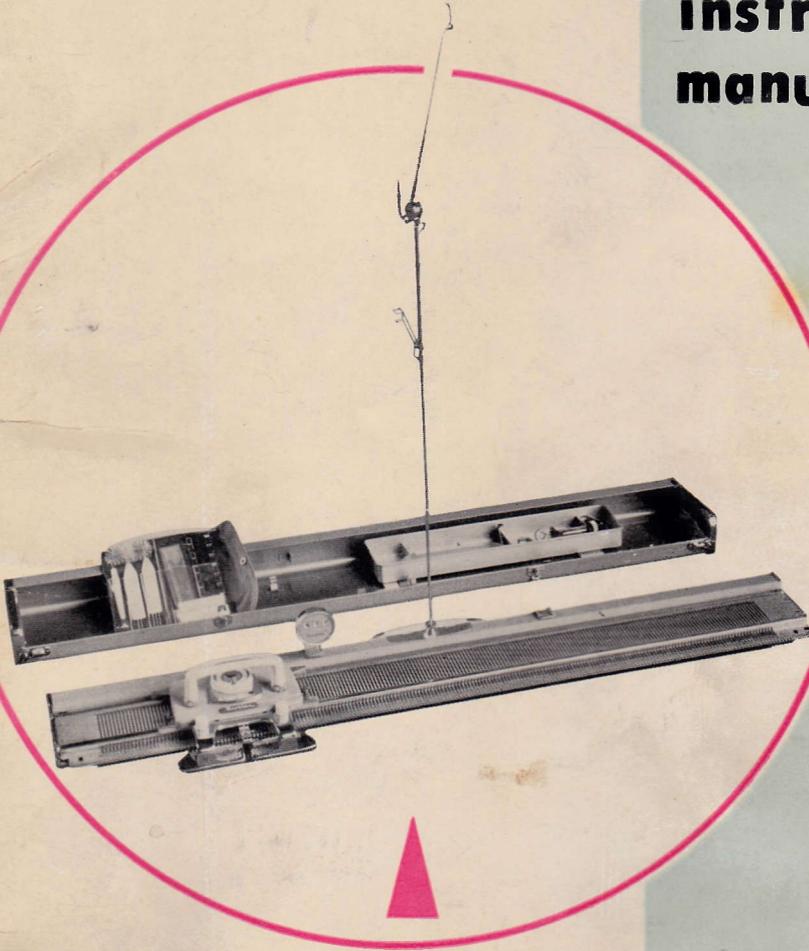


311

**instruction
manual**



BROTHER-KNIT

How to master
your automatic
home knitter

BROTHER SEWING MACHINE MFG. CO., LTD.

NAGOYA, JAPAN

COPYRIGHT © 1959

BROTHER INTERNATIONAL CORPORATION

36-50 28th street, Long Island City 1, New York

1058 South Flower Street, Los Angeles. Calif.

Introducing Your

BROTHER[®]-KNIT

Just as the sewing machine once outdated hand-stitching, new automatic knitters are today replacing the old-fashioned custom of knitting by hand. Those of us who appreciate the luxurious beauty of fine garments can thank these new knitters for giving us a faster and easier method to accomplish in minutes the beautiful work which formerly took days and weeks.

The BROTHER-KNIT is the most compact and complete home knitter ever built. It hand-knits at a fraction of the former time yet in result cannot be told apart from two needle knitting! Follow standard hand-knitting instructions, do any stitch, like cables, argyles, horizontal or vertical designs, and use all weights of yarn. Even if you've never knitted before, you will see professional results instantly.

All shaping such as increasing, decreasing, neck openings and buttonholes, are done directly on BROTHER-KNIT and a tremendous feeling of satisfaction is derived from seeing the knitted fabric literally grow before your eyes.

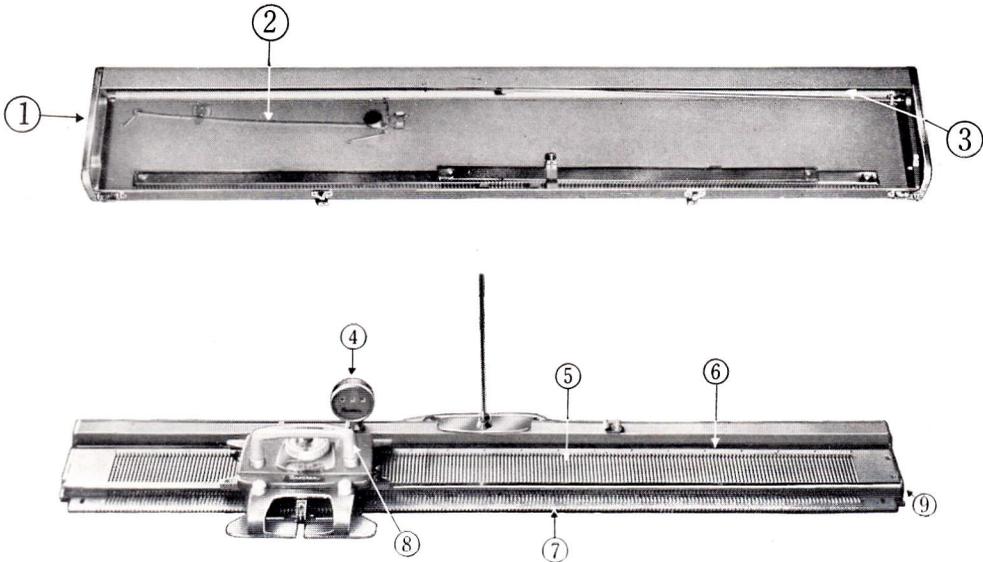
The manufacturer of BROTHER-KNIT, the Brother Sewing Machine Manufacturing Co., Ltd., is one of the world's largest and most modern industrial powers.

