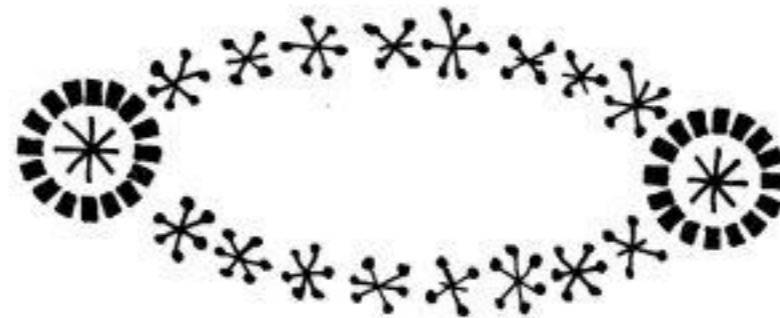
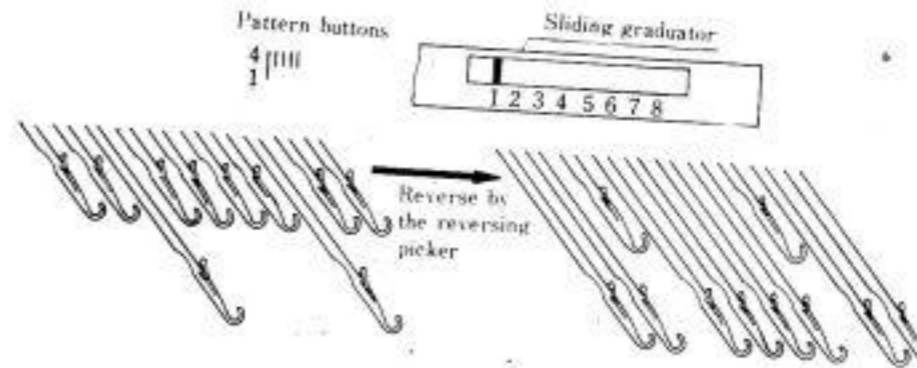
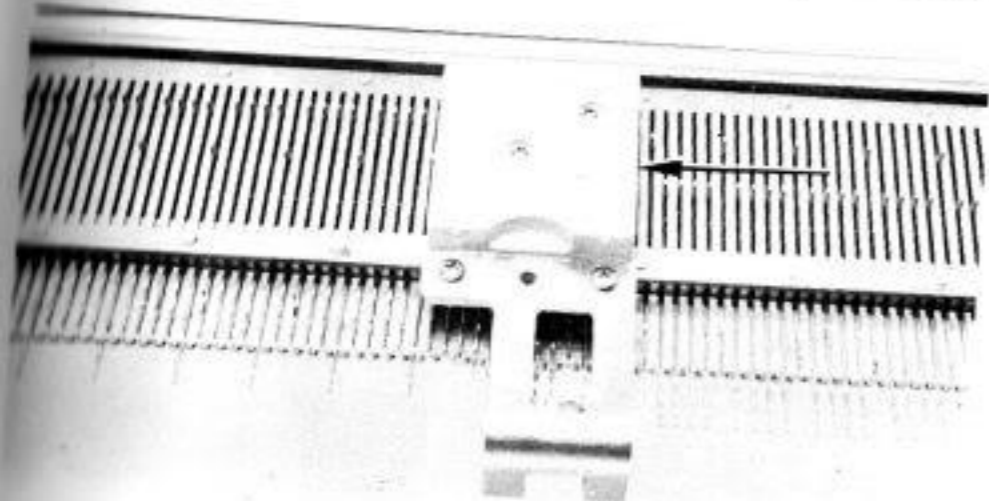
\* Note: For tuck knitting and sliding stitch knitting, reverse this process and return the needles at B position to position D.



### 10. The reversing picker

This is used for reversing (opposite direction) the shape of the selecting needles.

For example: When the 4-1 needle selection is required, select the needles 1-4 and pass the reversing picker from right to left.





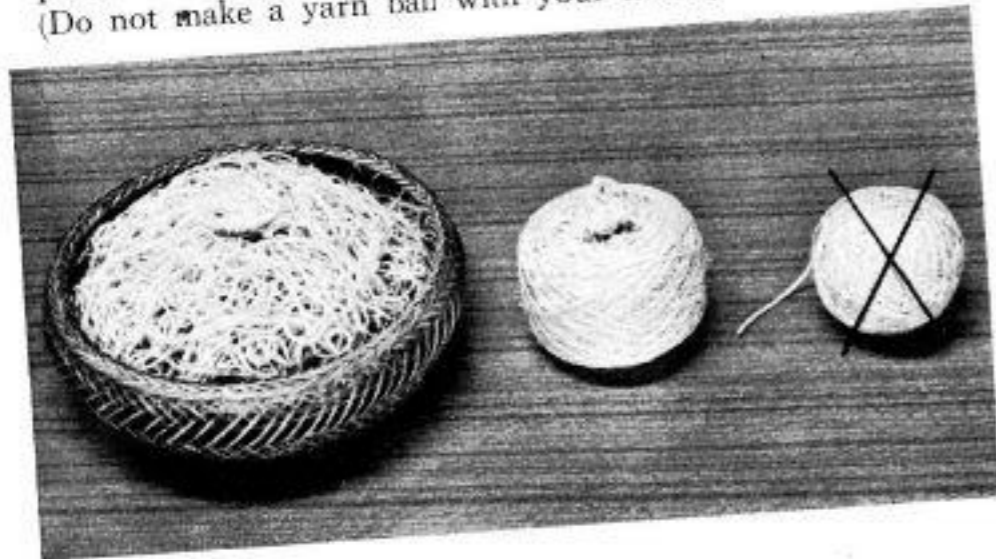
### III. HOW TO START KNITTING AND PLAIN KNITTING

#### 1. Preparation for knitting

##### (1) The knitting yarn

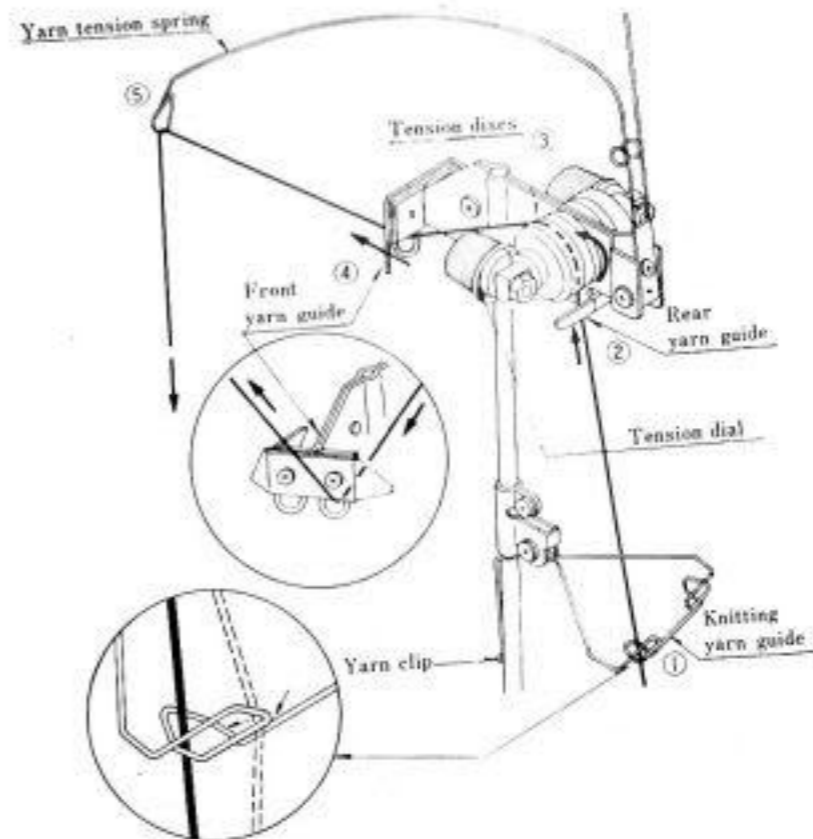
Remove all twirls from the yarn and place it fluffly in a basket or box. JUKI's yarn basket is ideal for this purpose.

(Do not make a yarn ball with your hands)



(2) Pass the knitting yarn to the tension in the following order:

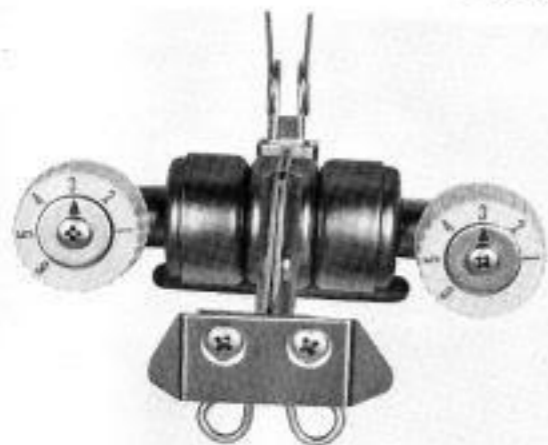
- ① Pass it to the knitting yarn guide.
- ② In-between the rear yarn guide and the tension disc.
- ③ Clamp it to the tension disc.
- ④ Pass it to the front yarn guide.
- ⑤ Pass it to the tension spring.
- ⑥ Clamp the end of the yarn on the yarn hanger.



(3) The yarn adjusting dial of the tension is adjusted by the knitting yarn.

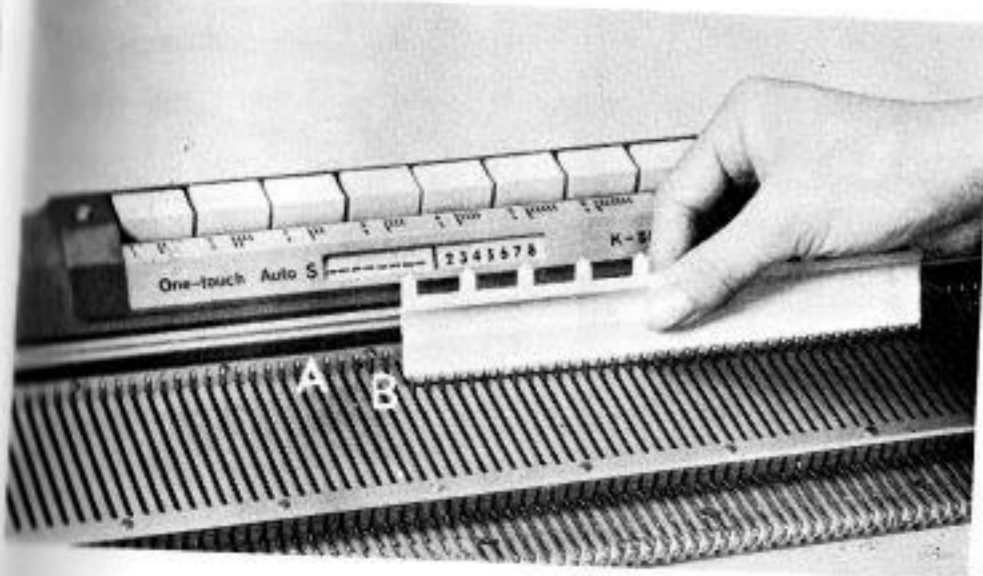
If the figure of the yarn adjusting dial is increased, the tension of the knitting yarn becomes stronger.

For medium fine yarn, match the tension dial to 3-4.



(4) Take out the knitting yarn.

Take out the knitting yarn from A position to the B position in consonance with the knitting width.



\* Set the carriage, knob, and lever to the plain knitting condition (refer to the chapter on "Relation Between the Cam Button etc.") and after one round-trip, arrange the needles in order.

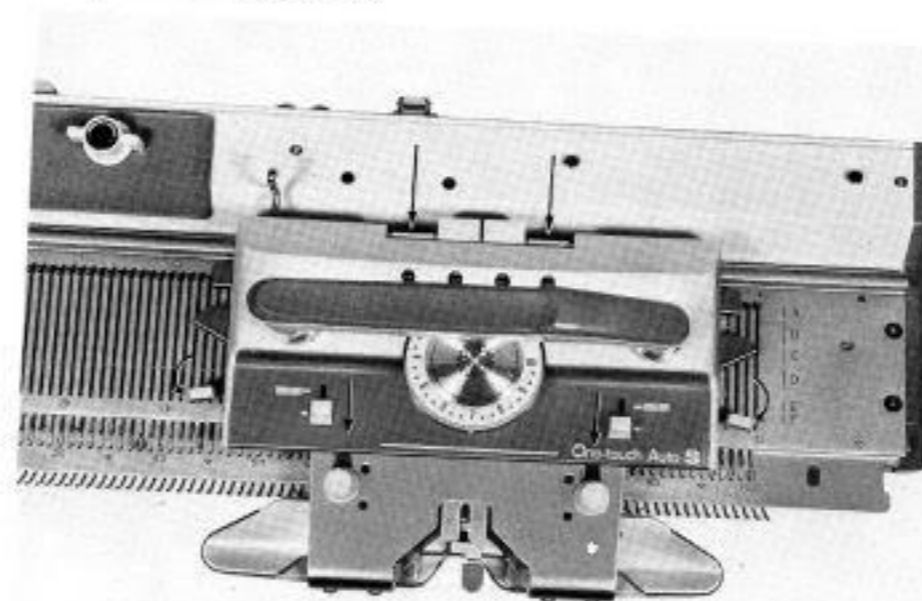
(5) Move the carriage to the right side of the machine and set it as follows:

Auxiliary cam button: push both right and left buttons

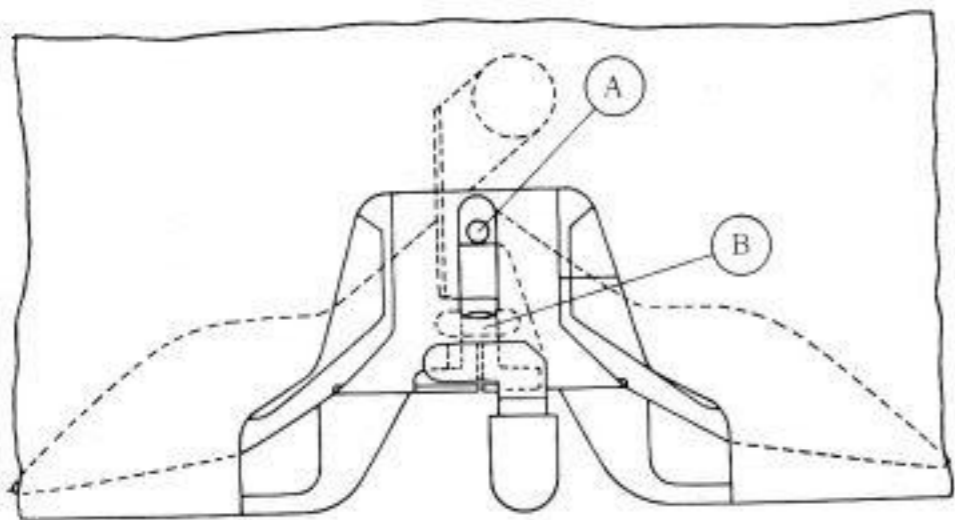
Pull-up knob: match both right and left to the mark.

Returning lever: match both right and left to the mark.

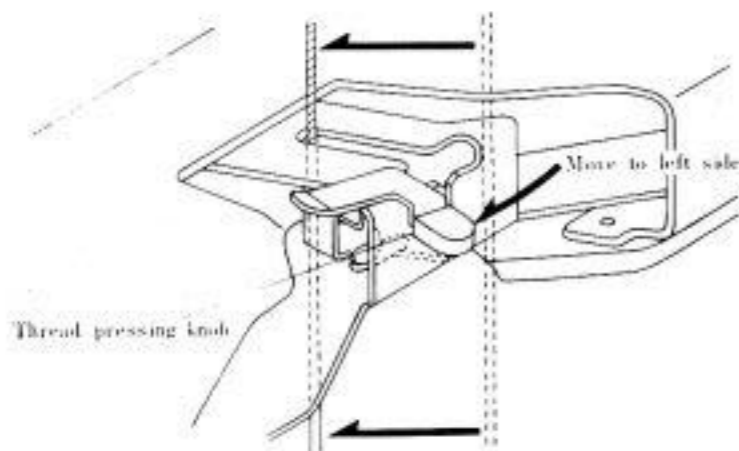
Stitch length adjusting dial: a little coarser than standard (match to about 7).



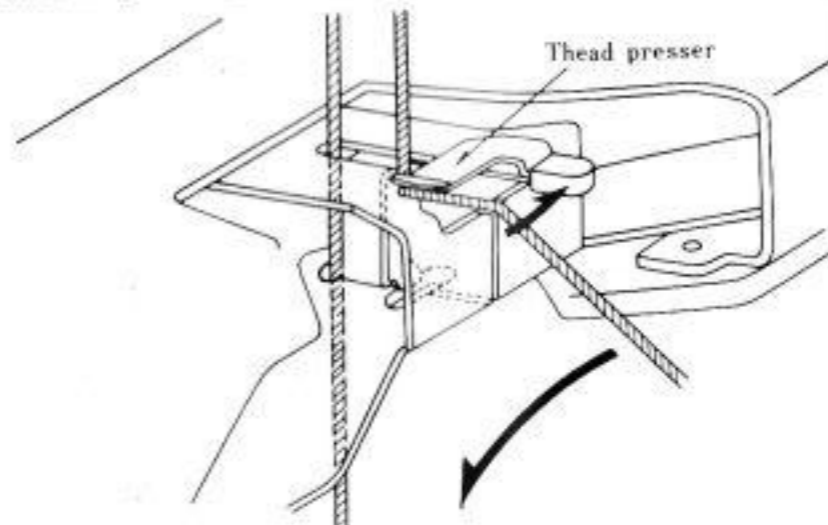
- (6) Pass the knitting yarn from the tension to the thread mouth in the following manner:  
 \* The thread mouth B is to be used for different colored patterns.



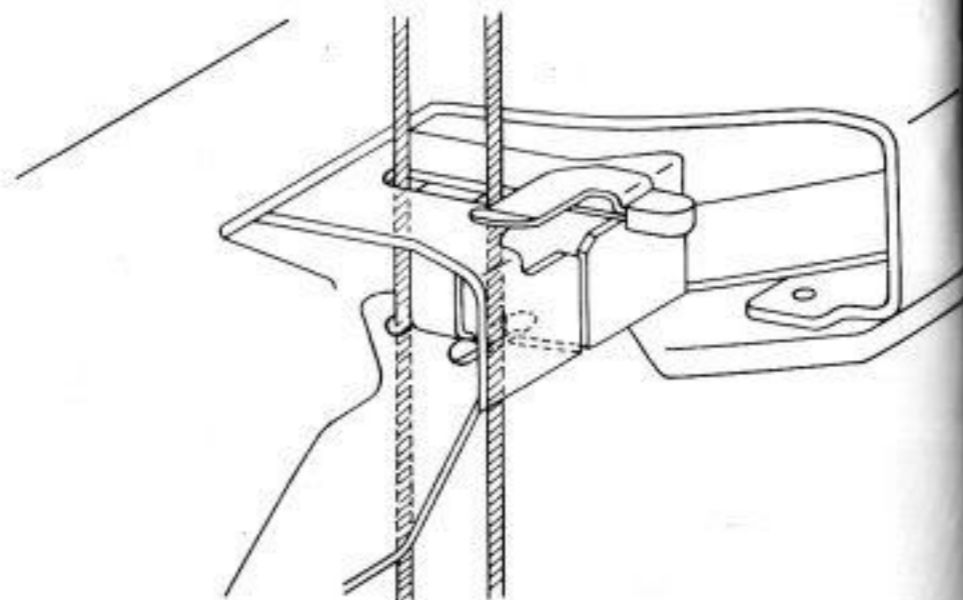
- ① Move the thread pressing knob to left side and insert the knitting yarn deep into the center groove.  
 After verifying that the knitting yarn is positively inserted into the thread mouth A, return the thread pressing knob to right side.



- ② For different colored patterns, after passing the thread through the thread mouth A, duck the knitting yarn under the thread presser while moving it against the thread pressing knob.

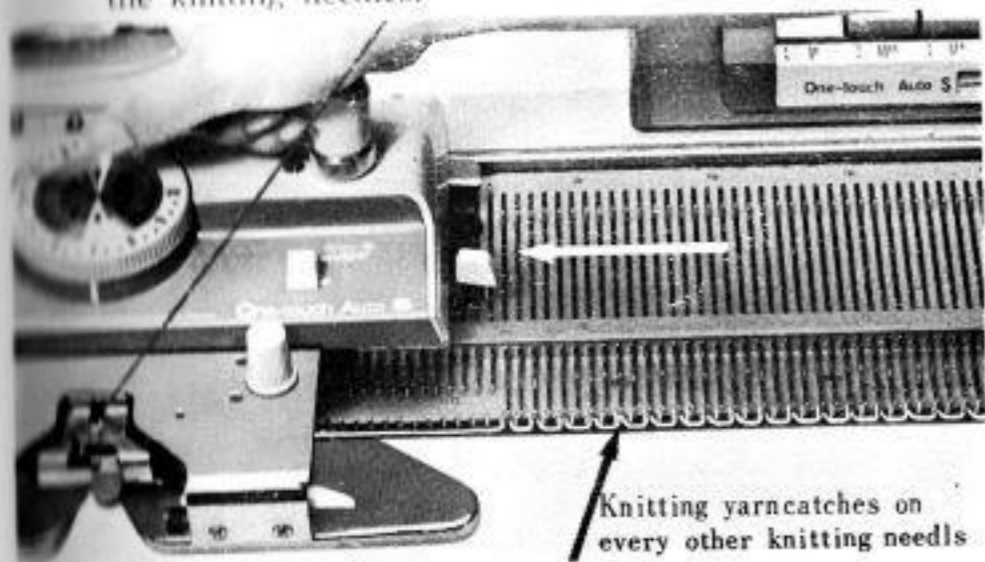


- ③ Pull the end of the different colored yarn slightly and insert it the thread mouth B.