CONTENTS

	page
Exclusive Swing-Away	
A. The Carrying Case and the Needle Bed.....	1
Detailed Description of the Brother-Knit	
B. Carriage	2
Helpful Accessories for the Brother-Knit.....	3
How a stitch is formed.....	4
Preparing the Brother-Knit	5
Needle Positions in the Needle Bed	12
Relations among the positions of Pattern	
Selector Dial, Needles and Change Levers	13
Preparing for knitting	14
1. Preparing for yarn	14
2. How to lead the yarn to yarn feeder	14
3. Preparing the carriage for knitting	14
4. Casting on.....	16
Necessary basic operations to knit garments	17
1. How to use the transfer tool	17
2. How to pick up dropped stitch	18
3. Undoing of rows or unravelling	19
4. To unlock carriage	20
5. How to make a knit and purl stitch or ribbing	21
6. How to remove the knitting from the knitter	23
7. How to transfer the knitting from the knitting needles to the knitter	23
8. Increasing	24
9. Decreasing.....	26
10. How to replace the needles	30
11. How to determine the tension.....	32
12. Holding Pattern	33
13. Partial knitting	34
14. Multicolor knitting	36
15. One time two color knitting method.....	36
16. Tucking	37
17. Partial Tucking	38
18. How to fold up the knitter	38

EXCLUSIVE SWING-AWAY

A, THE CARRYING CASE AND THE NEEDLE BED

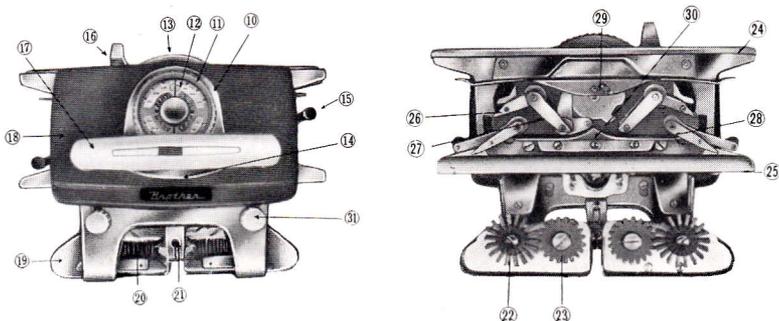


The Parts :

1. Portable carrying case
2. Automatic yarn feeder
3. Automatic yarn feeder upright rod
4. Row counter
5. Guide rails: To guide the carriage
6. Needle bed : Body of the knitter
7. Needle bed teeth : Comb-like front of the needle bed
8. Carriage
9. Felt bar end piece

DETAILED DESCRIPTION OF THE BROTHER-KNIT

B. CARRIAGE; The heart of the knitter

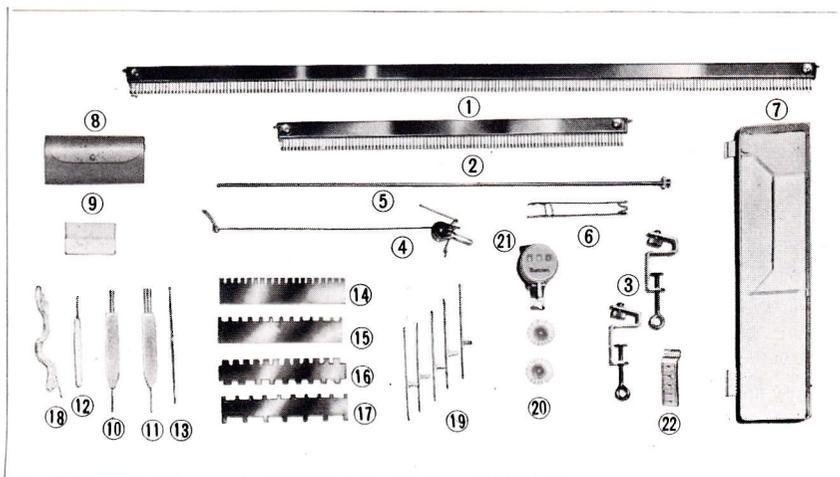


The Parts of the Carriage ;