### 2. Start of of knitting

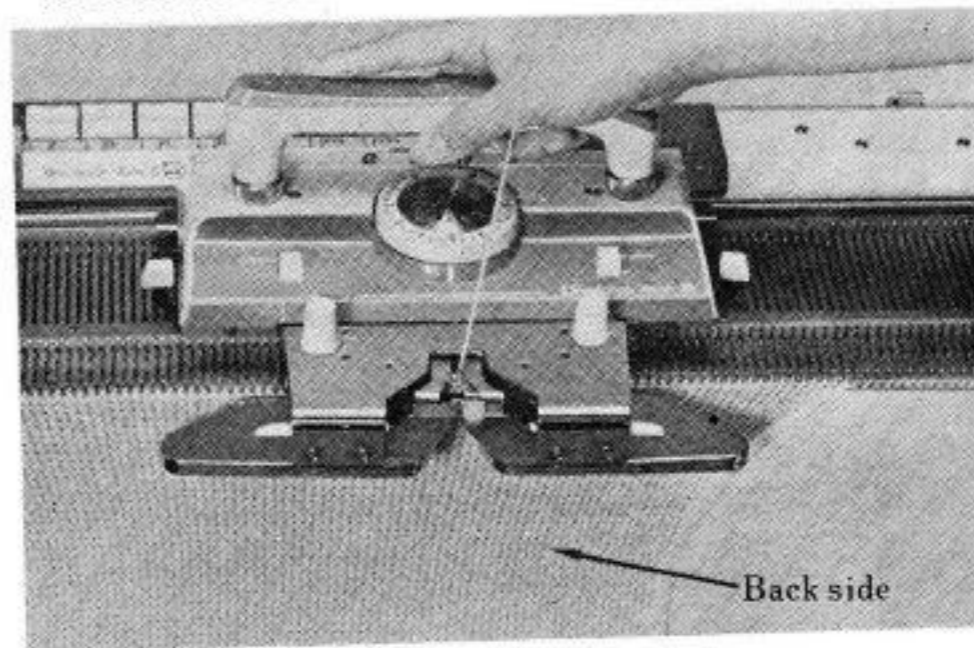
- ① Match the slide graduation to "1" and select 1-1 needles.
- ② Pull the end of the knitting yarn lightly with your left hand and move the carriage to left.  
\* Move the carriage until its end is completely off from the knitting needles.



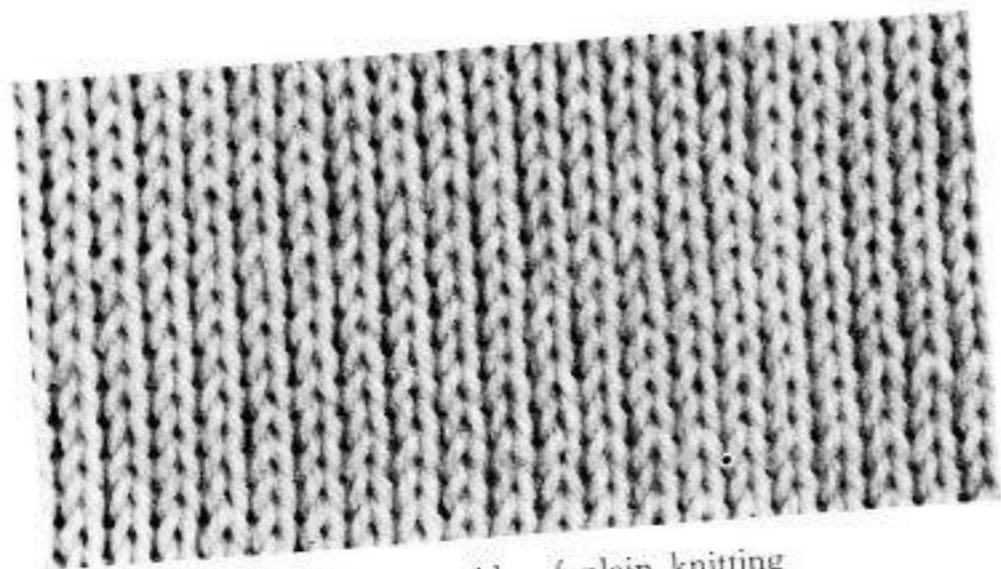
- \* The knitting yarn will be caught on every other needles.
- ③ Match the slide graduation to "2". Select 1-1 needles and knit one row.
  - ④ Match the slide graduation to "3". Select 1-1 needles and knit one row.
  - ⑤ Thereafter, match the slide graduation from "4" to "8" and as you move the slide, keep on knitting the same way.
  - ⑥ Return the slide graduation to "1" and return the auxiliary cam buttons, both right and left, to their original positions.
  - ⑦ With this position, knit 4-5 rows of plain knitting.

### 3. Plain knitting ("Meriyasu" knitting)

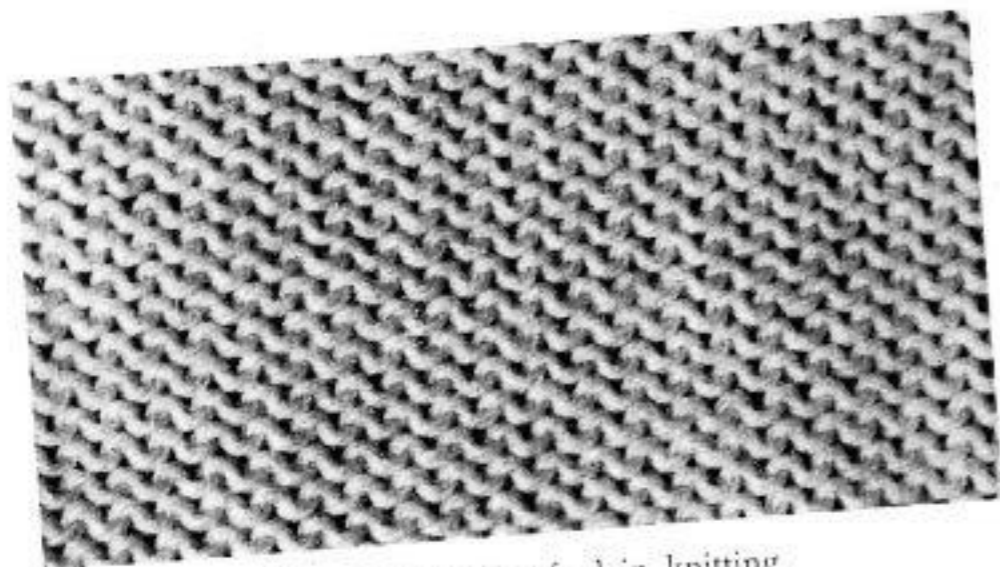
- (1) Match the stitch length adjusting dial graduation with the figure most suited for the knitting yarn.  
(For example: For medium fine yarn, about "5")
- (2) If the carriage is moved to right and left as you keep on knitting, plain knitting job will be produced.  
The forward side (operator's side) of the yarn in the machine is called the "rear stitch side" and the opposite side is called the "front stitch side".







Front stitch side of plain knitting



Rear stitch side of plain knitting

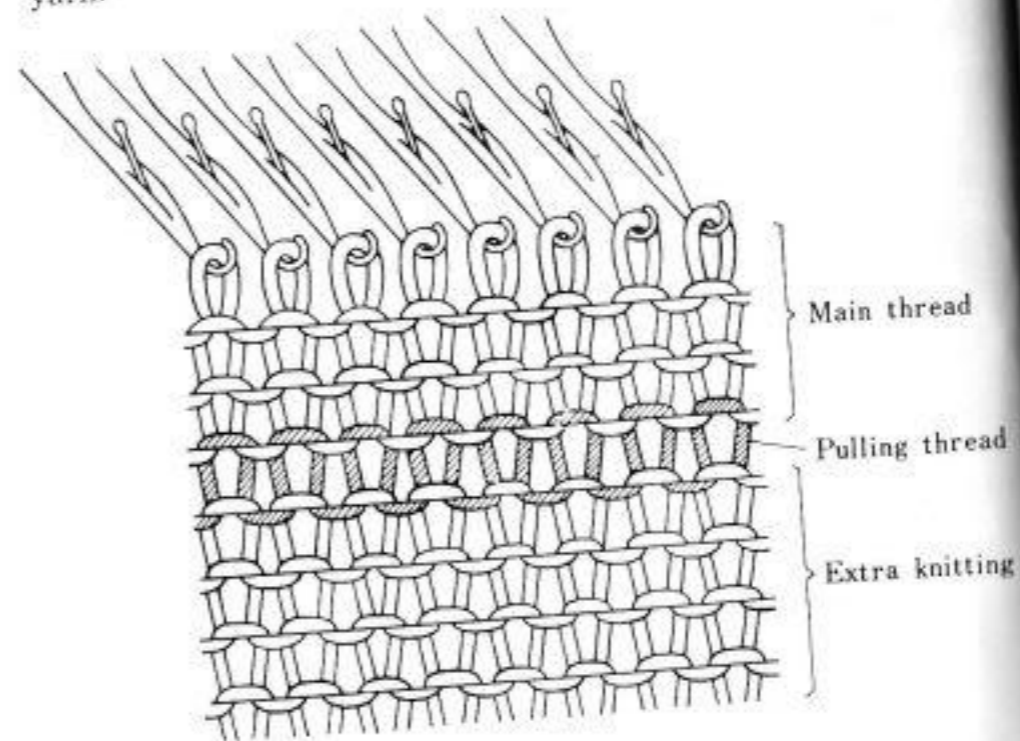
#### 4. "Extra" knitting

Before starting the knitting or when the knitting material is to be removed from the machine, the part which is knitted by a different yarn is called "sute" or extra knitting.

To enter into the main knitting work from "sute" knitting, knit one row with the pulling thread and then do the main knitting.

If the pulling thread is pulled out, the "sute" knitting and the main knitting become separate.

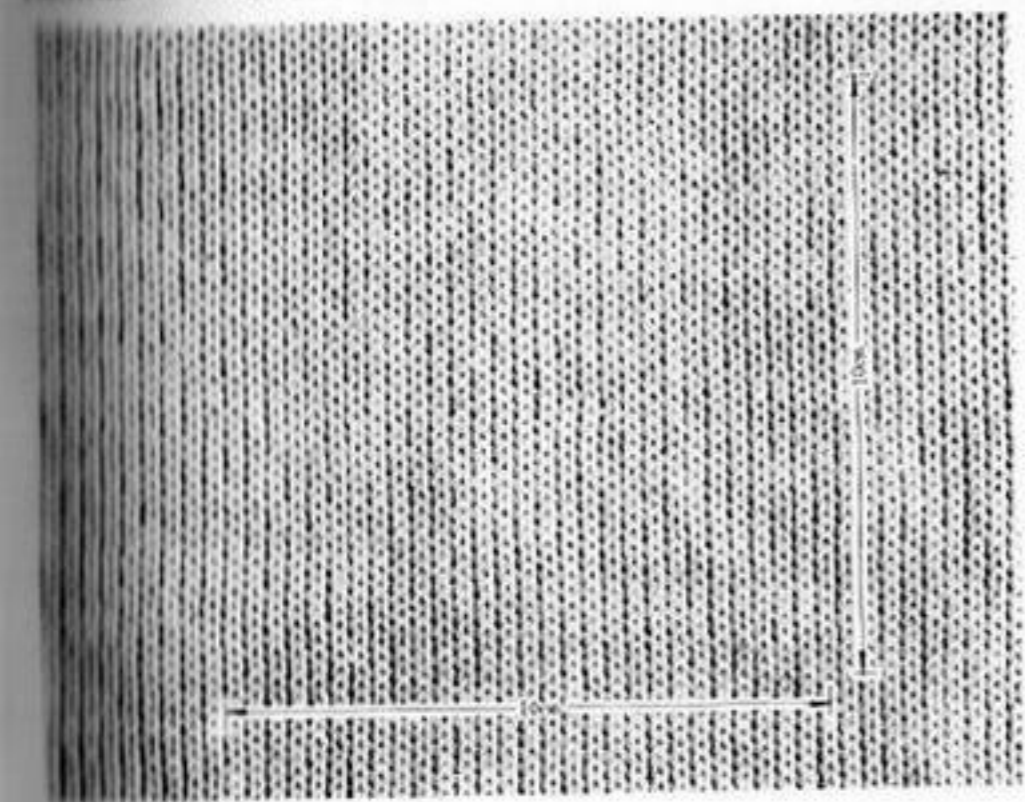
At the end of knitting, "sute" knitting can be continued in that condition and 6-10 rows can be knit with a different yarn.



### 8. Knitting gauge

This means a knitting cloth with horizontal length of 10cm (4") and vertical length of 10 cm and the number of knitting mesh and number of rows contained therein.

This knitting gauge is made of 15 cm (6") square knitting cloth by the same yarn as the knitting yarn and removed from the machine and left there in natural condition for a while and counts the knitting stitch number of 10 cm of horizontal knitting and 10 cm of vertical number of rows.



The standard gauge of plain knitting is as follows :

Yarn	No. stitches	No. rows
Extremely fine	40	56
Medium fine	32	44
Normal thickness	26	35

This gauge computes the number of needles used a number of rows by calculating the number of stitches number of rows from the size and dimension of the cloth. So, select a right knitting gauge to suit your taste.









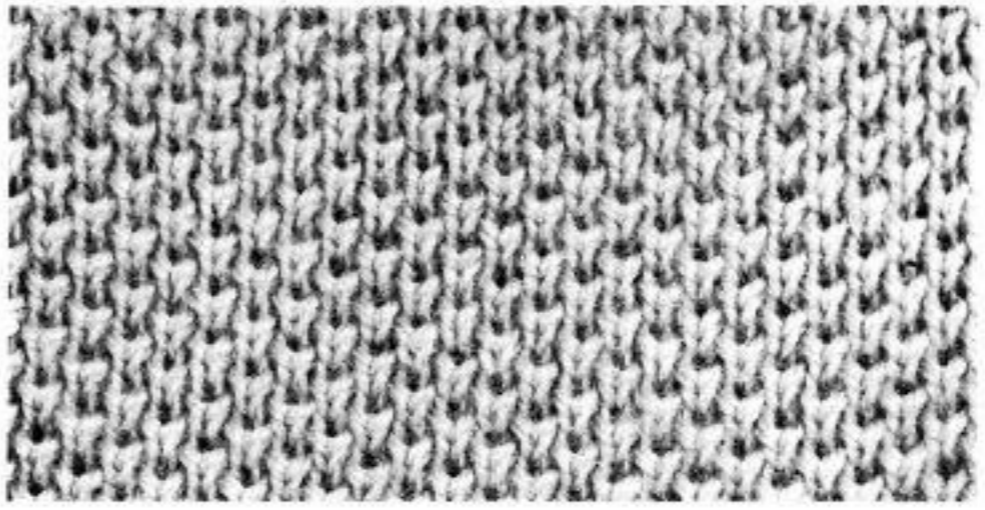


- ⑧ Knit 2 rows in that position.
- ⑨ Match the left pullover knob with the "pullover" mark and the returning lever with the □ sign.
- ⑩ Exchange the original color (white) yarn with of the different color (brown) yarn.
- ⑪ Match the slide graduation to "3" and select needles.
- ⑫ Repeat operations ②~⑧.
- ⑬ Match the slide graduation to "1" and select needles.
- ⑭ Repeat operations ③~⑩ and keep on knitting.

2. Tuck knitting

This form of knitting produces soft 3-dimensional appearing stitches due to the ample space produced by the pullover knitting.

If tuck knitting of every other needle is carried out, the so-called "alternate stitch pattern" can be produced.



Tuck Knitting (Front side)

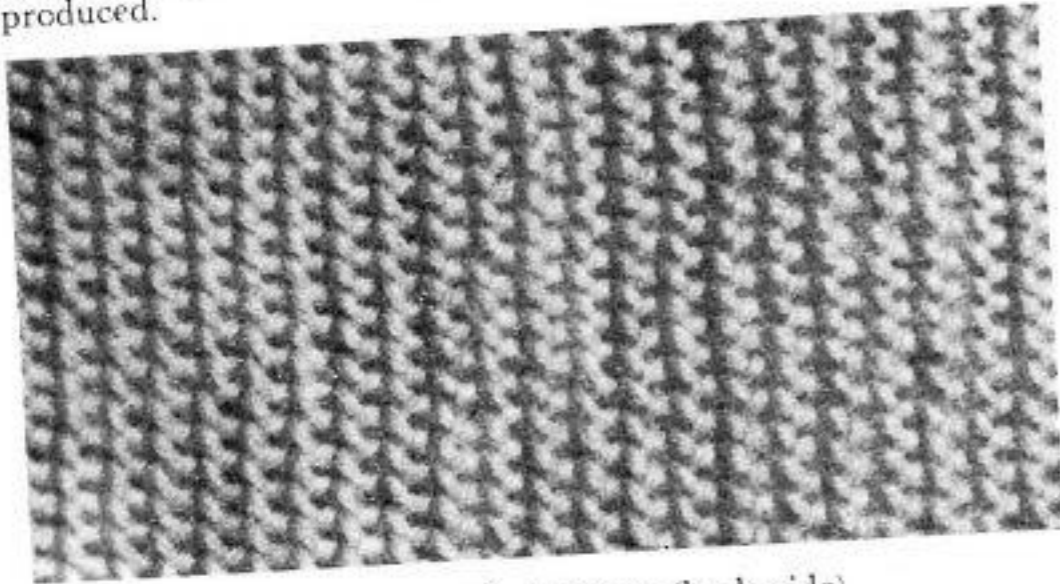
\* When selecting the needles, if both ends of the knitting needles remain at the "B" position, take them out to the "D" position.

8	→	"		" "		" "	" "											
7	←	"		" "		" "	" "			2	○							
6	→	"		" "		" "	" "											
5	←	"		" "		" "	" "			1	○							
4	→	"		" "		" "	" "											
3	←	"		" "		" "	" "			2	○							
2	→	"		" "		" "	" "											
1	←	BC		◇ ◇		◇ ◇	1-1		1		○							
0	D	A	B					P	S	L	R	W						
		T		C														

Working Table 3

### 3. Continuous tuck knitting

This is one form of tuck knitting by which, by continuing the tuck knitting, a 3-dimensional appearing tuck pattern can be produced.

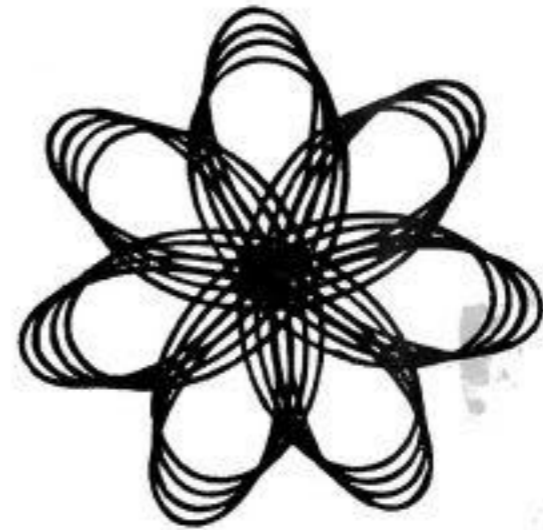


Continuous tuck knitting (back side)

\* When selecting the needles, if both ends of the knitting needles remain at the "B" position, take them out to the "D" position.

8	→	"	"	"	"	"	"	"	"	2	○		
7	←	"	"	"	"	"	"	"	"	1	○		
6	→	"	"	"	"	"	"	"	"	2	○		
5	←	"	"	"	"	"	"	"	"	1	○		
4	→	"	"	"	"	"	"	"	"	2	○		
3	←	"	"	"	"	"	"	"	"	1	○		
2	→	"	"	"	"	"	"	"	"	2	○		
1	←	OC	◇	◇				◇	◇	I-I	I	○	
0	D	A	B					P	S	L	R	W	
		T		C									

Work Table 4



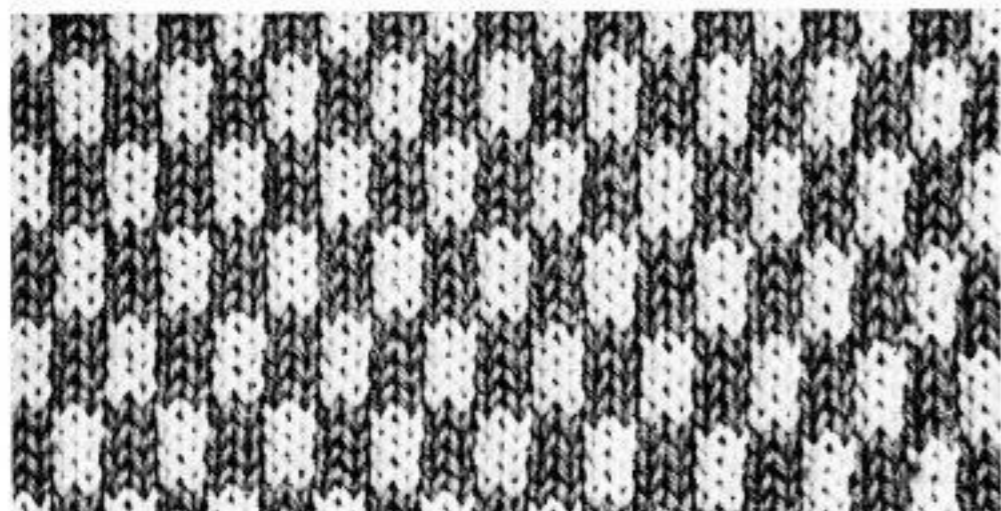






5. Color figured patterns

(1) Example 1 Color Figured Pattern



Example 1 Color Figured Pattern (Front side)

\* When selecting the needles, if both ends of the knitting needles remain at the "B" position, take them out to the "D" position.

8	↻	"	"	"	"			"	"	"	"	○		
7	↻	"	"	"	"			"	"	"	3	○		
6	↻	"	"	"	"			"	"	"	"	○		
5	↻	"	"	"	"			"	"	"	1	○		
4	↻	"	"	"	"			"	"	"	"	○		
3	↻	"	"	"	"			"	"	"	3	○		
2	↻	"	"	"	"			"	"	"	"	○		
1	↻	BC	BRC	◇	◇			◇	◇	2-2	1	○		
0	D	A	B					P	S	L	R	W		

Work Table 8

- ① Pass the original color (blue) thread on the right side of the tension and the different color (brown) thread to the left side.

The different color yarn should be hung on the tension latch and let it rest there.

Pass the original color (blue) yarn to the thread mouth A and after a little plain knitting, bring the carriage to the right side of the knitting cloth.

- ② Pass the different color (brown) thread to the thread mouth B.
- ③ Set the carriage by following the Work Table 9.
- ④ Match the slide graduation to "1" and select 2-2 needles.
- ⑤ Knit 4 rows. The original (blue) and the different color (brown) yarns will be knitted alternately every 2 stitches.
- ⑥ If the slide graduation is kept on moving according to the Table 9 and the knitting is continued, color figured patterns can be knit very easily.



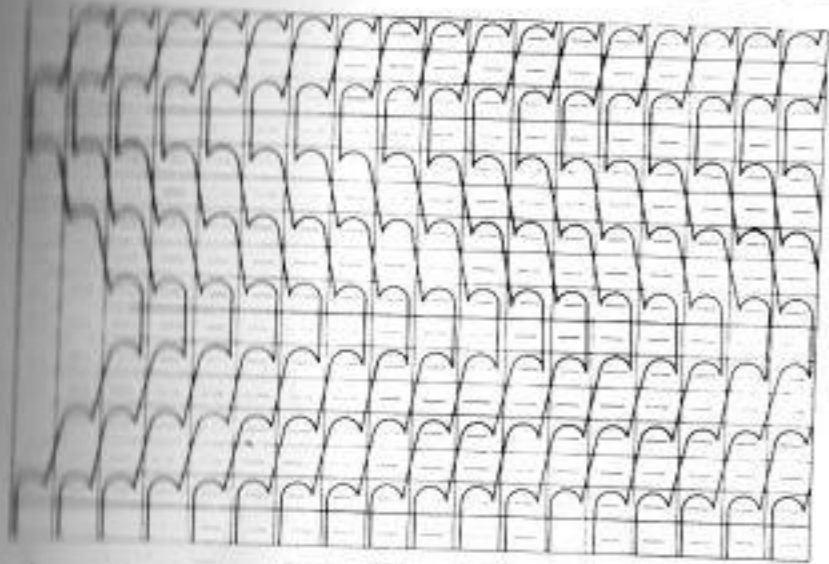
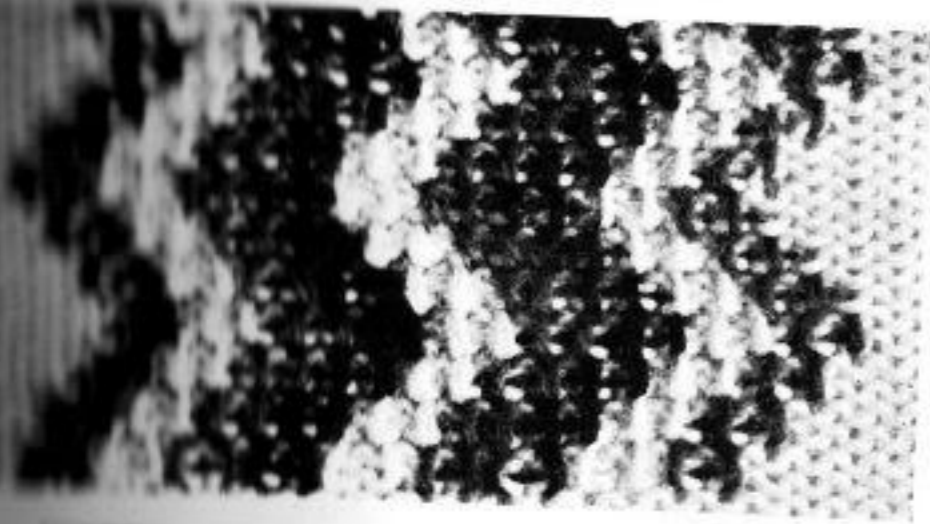








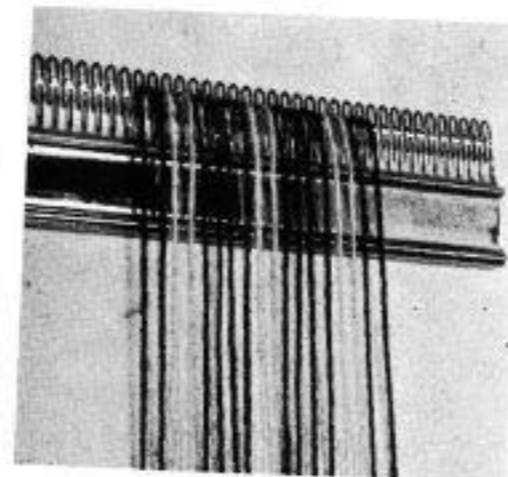
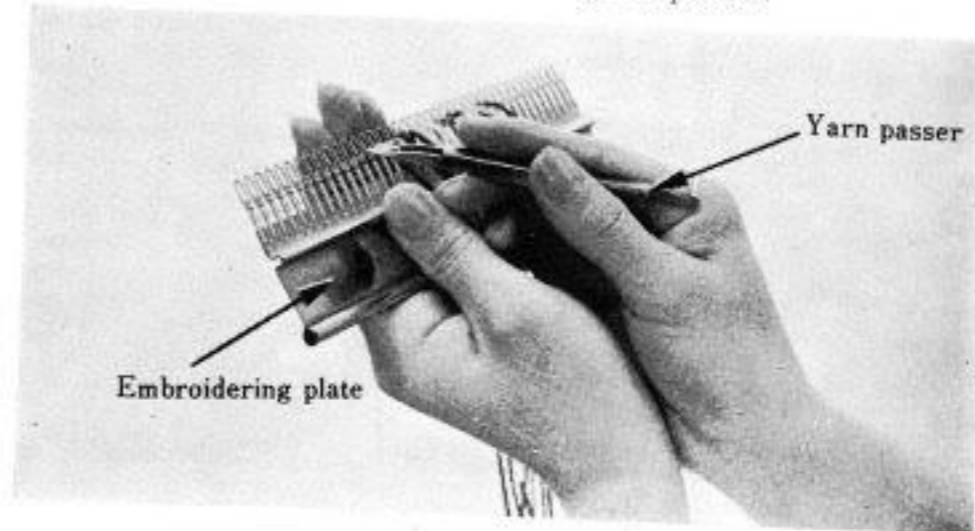
Embroider knitting (Back side)



Embroidering yarn red  
 White blue red White blue red White blue  
 x x x x x x x x

Original yarn yellow

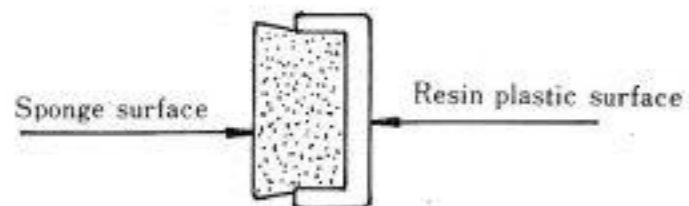
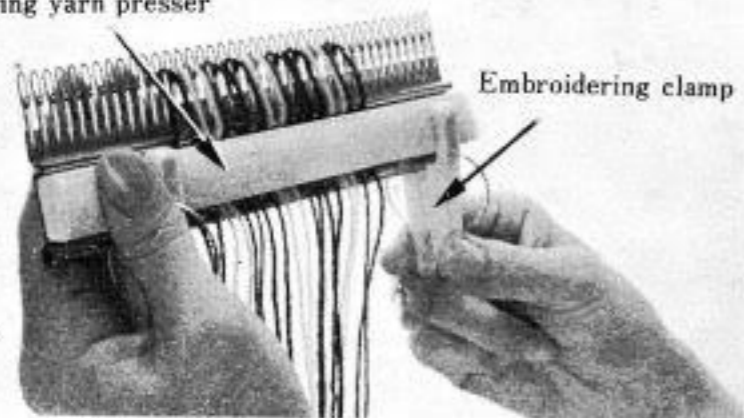
- ① Set the carriage for plain knitting.
- ② Plain knit a while with the original yarn and place the carriage to the right side of the knitting cloth.
- ③ Prepare 3 yarns each of 3 different colors (altogether 9 yarns) which are 5 times longer than the knitting height.
- ④ Pass these yarns through the needle holes of the embroidering plate by means of the yarn passer.



⑤ Press down the yarn by the embroidering yarn presser and set both ends with the embroidering clamp.

\* When the thread used is wool yarn, press it down with the resin plastic of the embroidering yarn presser and when the thread is slippery lace type, press it down with the sponge surface.

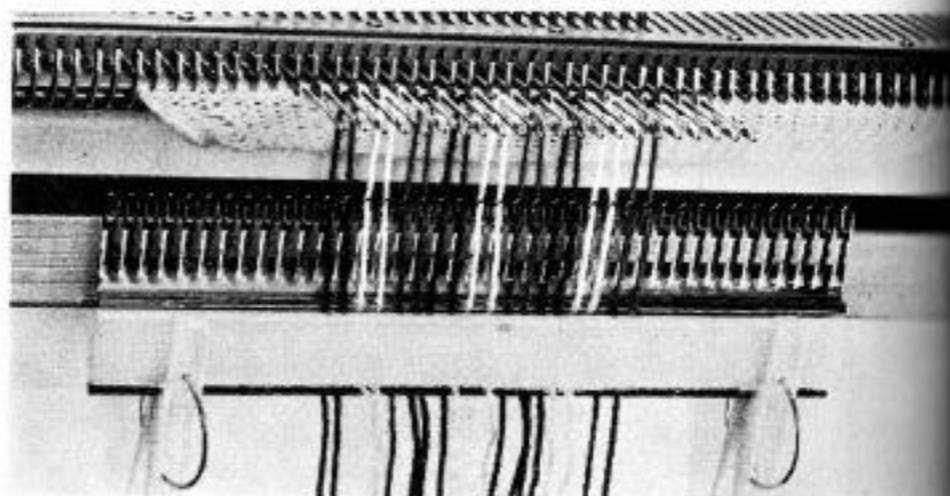
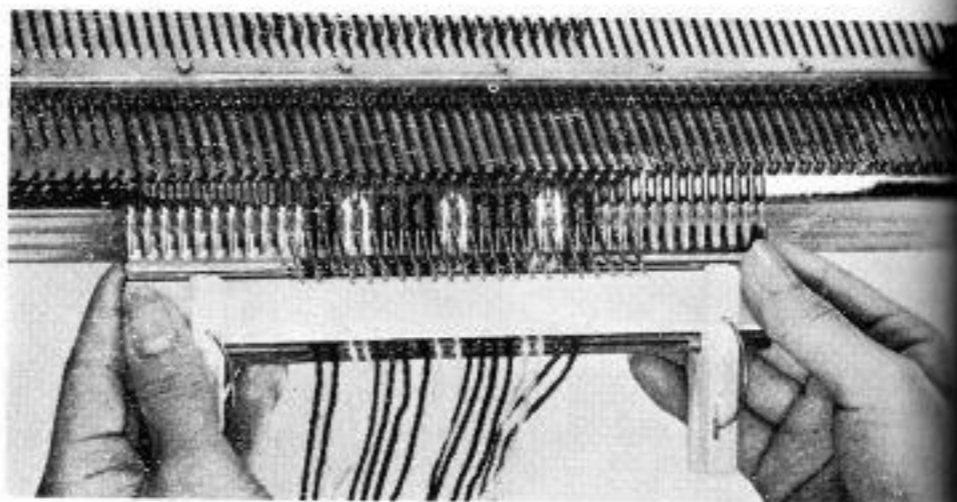
Embroidering yarn presser



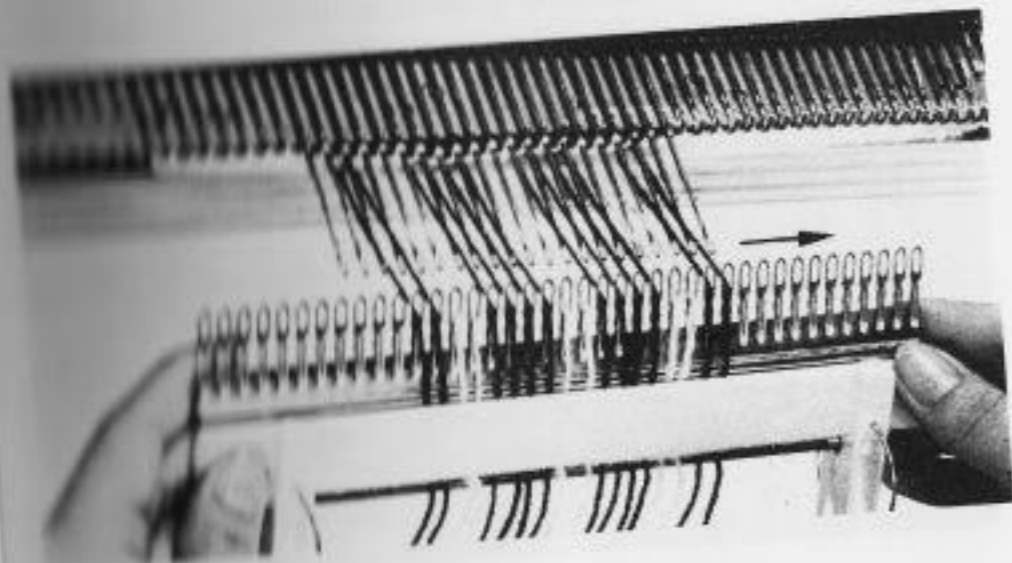
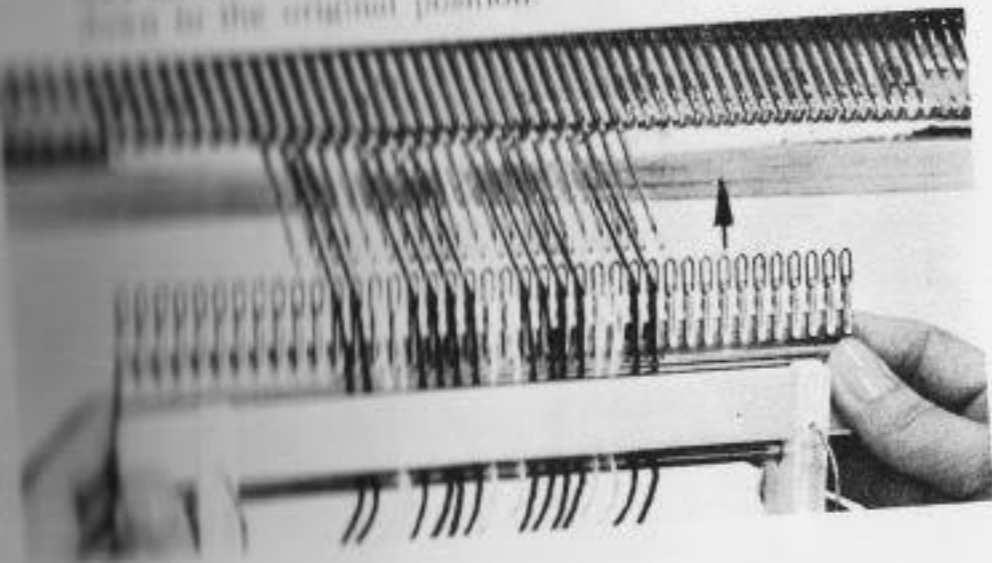
⑥ Take out 20-22 knitting needles (little more than the number of threads) of the embroidering part to the F position.

⑦ If the needles of the embroidering plate are passed through the hook of the taken out knitting needles from above, the yarn will be caught by the hook.

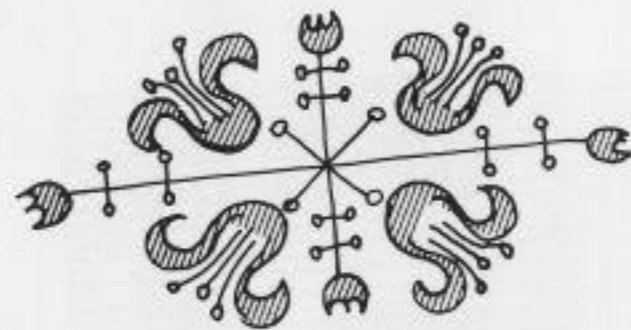
In that position, pull the embroidering plate and let the plate hang down.



⑧ Put the knitting needles a little more than the  
 embroidering threads to the F position.  
 ⑨ Lift up the embroidering plate so that the knitting yarn  
 becomes level with the knitting needles without sagging.  
 ⑩ By hanging the yarn to the respective knitting need-  
 les on the right side, let the embroidering plate hang  
 down to the original position.



- ⑪ Repeat operations ⑧ ~ ⑩ twice.
- ⑫ Repeat operations ⑧ and ⑨.
- ⑬ Lift up the embroidering plate so that the yarn becomes level with the needles, and by hanging the yarn to the respective knitting needles on the left side, let the embroidering plate hang down to the original position.
- ⑭ Repeat operations ⑫ and ⑬ twice more.
- ⑮ Repeat operations ⑧ ~ ⑭ many times and keep on knitting.

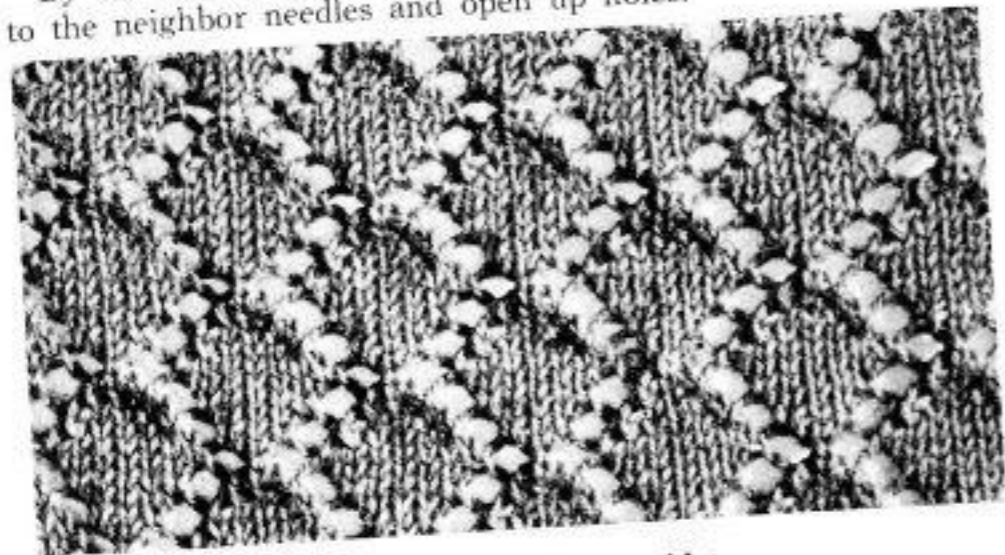




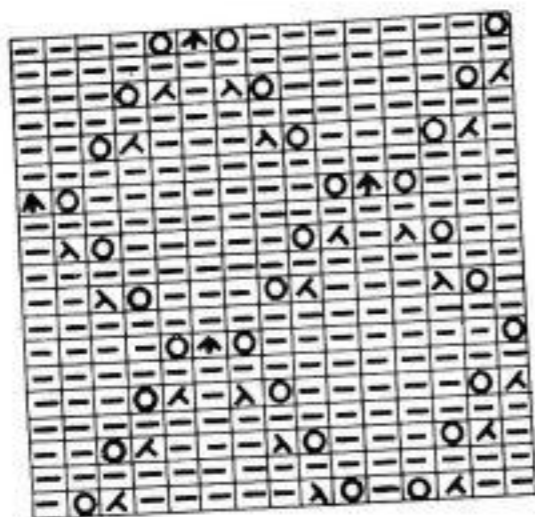
### 8. Hole pattern (Lace knitting)

This is one form of knitting by which many holes are made in the knitting cloth to produce a hole pattern effect.

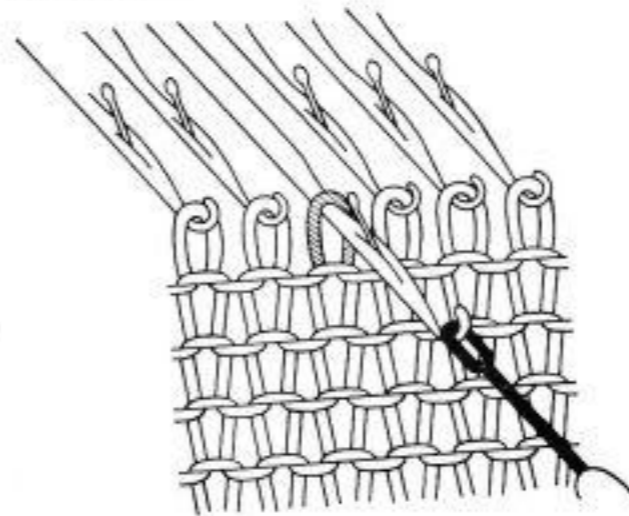
By means of transfer needles, pile up the knitting stitches to the neighbor needles and open up holes.



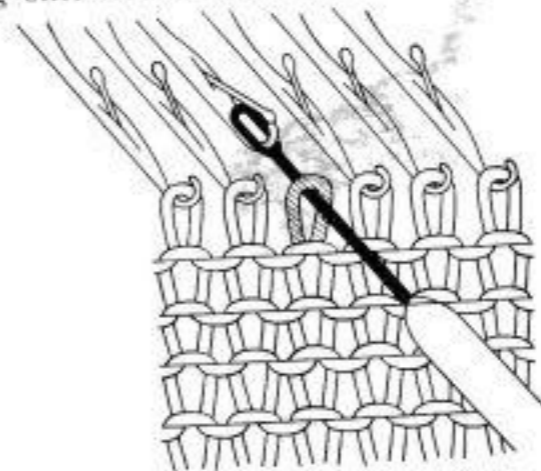
Hole pattern (Front side)



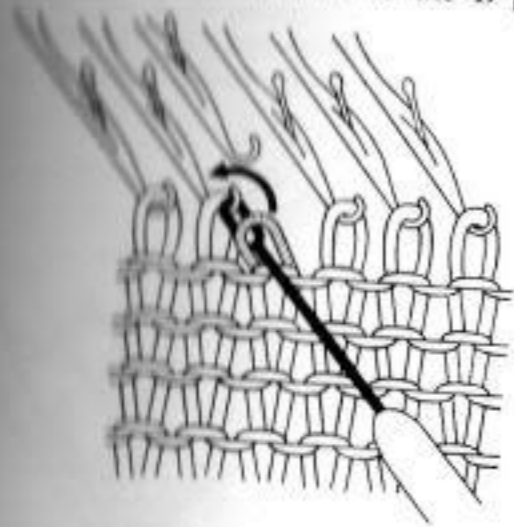
- ① Hang the hole of the transfer needle to the hook of the knitting needle, pull it towards you and transfer the knitting stitch to the rear of the latch.



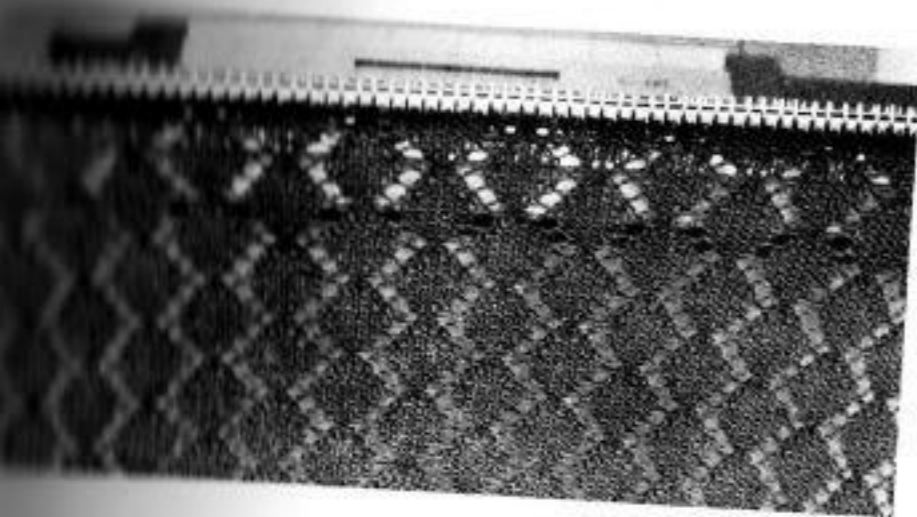
- ② If the knitting needle is pushed in reverse direction, the knitting stitches are transferred to the transfer needle.



- 2. Using the hole of the transfer needle to the hook of the transfer knitting needle and transfer the knitting stitch to the knitting needle.
- 3. Turn up all the idle needles to the B position.

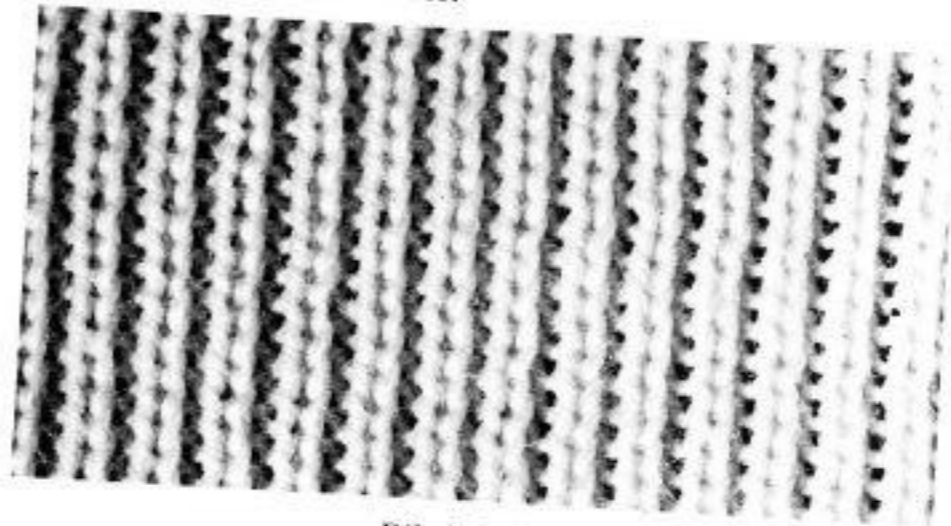


- 4. Knit one row of plain knitting. A hole will be made where the knitting stitches are transferred.



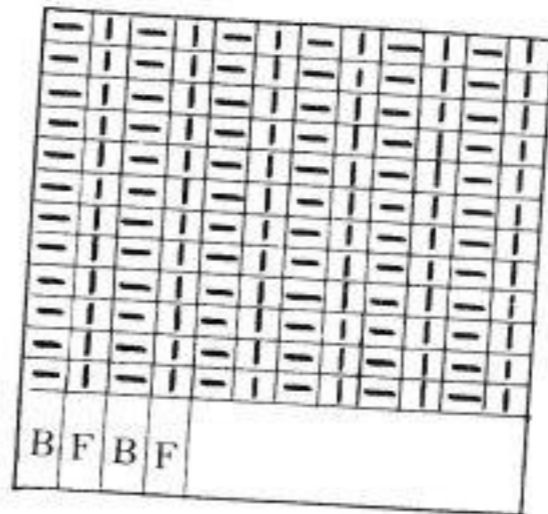
### 9. Rib knitting

This is one form of knitting by which the front side and the back side intersect each other vertically to produce an elastic quality like a rubber.



Rib knitting

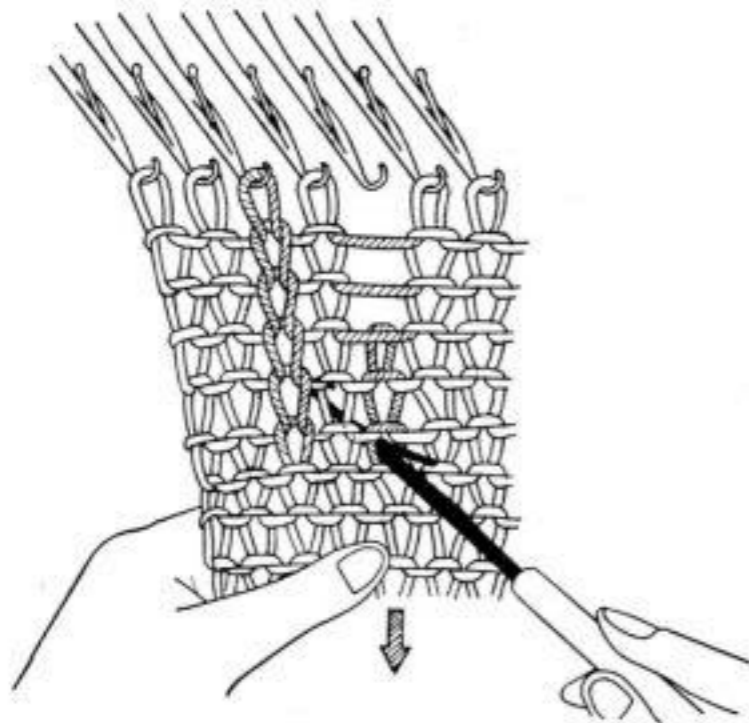
Back side .....B  
 Front side.....F



- ① Plain knit as many rows as you want to rib knit.

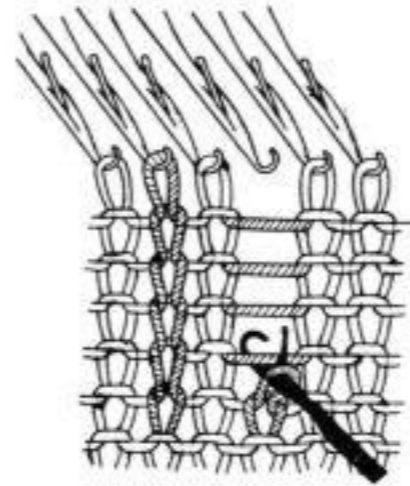
Try to knit the stitches rather hard. (When the medium fine yarn is used and the stitch adjusting dial is 5, match it to 4)

- ② Release the knitting stitches to be ribbed from the needle and change the stitches toward front and loosen about 3 rows toward front.  
③ Insert a latch needle tool to the lowest row of changed stitches and pull it downwards. The knitting stitches will be loosened to the latch needle tool position.

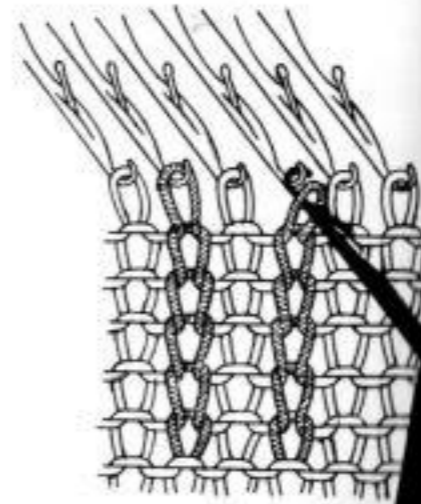


- ④ As you pull the latch needle tool sticking to the outside, hang the horizontal yarn of the upper row to the hook.  
⑤ Then if the latch tool is pulled forward, you can loosen one stitch.

Repeat this process over and knit the number of rows loosened by the latch needle tool.



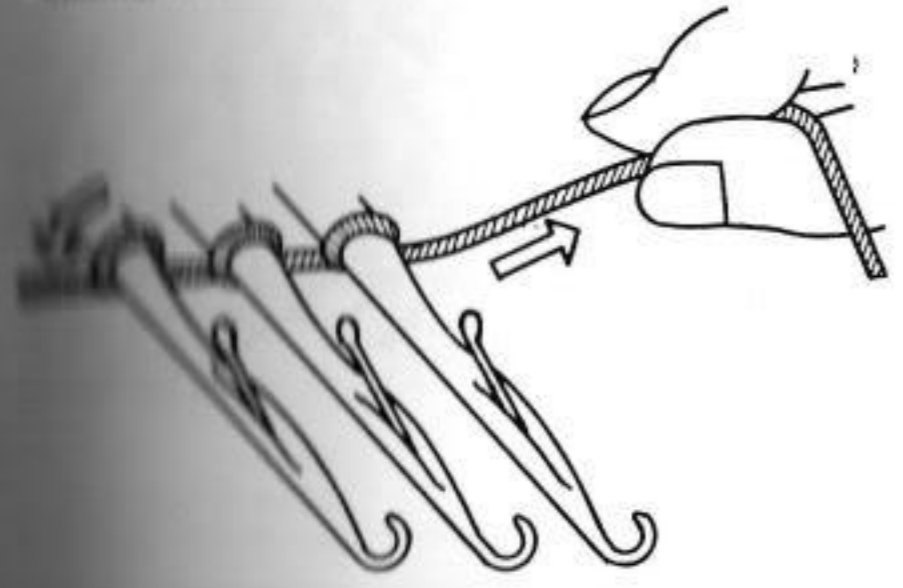
- ⑥ Slide the last stitch behind the latch (over the latch) and by hanging the hook of the latch needle tool to the hook of the knitting needle, transfer the knitting stitch to the knitting needle.



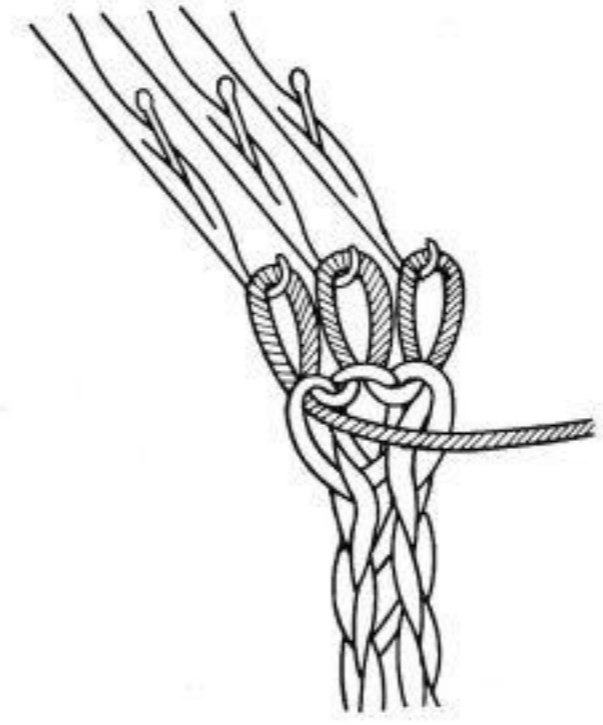
### 18. Cord knitting

This is one form of knitting to knit cord for cape, hood,

- ① Depending on the size of the cord, take out few knitting needles to the F position.
- ② Wind the knitting yarn of the thread mouth around the knitting needles.



- ③ Push the auxiliary cam button of the right side.
- ④ Push the carriage to right and left.  
When the carriage is pushed to left, it will knit but it will not knit when moved to right, thus cord is knitted.
- \* 1. If the thread tip is pressed down for the first 5~6 rows, it will be simpler.
- \* 2. If the knit adjusting dial graduator figure is lessened than the standard, the knitting job becomes prettier.

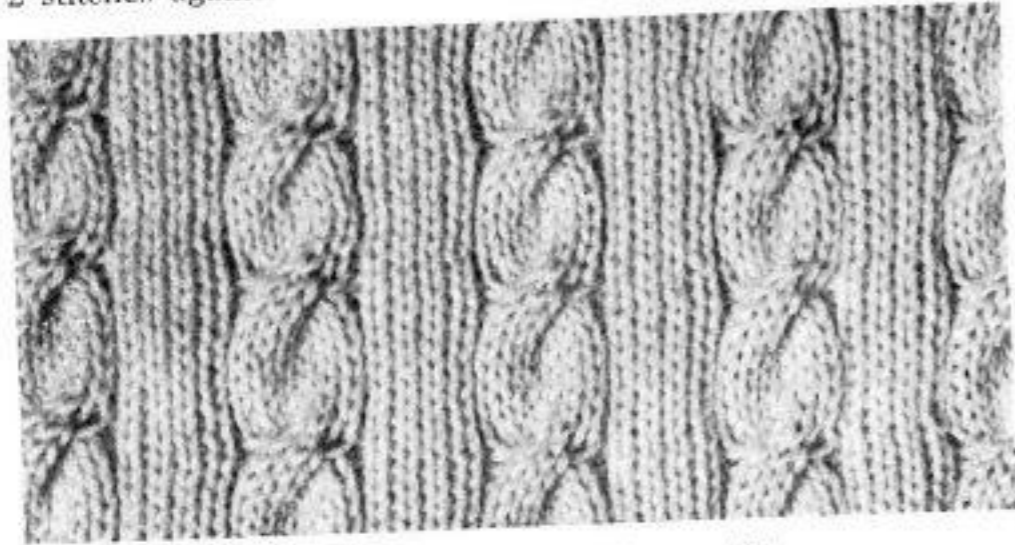




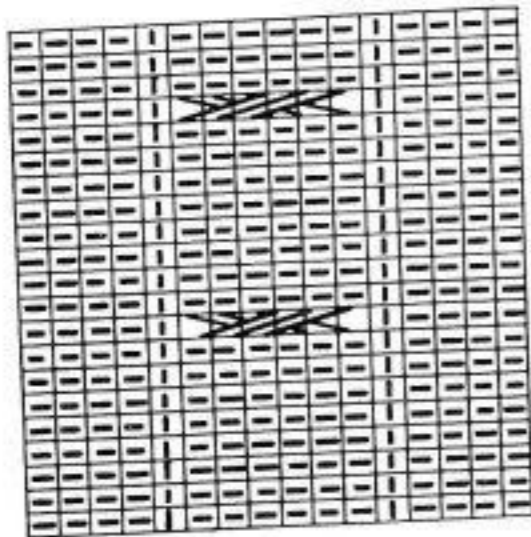
### 11. Intersecting pattern (rope pattern)

This is one form of knitting by which the knitting stitches are intersected each other.

The stitches to be intersected are 1 stitch against 1 stitch, 2 stitches against 2 stitches, 3 stitches against 3 stitches, etc.



Intersecting pattern (Front side)

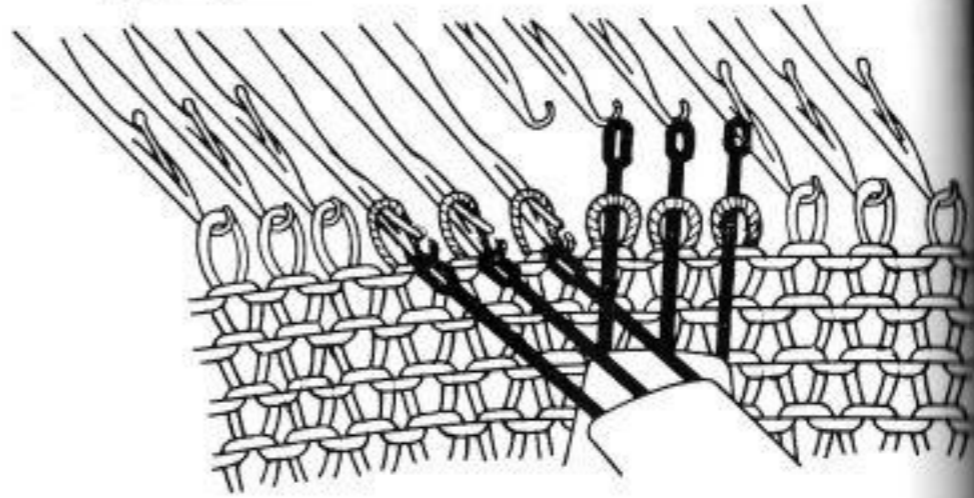


When 3 stitches are to be intersected:

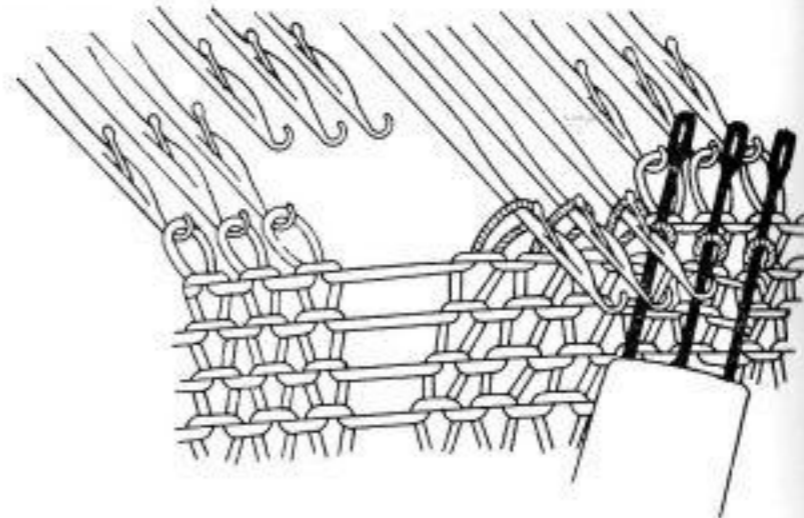
① Use 2 transfer stitches of the 3rd stitch.

Pick up 3 intersecting stitches to 2 transfer needles.

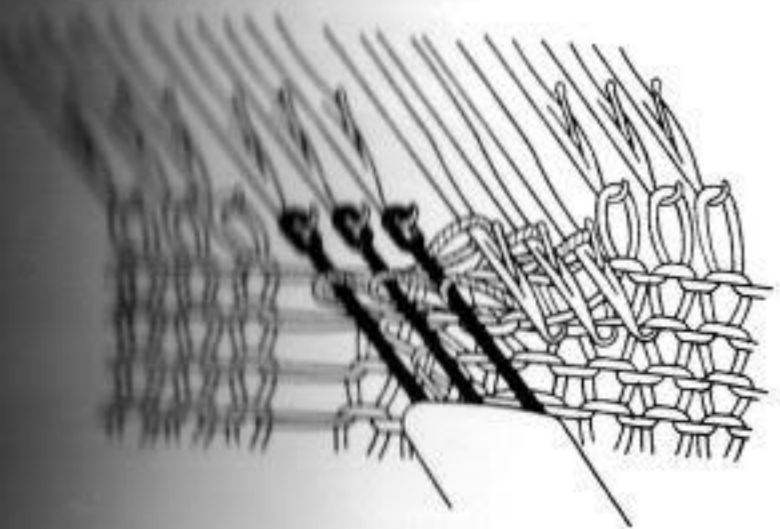
\* Be sure the transfer needles are erect to support the knitting stitches from slipping out.



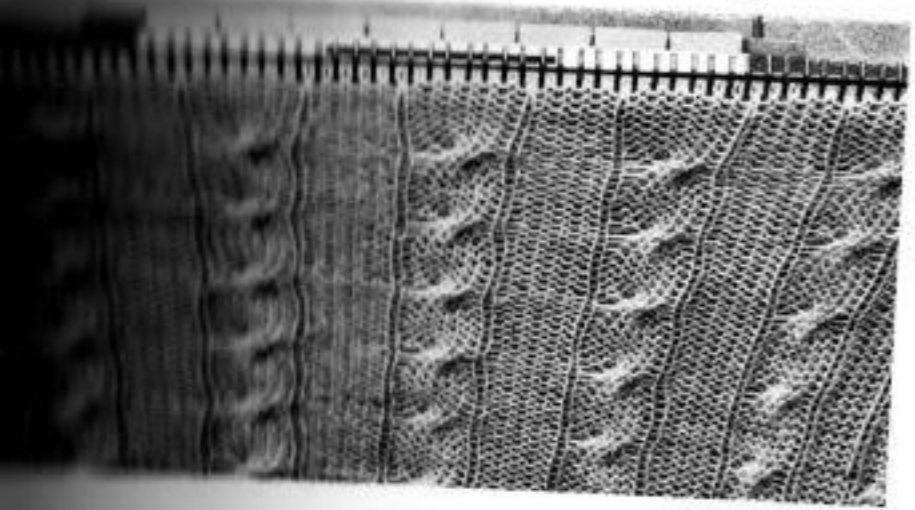
② Intersect the transferred stitches and transfer one side the idle needles.



After interlocking the other knitting stitch, hang it on the needle.

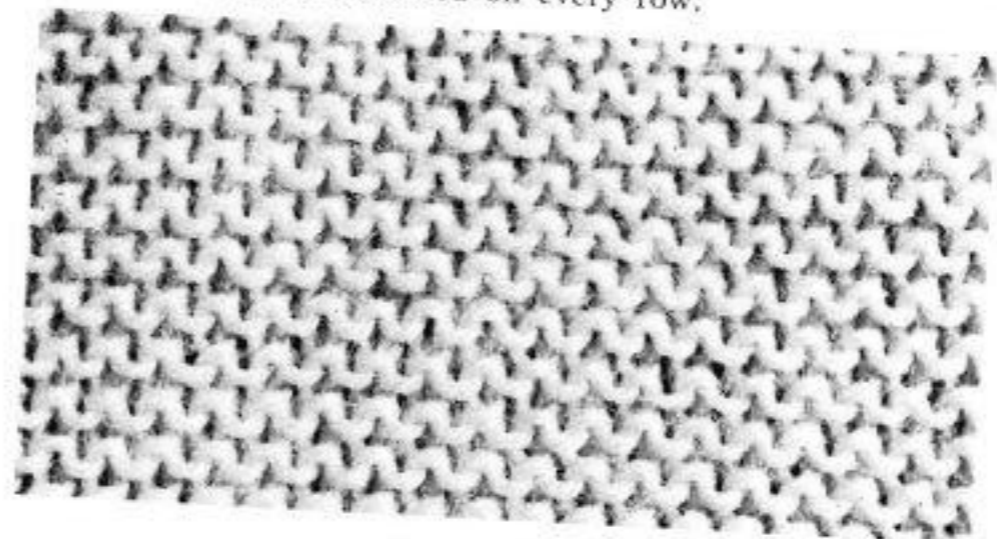


After knit 10 rows, repeat the operations and keep on knitting.

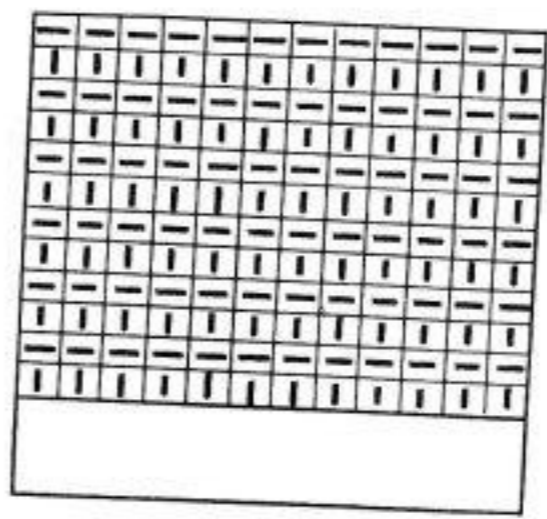


### 12. Garter knitting

This is one form of knitting by which the front side and the back side is intersected on every row.



Garter knitting



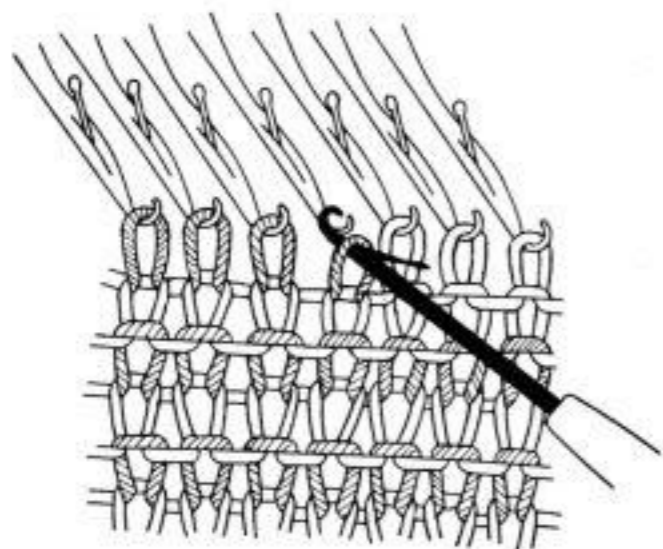
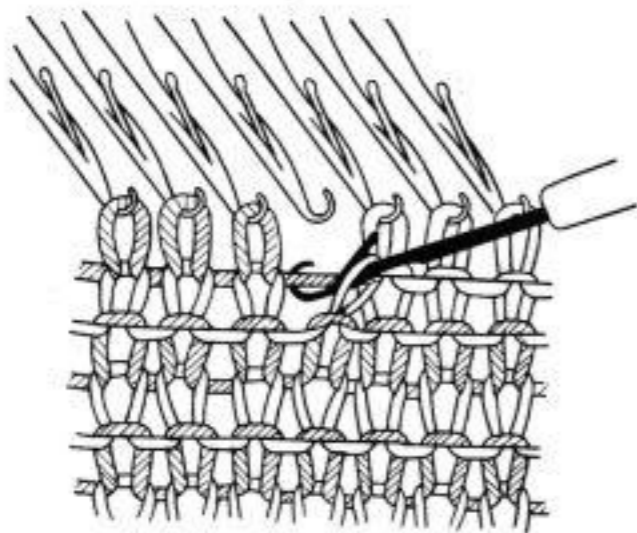
(1) When latch needle tool is used

① Plain knit 2 rows.

② Open up all the latches of the knitting needles.

③ With the latch tool, change the 2nd row stitches to face front.

④ Repeat operations ①~③.



(2) When embroidering plate is used.

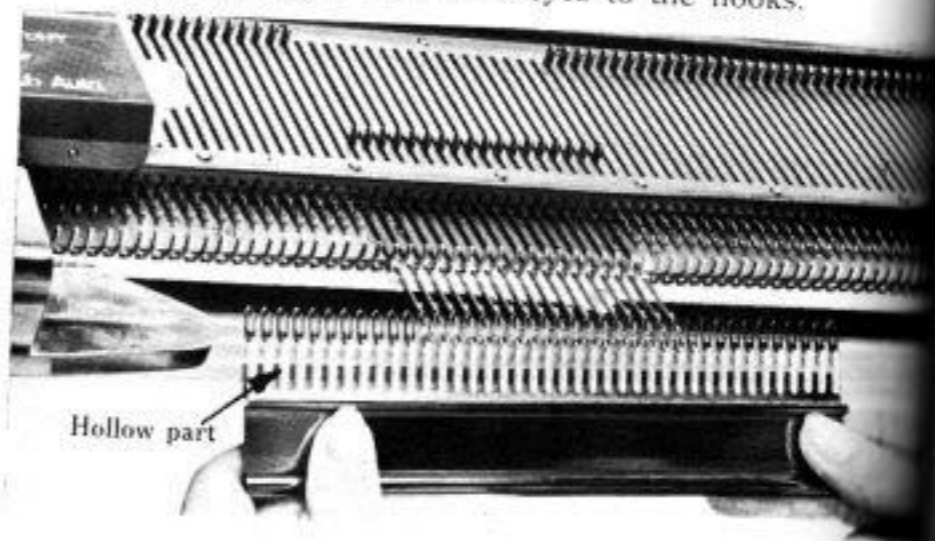
When knitting narrow strip of cloth such as frontal part etc. use embroidering plate to make the job easier.

① Plain knit a while and place the carriage to the right side of the knitting material.

② Push the left auxiliary cam button and move the carriage idly to the left side.

③ Press down the knitting cloth and take out all the knitting needles to the F position.

④ Open up all the latches of the knitting needles and placing the hollow part of the embroidering plate facing upwards, hang the needle eyes to the hooks.



③ Pull the knitting cloth forward and transfer it to the embroidering plate.

The loops of the knitting cloth should be placed to the root of the needle groove of the embroidering plate.



④ Remove the embroidering plate from the hook and turn it over both right and left sides.

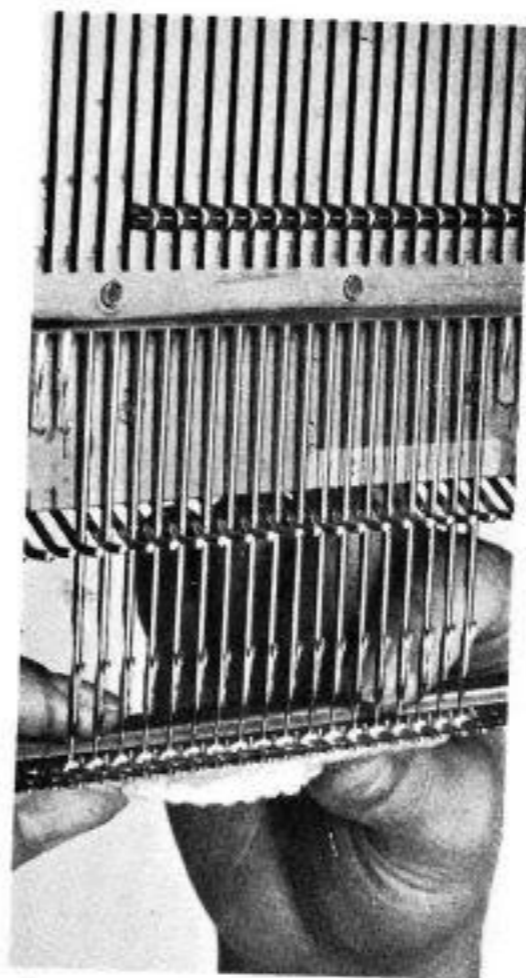
The hollow part of the needle root will face downwards.

⑤ Open up all the latches of the knitting needles and by holding the embroidering plate horizontally, place the needle eyes right above the tip of the latch and press it lightly against the hook.



⑥ In that position, pull the embroidering plate towards you. When the pulling gets heavy, tilt the embroidering plate vertically and you can see if the knitting stitches are transferred to the hooks.

When the knitting stitches are all transferred, pull out the embroidering plate diagonally downwards.



⑦ Plain knit 2 rows and repeat operations ③~⑧.

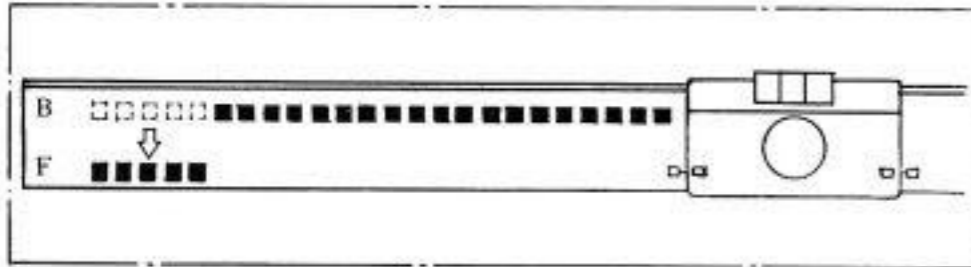


## ❖ V. RETURNING OF THE PATTERN KNITTING

When knitting curved or slanting parts such as shoulder puffs, sleeve mounds etc. it is necessary to return the pattern knitting.

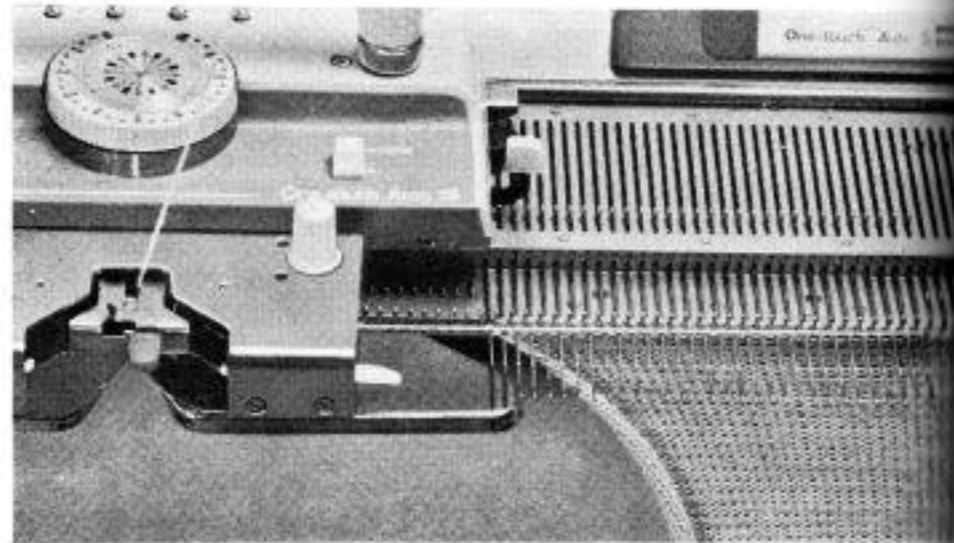
1. When decreasing the knitting parts (returning of the unfinished knit part)

- ① Take out the knitting needles on the idle knitting part opposite the carriage side to the F position.

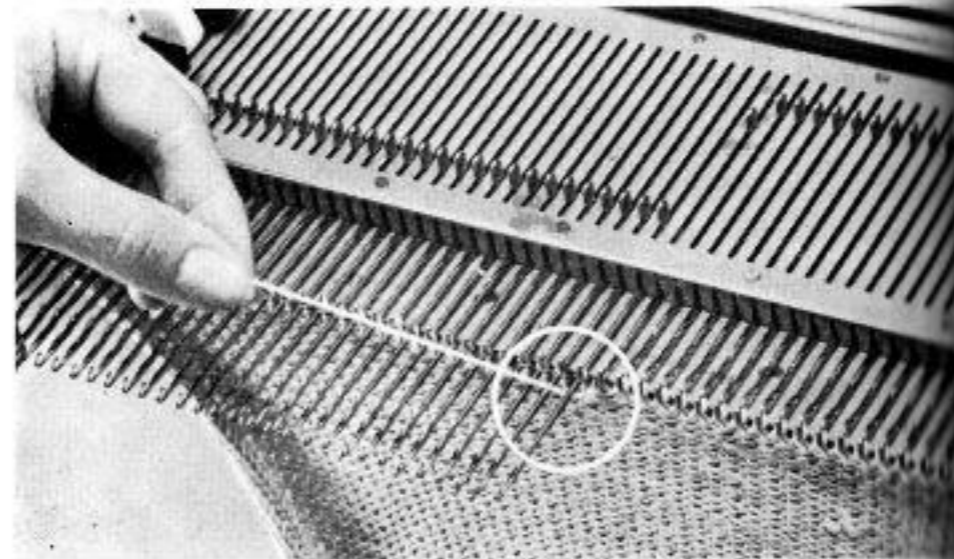


- ② Match the returning levers of the carriage, both right and left, with the □ mark.

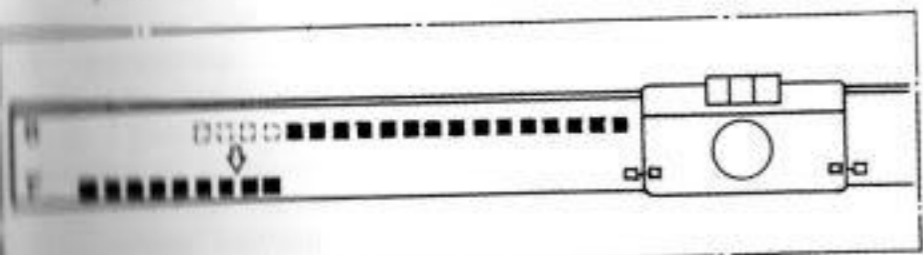
- ③ Knit one row. Only the needles at the B position will knit and the knitting yarn will go over to the top of the stem of the knitting needles at the F position.



- ④ Hang the knitting yarn to the knitting needle next to the last knitting needle from underside.



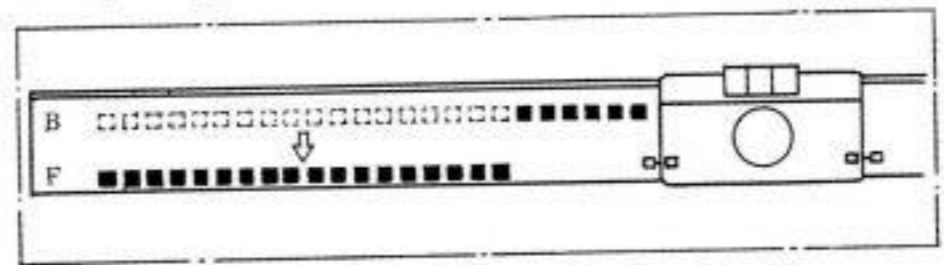
- ⑤ Return the carriage and knit one row.
- ⑥ By increasing the needles of the idle parts (F position), repeat operations ①~⑤.
- \* The number of needles to be taken out to the F position varies according to the curves and slants of the knitting product.



- ⑦ After the returning is ended, match the pull-up knob in the moving direction of the carriage and the returning lever with the  $\diamond$  mark and knit one row. (All the needles at the F position will knit and come together at the B position)
- \* By merely matching the returning lever with the  $\square$  mark, all returning knittings of pull-up patterns, tuck patterns, different threads patterns or slip-stitch patterns can be produced just as in the case of returning of plain knitting.

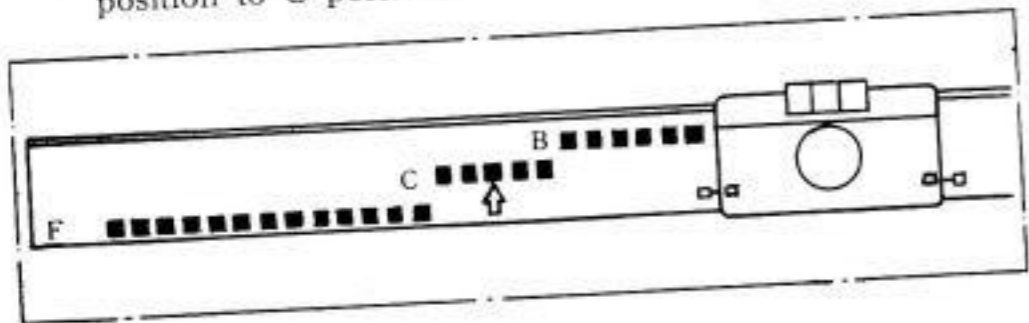
2. Increasing the knitting part (returning of knitting progress)

- ① Take out all the knitting needles on the idle knitting part opposite the carriage side to the F position.



- ② Match the returning levers of the carriage, both right and left, with the  $\square$  mark.
- ③ Knit one row.
- ④ Hang the knitting yarn to the knitting needle next to the last needle from underside.
- ⑤ Return the carriage and knit one row.

⑥ Next, return all the needles on the knitting part from F position to C position.



⑦ By repeating the operations ③~⑥, keep on knitting.  
At the last stage, all the knitting needles will line up together at the B position.

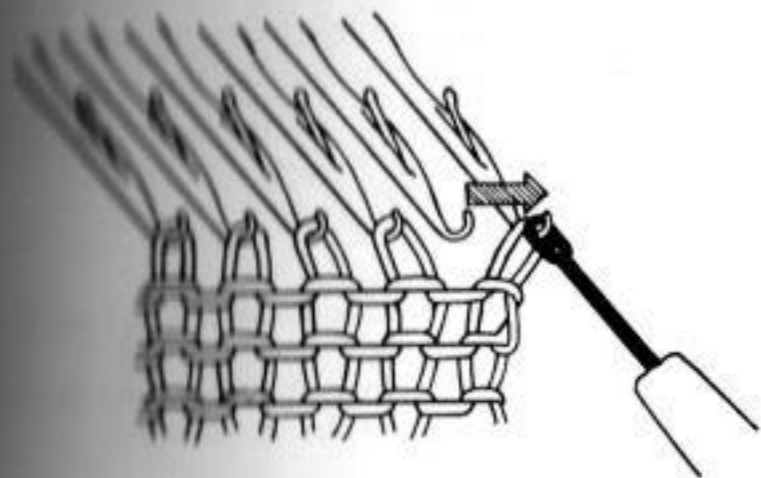
\* By merely matching the returning lever with the □ mark, all returning knittings of pull-up patterns, tuck patterns, different threads patterns or slip-stitch patterns can be produced just as in the case of returning of plain knitting.



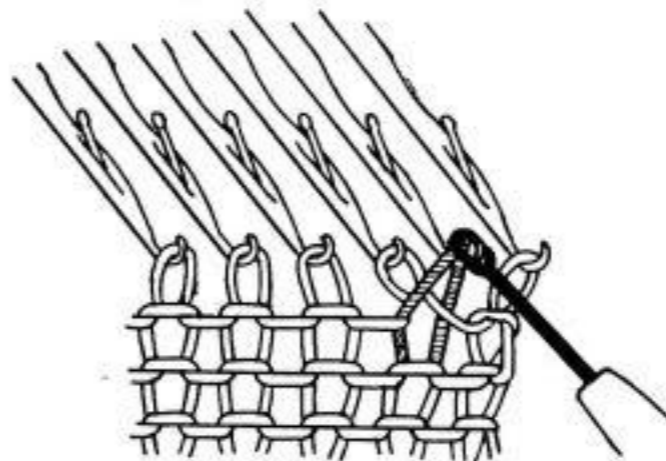
## VI. INCREASING AND DECREASING THE STITCHES

During the process of knitting, it becomes necessary to widen or narrowing the knitting width. To widen the knitting width, increase the stitches and to narrow the width, decrease the stitches.

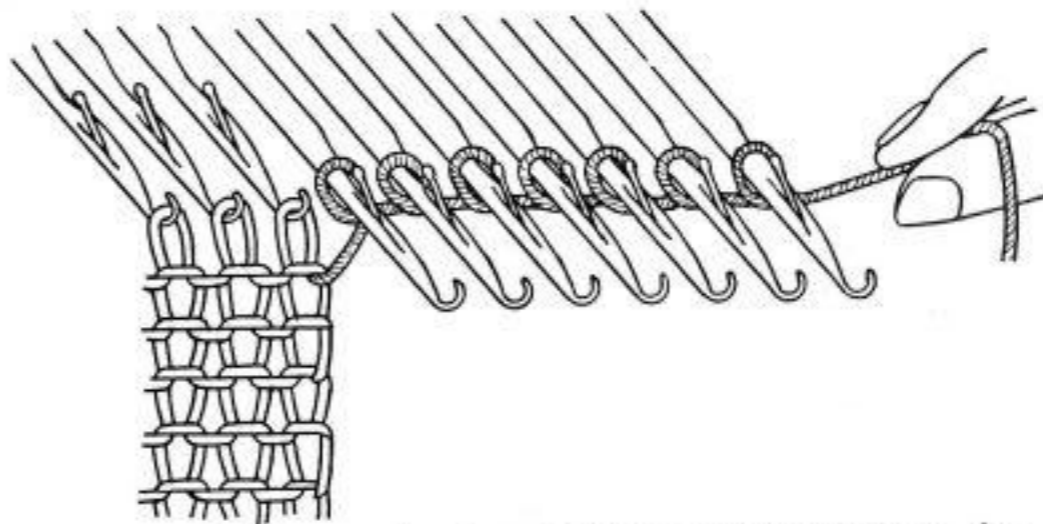
**Increasing**  
 For each increase  
 Place one needle on the side to be increased from A to B position.  
 Use one transfer needle and transfer to the knitting needle along knitting edge came out.



- ③ Scoop up the rear side of the 3rd needle from the edge with the transfer needle and hang it on the idle needle, 2nd from the edge.



- (2) Over 2 stitches increase (increasing by rolling stitch)  
 Place the carriage on the side to be increased.  
 ① Take out the needles to be increased to the F position and do rolling stitch.



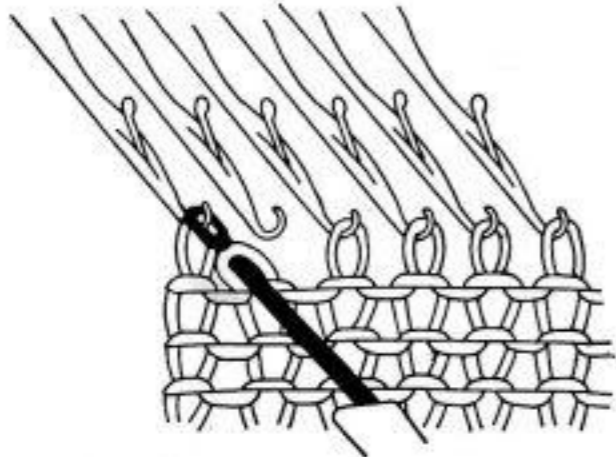
- ② Match the returning lever and the pull-up knob on the carriage moving direction with the  $\diamond$  mark and knit on row.  
 ③ Take out the roll stitched needles to the F position, again. Repeat operations ② and ③ and knit 4~5 rows.



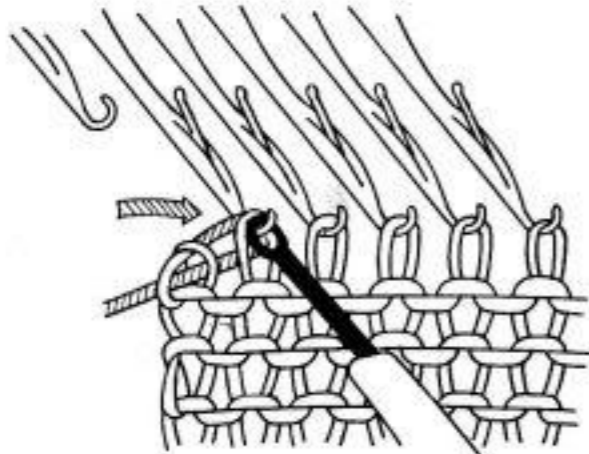
## 2. Decreasing

### (1) One stitch decrease

- ① Use one-stitch transfer needle, pick up the 2nd stitch from the end and in that position, transfer the edge stitch at the same time.



- ② Hang the 2 stitches together to the 2nd needle.

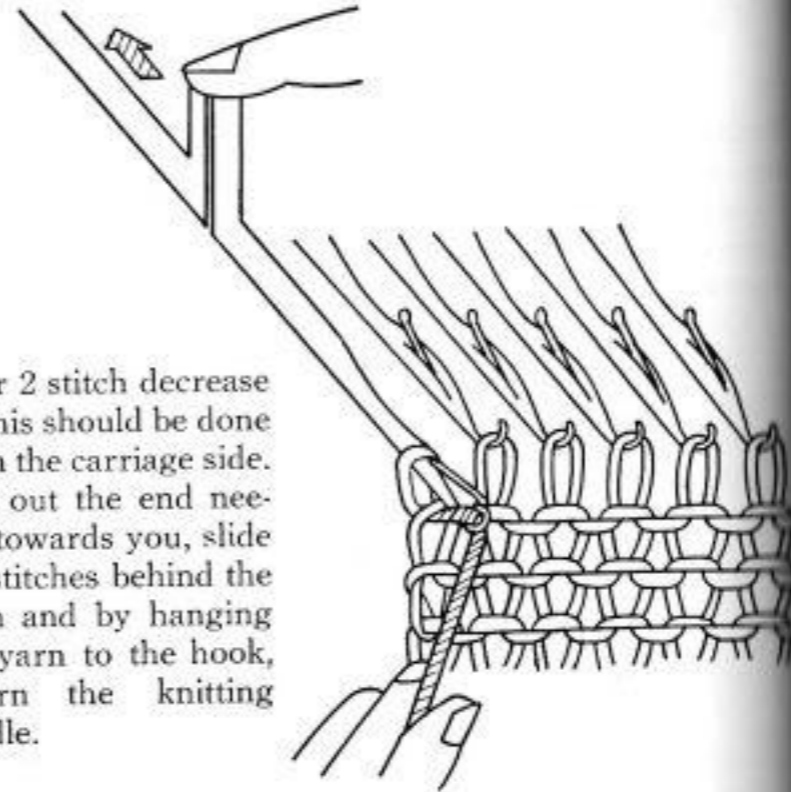


- ③ Return the idle needle at the end to the A position.

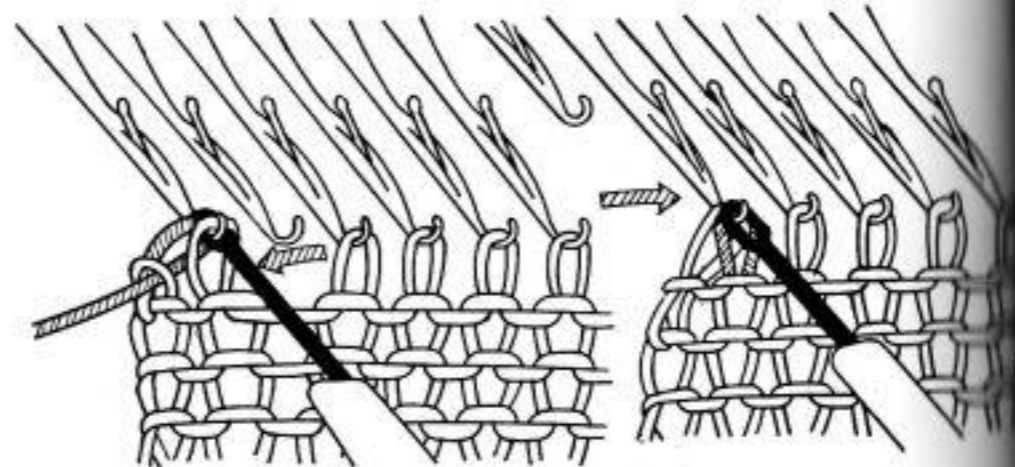
### (2) Over 2 stitch decrease

This should be done from the carriage side.

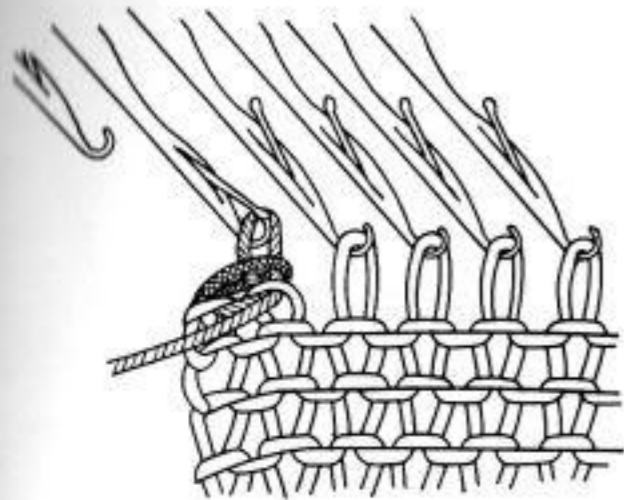
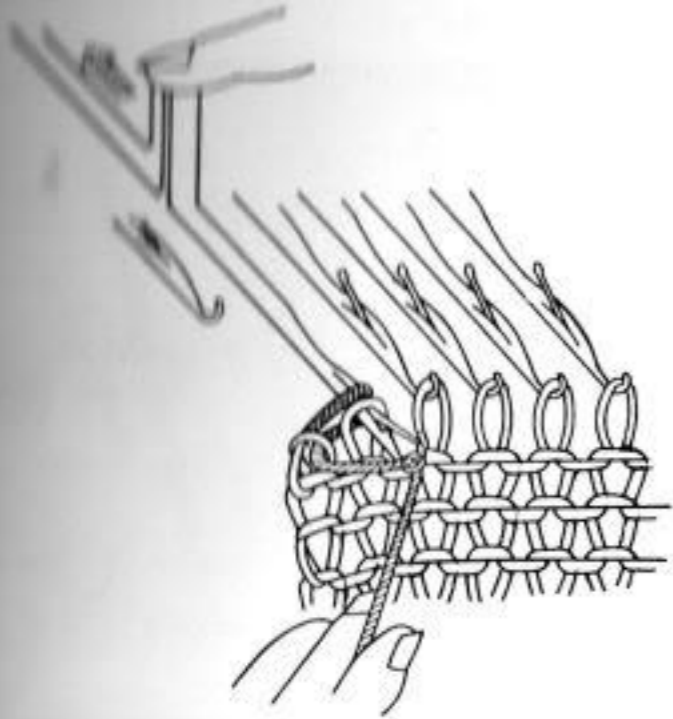
- ① Pull out the end needle towards you, slide the stitches behind the latch and by hanging the yarn to the hook, return the knitting needle.



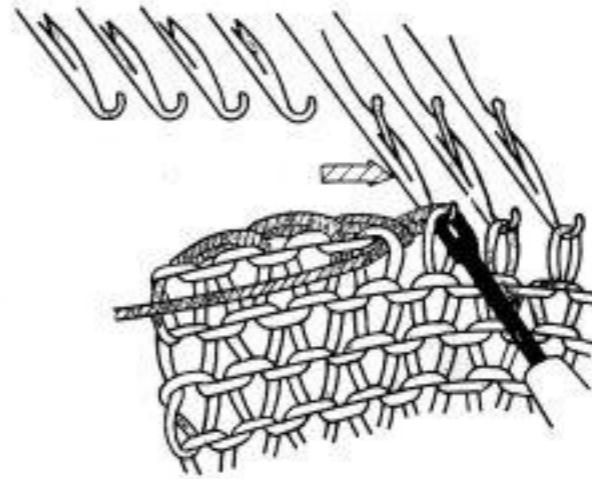
- ② Use one-stitch transfer needle, move the 2nd stitch to the end stitch and pile them up.
- ③ Transfer the piled up stitches at the end to the 2nd needle. Return the idle needles to the A position.



- ④ Take out these needles forward, slip the piled up stitches behind the latches, hang the yarn to the hook and return the needles.



- ⑤ Repeat this operation until the 2nd stitch from the last stitch to be decreased and pile up the last stitch to the neighbor needle.



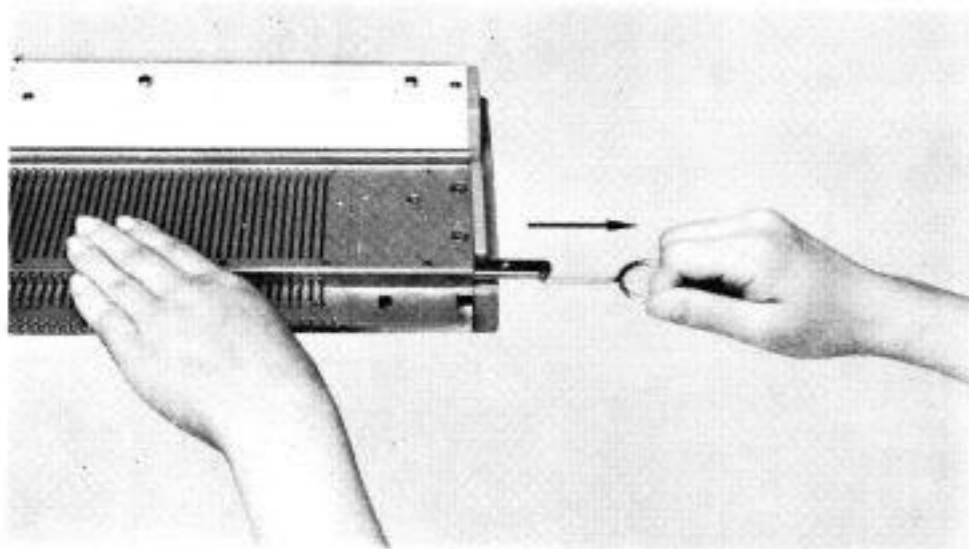
- ⑥ Knit one row with the carriage.

## ❏ VII. WHAT TO DO WHEN FOLLOWING TROUBLES OCCUR

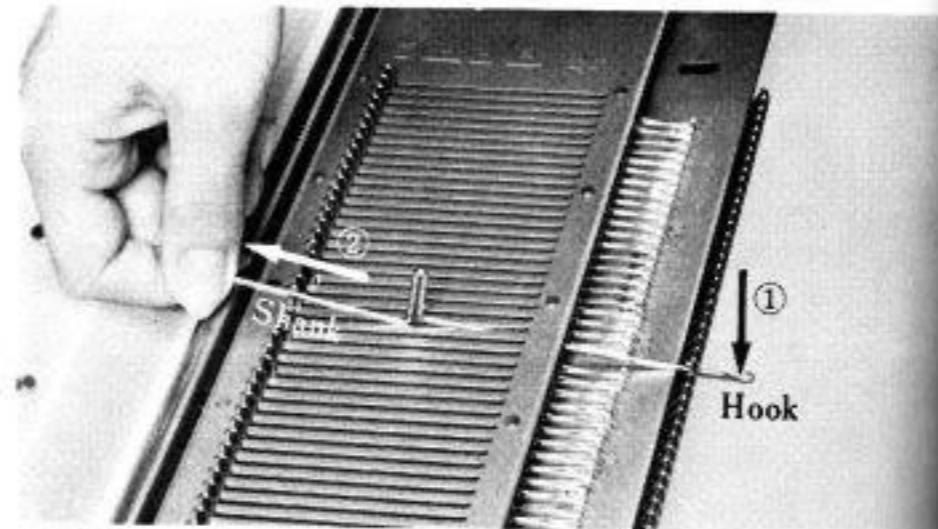
### 1. When the knitting needles are damaged

When the knitting needles are curved or the latches are damaged, replace them in the following order:

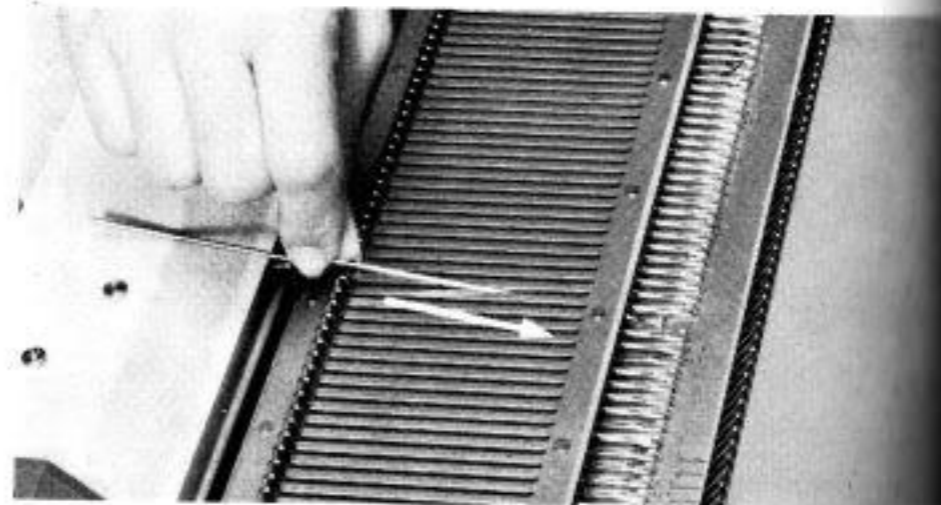
- ① Catch the needle stopper puller to the needle stopper, which can be seen at both ends of the groove plate, and pull it to the position where the knitting needle is to be changed.



- ② Pull the knitting needle forward (toward the operator) to the limit and if the hook is pushed downwards, the rear end of the needle comes on top of the groove.
- ③ Lift up the shank and pull it to the rear and the knitting needle can be pulled out.

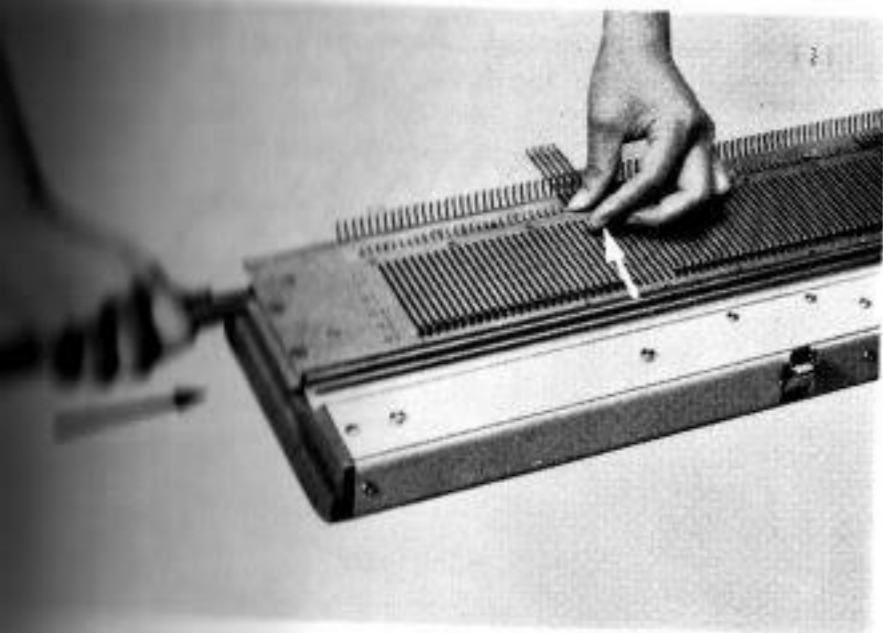


- ④ Insert the new knitting needle to the groove from the hook side.



\* (Note) Insert all the needles so that there will be open grooves.

When all the needles are inserted, insert the needle  
into the original position.  
Push the needle stopper fully while pulling it forward  
to the needle butt.



## 2. When the carriage movement is heavy

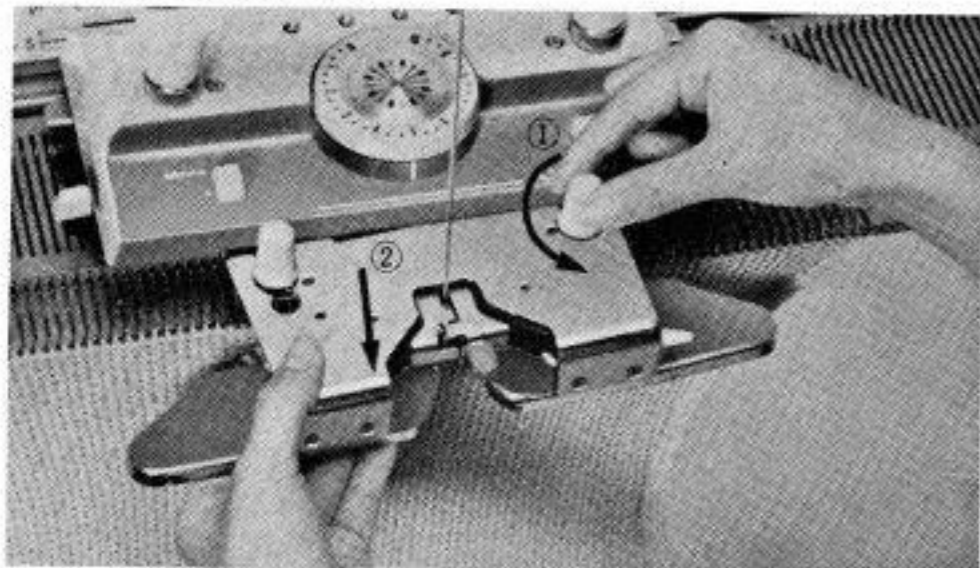
- (1) If the stitch adjusting dial graduation is not matched with the knitting yarn, correct the dial graduation in consonance with the yarn.
- (2) If the rotating brush or the roller has entangling thread hards to impede their functions, remove all thread hards and make the roller to rotate lightly and smoothly.
- (3) When the lubricating oil is depleted

Follow instructions contained in the chapter on CARE AND MAINTENANCE OF THE MACHINE and lubricate the machine thoroughly.

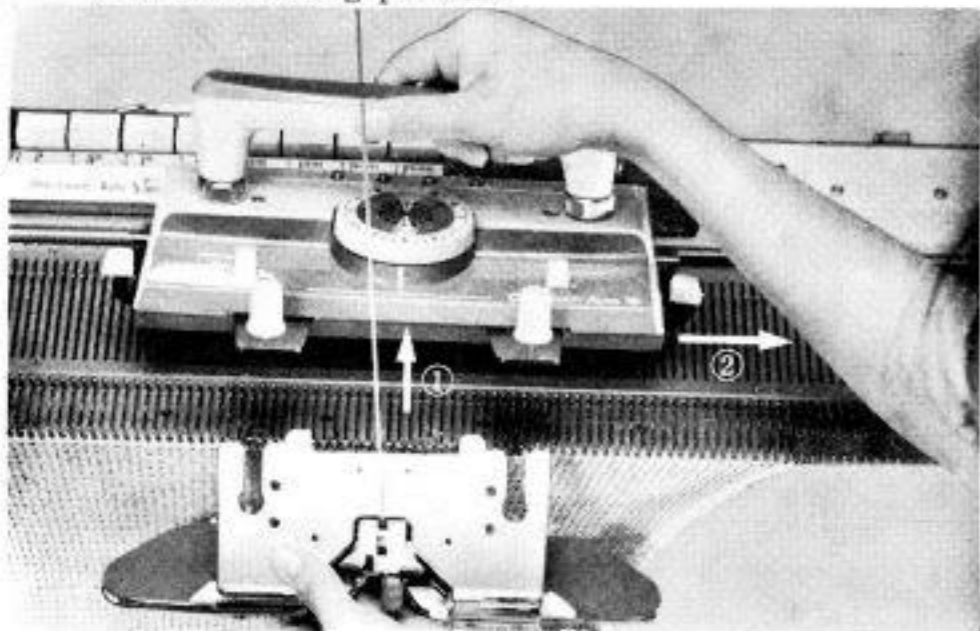


### 3. When the carriage does not move

- ① Loosen the knob of the machine arm and release the material presser.

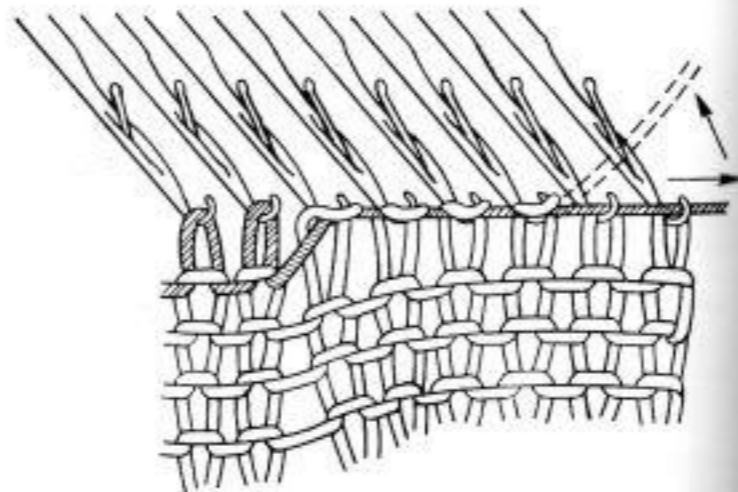


- ② Inactivate the row counter bar and by lifting the front side of the carriage a little way, return the carriage to the original knitting position. When the carriage starts to move again, activate the row counter bar by bringing it to the working position.



- ③ Put back the material presser.
- ④ Unloosen the knitted stitches which were knitted in the wrong way.

(When the knitting yarn at the end of knitting is pulled up and pulled sideways, the stitches will be squeezed together and look like one thread. Next, pull up the yarn and to release it from the hook, and one row will be loosened.)

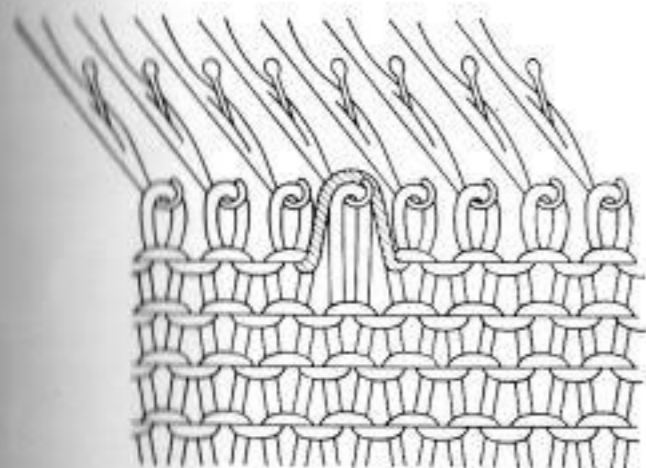


- ⑤ When the row counter has moved, return it one row.
- ⑥ Then, pull in the loosened yarn under the knitting tension guide of the tension.

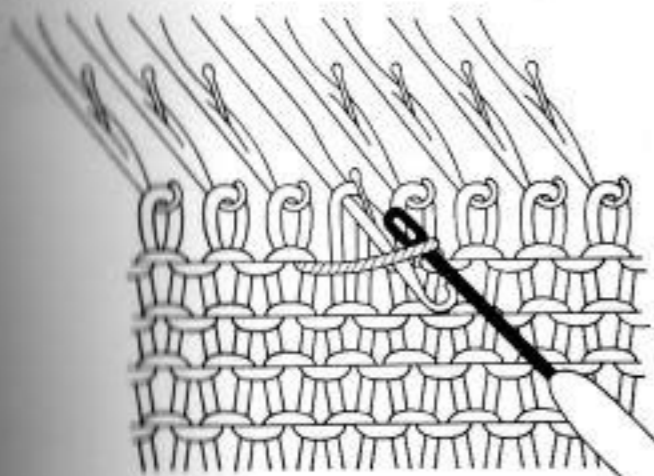
### When the stitches slip off

(1) When one row is slipped off

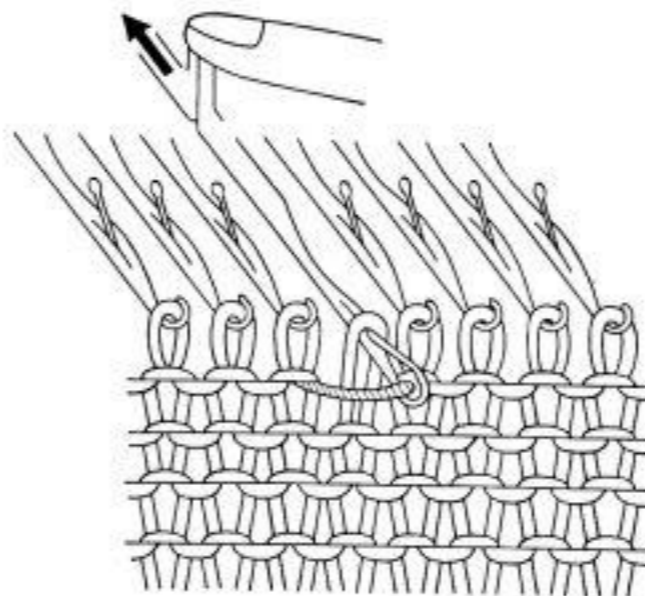
Pass the one stitch transfer needle through the stitch one row under the slipped off stitch and hang it to the hook of the knitting needle together with the upper horizontal yarn.



Then, bring out this knitting needle forward, slip the stitch behind the latch and leave the horizontal yarn at the center of the hook.

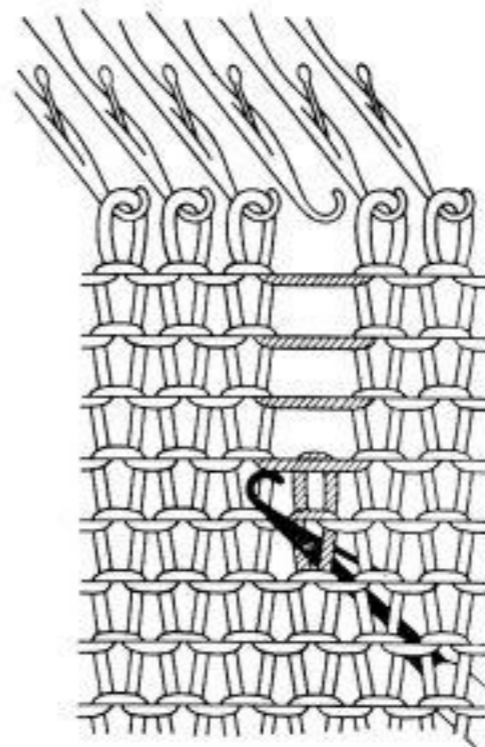


(3) Return the knitting needle to the B position.



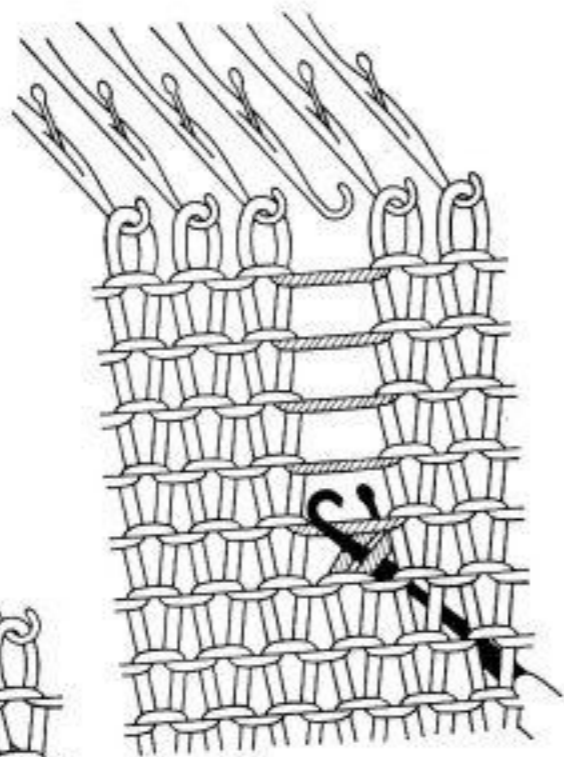
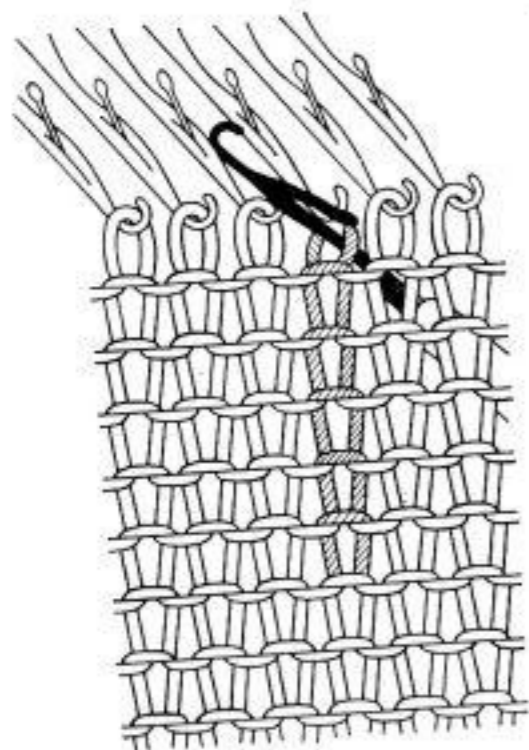
(2) When more than 2 rows slipped off

(1) Pass the latch needle tool through the stitch one row under the slipped off stitch from under the knitting material and lightly pull it. (One more row will be slipped off).

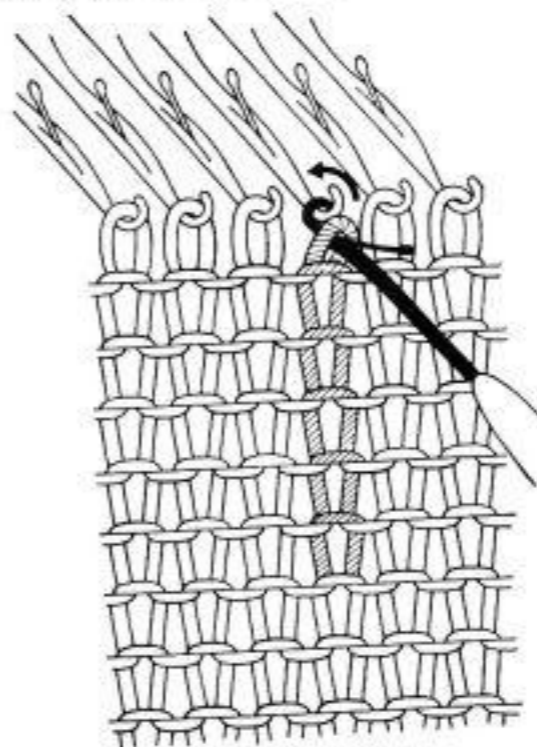


- ② Take out the latch needle tool forward, slide the scooped up stitch behind the latch and hang the yarn just above it to the hook.
- ③ Pull in the latch needle tool.

- ④ Repeat operations ② ~ ③ and knit to the top row.



- ⑤ Pull out the latch needle tool from the last stitch, scoop up the stitch from front with the latch needle tool and hang it to the knitting needle hook.



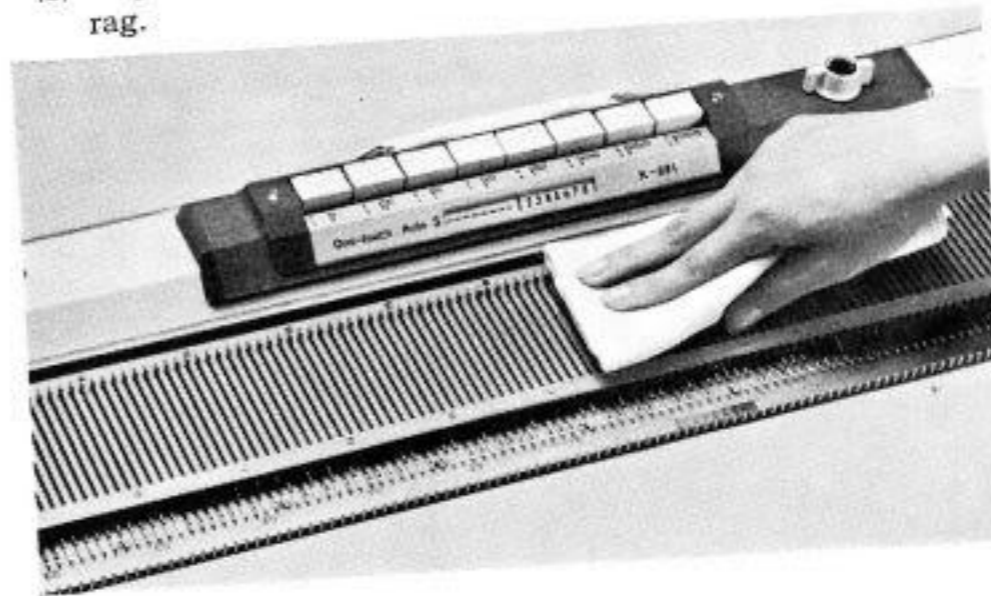
5. When the thread of the threader yarn easily slides, remove the threader and inspect if the thread brushes lightly.
- If the brush does not turn lightly, some thread has stuck in it, so remove them and make it turn lightly.

## VIII. CARE AND MAINTENANCE OF THE MACHINE

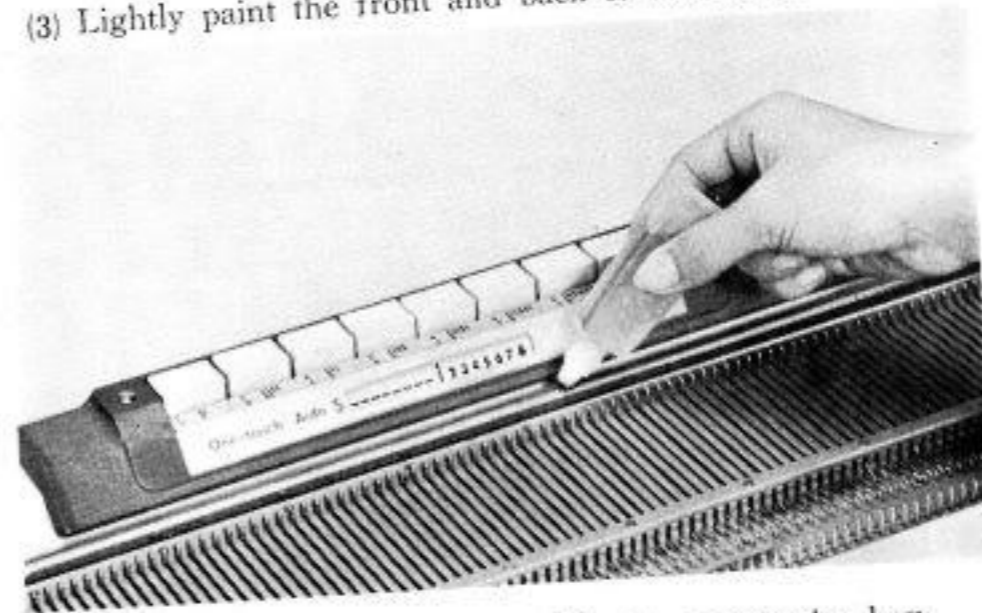
To operate the machine in good condition, the machine must be properly cared for and maintained. If the type gets heavy or foreign matter sticks to the machine, use the brush in the accessories box and remove all dirt and dust.



(2) Wipe away all dust and grit from the area with a clean rag.



(3) Lightly paint the front and back rail with clean oil.



\* Be sure to use only the oil in the accessories box. If the oiler is pushed lightly, the oil will ooze out from the brush at its tip.

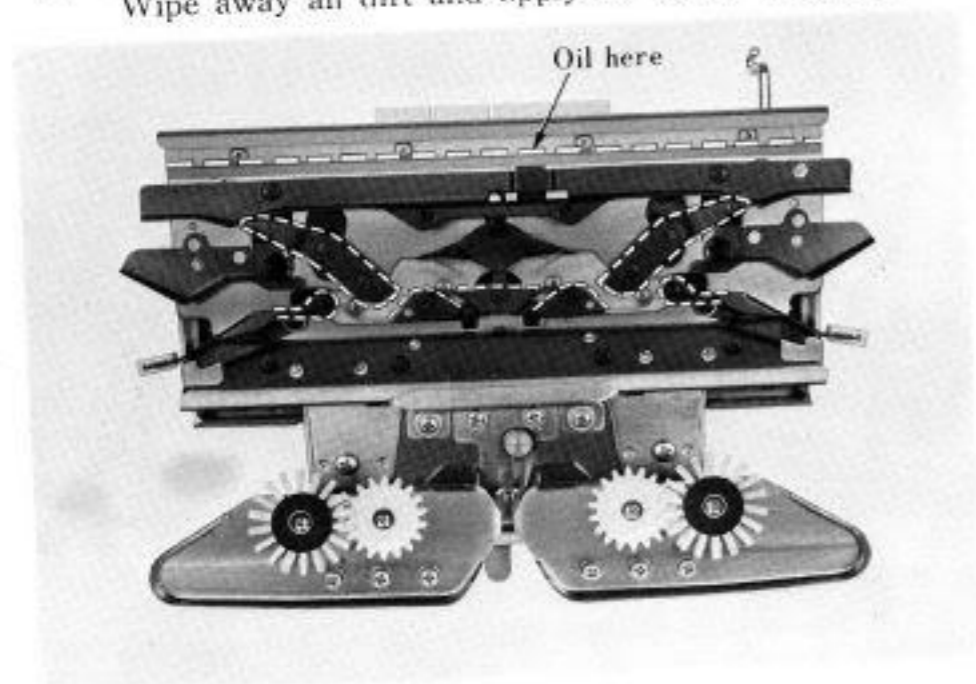


(4) The groove of the groove plate and the butts of the knitting needles should be thoroughly oiled with oil dripping cloth.

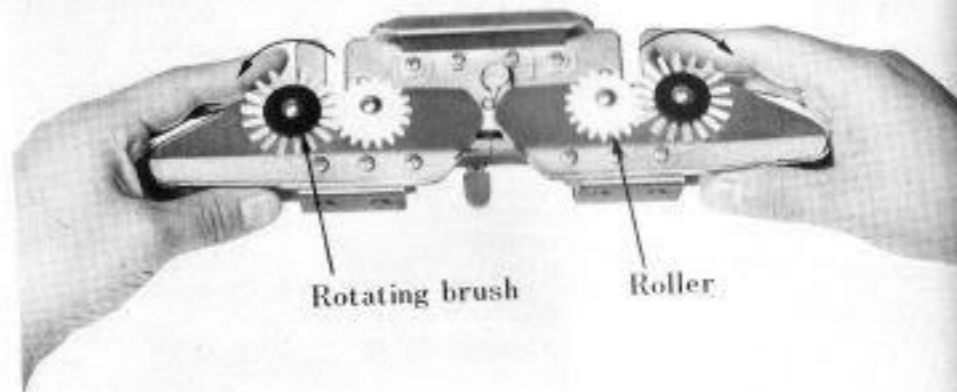
\* Do not apply too much oil to the grooved part or the knitting needles.



(5) Back side of the carriage  
Wipe away all dirt and apply oil to the lined spots.



(6) Checking the rotating brush and the roller  
Remove all thread hards and make the rotating brush and the roller to rotate lightly.

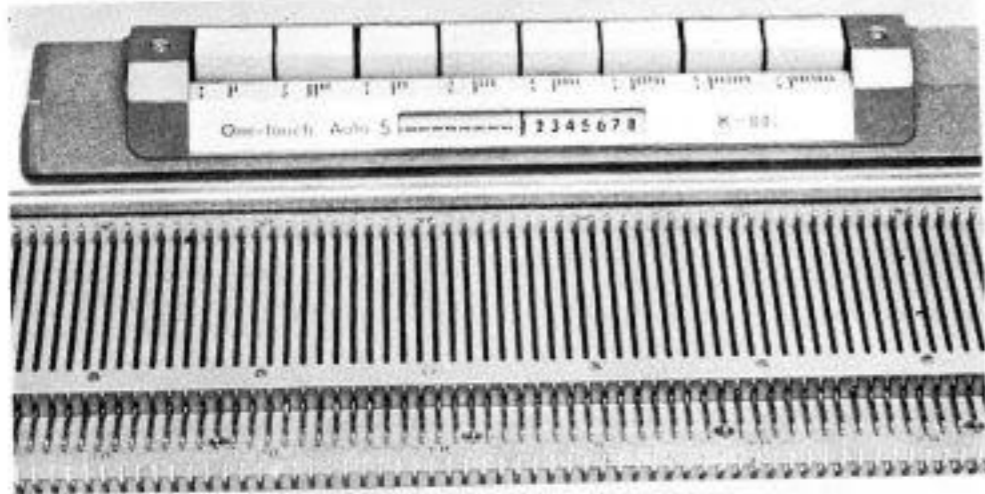


(7) Maintenance

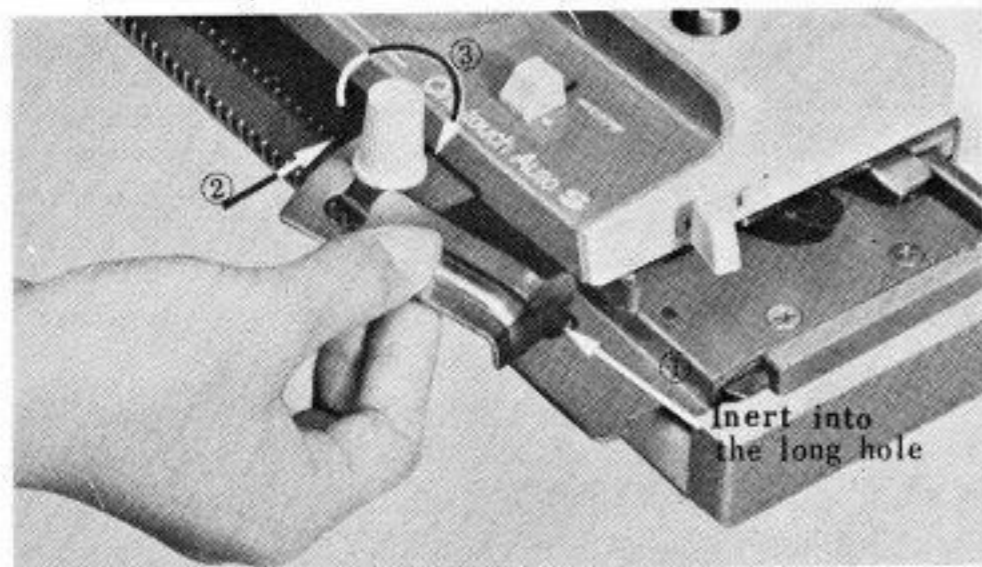
- ① All metal parts should be thoroughly wiped and cleaned with a clean cloth and then with a oil-soaked cloth, wipe them well.
- ② When the case gets dirty, wipe it thoroughly with a cloth soaked with some neutral cleaning agent.  
(Do not use thinner, benzene or gasoline)
- ③ Store it away in dry, humid-less quarters.

## IX. HOW TO STORE AWAY THE MACHINE

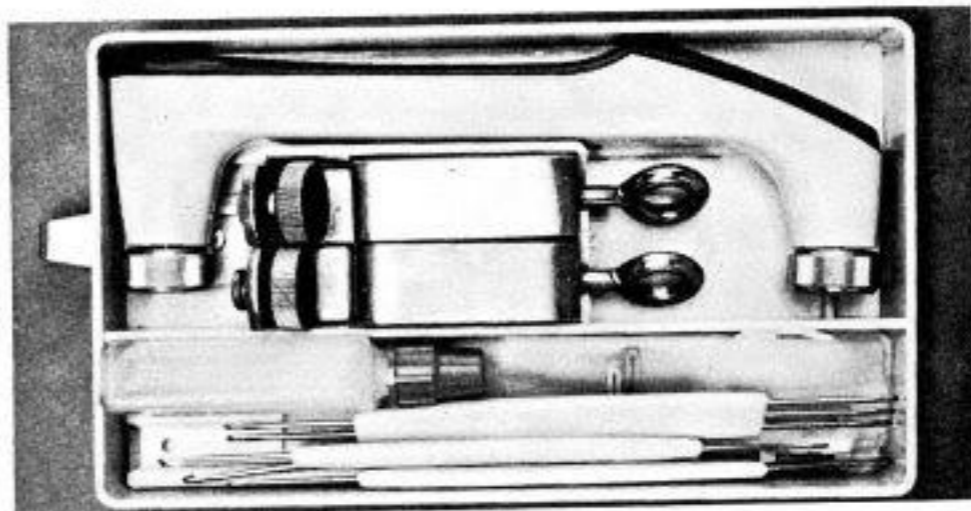
- ① Return all the pattern buttons, arrange all the knitting needles together at the A position and match the slide graduation to "1".



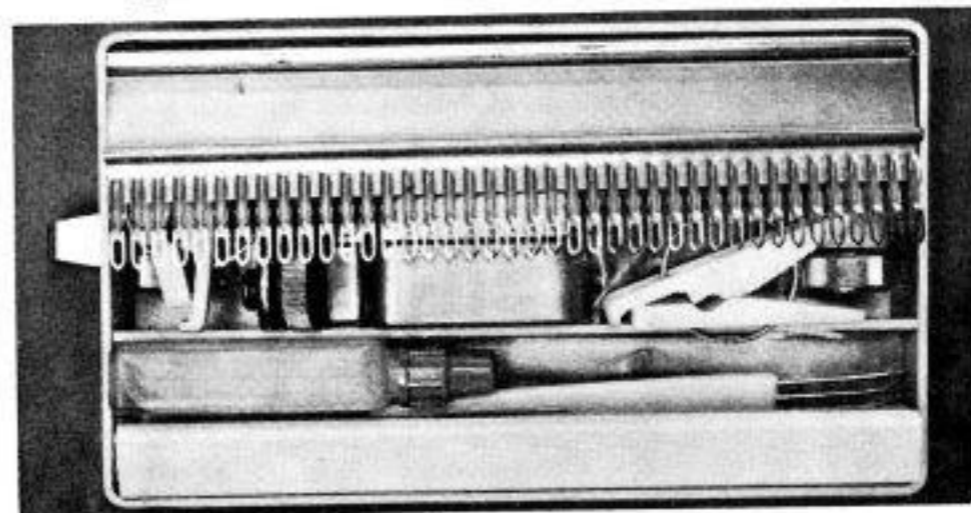
- ② Remove the carriage handle and the material presser and with the carriage stopper, set it on the right side. (Insert the protruding part of the carriage stopper into the long square hole and tighten the other end with the arm knob.)



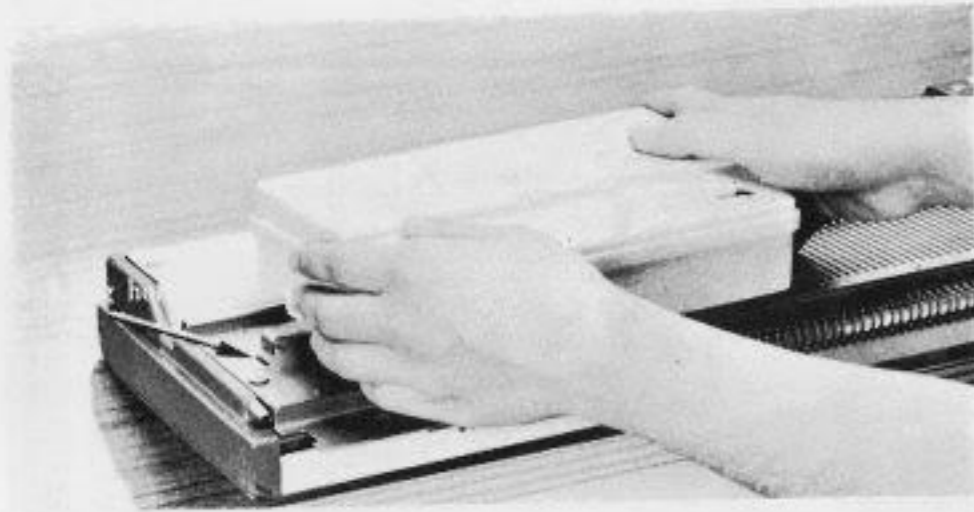
- ③ Put away the following parts into the accessories box:  
Carriage handle, installing tools, brush, needle feeding plate, oiler, latch needle tool, transfer needles, selecting levers.



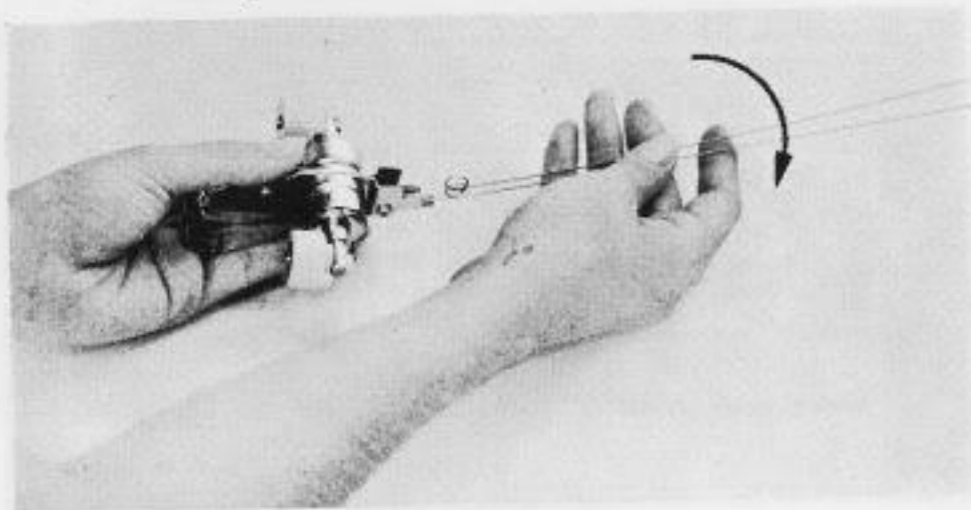
- ④ Put away the following remaining parts neatly in the store case:  
Pulled yarn, spare needles, closing needles, threader weight, thread passer, embroidering scissors, embroidering plate.



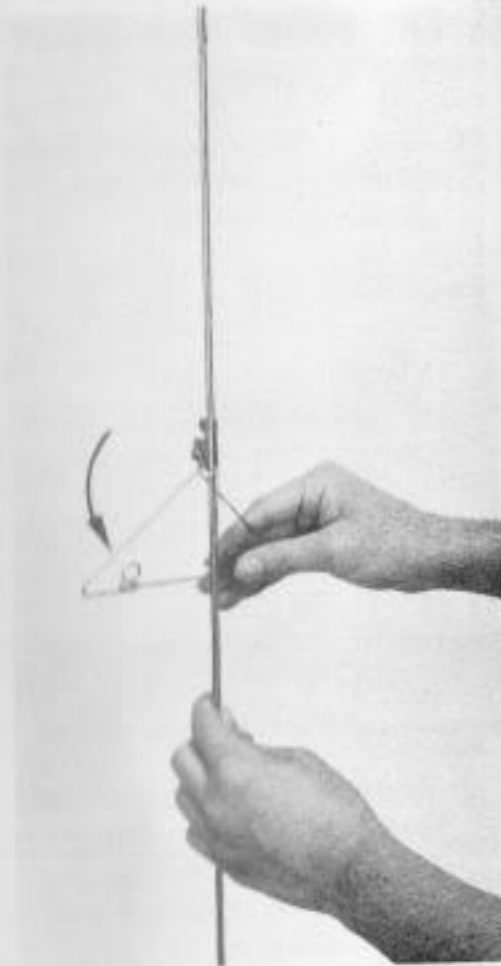
- ⑤ Cover up the parts box.
- ⑥ Insert the leg support of the parts box into the long square hole and set it.



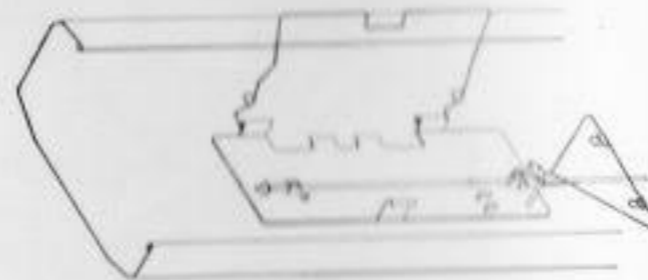
- ⑦ Remove the tension and return the tension spring to the horizontal position.



- ⑧ Fold up the knitting thread guide and re move the tension bar.

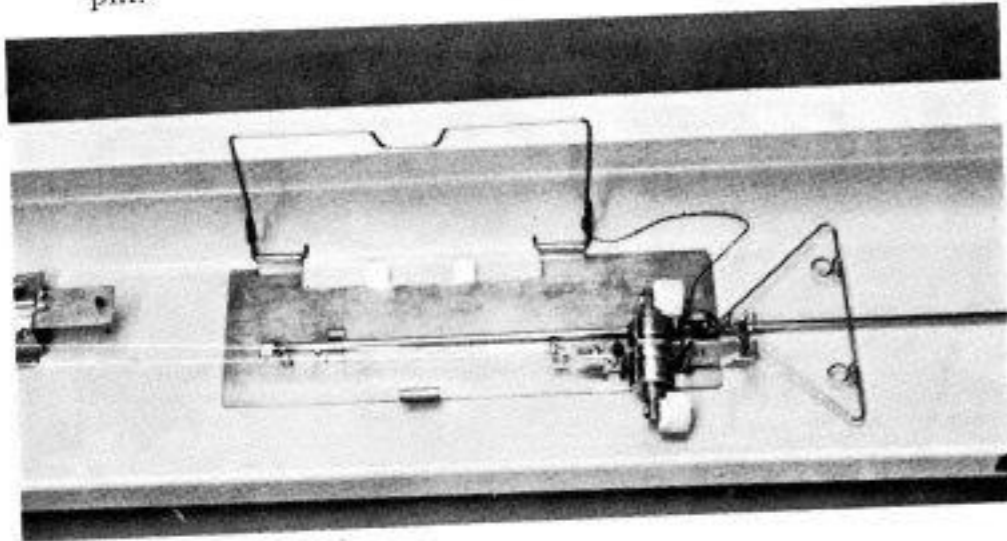


- ⑨ Open up the presser spring inside the lid of the machine. With the knitting thread guide on top, store away the tension bar.

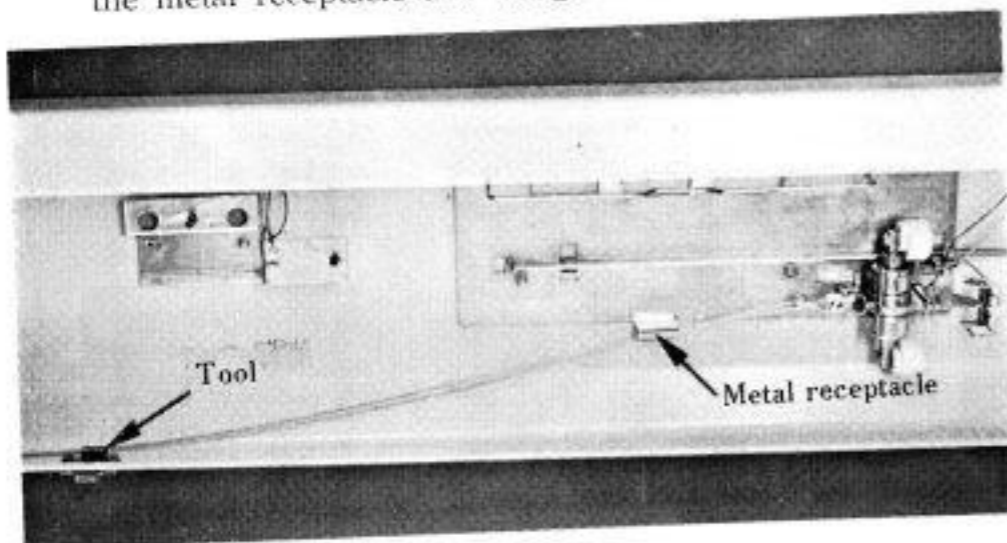




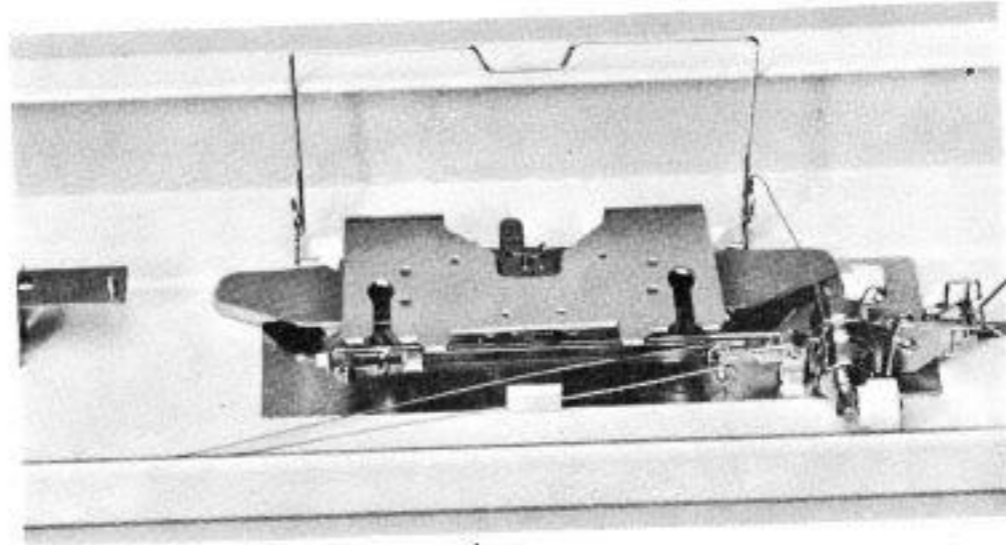
- ⑩ To store away the tension, put the forward thread guide on top, insert the shaft hole into the shaft and insert the pin.



- ⑪ Arrange all the tension springs and duck them under the metal receptacle and hang them on the tools.



- ⑫ Store away the material presser as shown in Fig. 117.



- ⑬ Knock down the presser spring and hang it on the metal receptacle.