10. Pattern Selector Knob ; Rotate this knob to the pattern you wish.
11. Pattern Indicating Line ; is provided on the transparent plastic cover fixed for the purpose of showing the pattern you set.
12. Pattern Dial ; shows the Patterns to be knitted.
13. Tension Dial ; shows the tension numbers.
14. Tension Indicating Line ; To indicate the tension number you set.
15. Change Levers ; To control the position of the change cams.
16. Row Counter Tripper ; trips row counter lever into action.
17. Grip Handle ; The handle for moving the carriage
18. Carriage cover
19. Sinker Plate ; To hold the brush wheels and sinker wheels.
20. Brushes ; open and clean the latches of the needles.
21. Yarn Feeder ; feeds the yarn to the needles.
22. Brush Wheel ; To keep the position of the garment during knitting.
23. Sinker Wheel
24. Carrage Rear Foot
25. Carriage Front Foot
26. Rising Cams ; control the raising of the working needles when pattern selector knob(10) is set to position K. But when the knob 10 is set to "PART" or "TUCK" the rising cams do not effect the working needles.

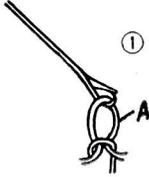
27. Knitting Cams ; control the lowering of the working needles.
28. Change Cams ; control the positioning of the needles in the forward location.
29. Lower Cam Strip ; separates the working needles from the lower resting needles.
30. Upper Cam Strip ; separates the working needles from the upper resting needles.
31. Thumb Screws of Sinker plate ;

HELPFUL ACCESSORIES FOR THE BROTHER-KNIT

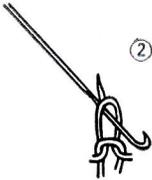


- | | |
|--------------------------------------|------------------------------|
| 1. Large cast-on comb | 12. Latch tool |
| 2. Small cast-on comb | 13. Crochet |
| 3. Table clamps | 14. 1/1 needle pusher |
| 4. Automatic yarn feeder | 15. 1/2 needle pusher |
| 5. Automatic yarn feeder upright rod | 16. 2/2, 2/1 needle pusher |
| 6. Yarn guide | 17. 1/3, 1/5 needle pusher |
| 7. Parts box | 18. Cast-on thread |
| 8. Plastic kit | 19. Spare needles |
| 9. Hand brush | 20. Spare brush wheels |
| 10. 1×2 transfer tool | 21. Row counter |
| 11. 1×3 transfer tool | 22. Needle position selector |

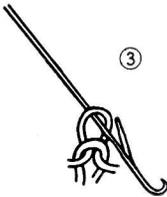
HOW A STITCH IS FORMED



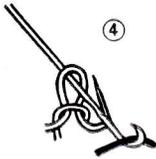
No. 1 The needle is in the knitting position and stitch A is hanging from the needle hook.



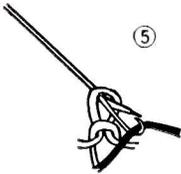
No. 2 The cams of the carriage raise up the needle. Stitch A opens the latch of the needle.



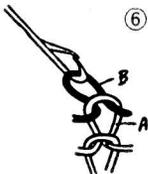
No. 3 The cams of the carriage have commenced to raise the needle and now needle is forward and stitch A is below the needle latch and is hanging onto the needle stem.



No. 4 The needle has reached its maximum forward position in the needle groove. Stitch A is hanging on the needle stem, while the yarn feeder has placed a new thread in the hook which will be formed in the next stitch B.



No. 5 The needle is returning on its rearward course, pulling the one loop B with it. The old stitch A is at the same time coming nearer to the latch, causing the new stitch B to be locked inside the needle hook.



No. 6 The needle has completed its rearward passage. It has pulled the loop B through the stitch A, thus making a completely new stitch B. This is now hanging onto the needle hook.

PREPARING THE BROTHER-KNIT

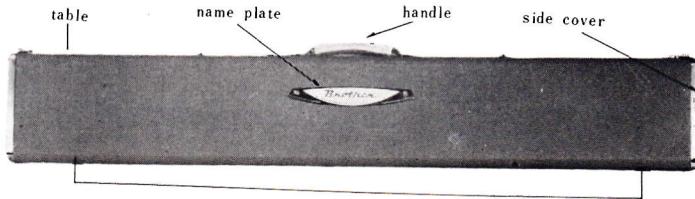


Fig. 1

1. Place your knitter on the edge of any firm and flat table. Handle of carrying case is opposite from you. (See Fig.1)

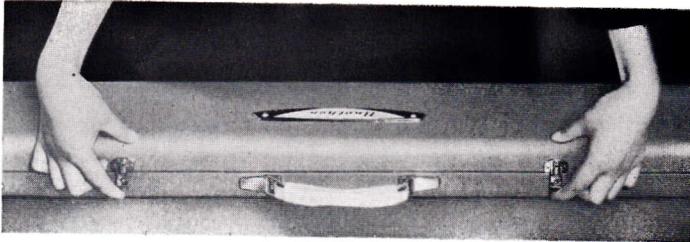


Fig. 2

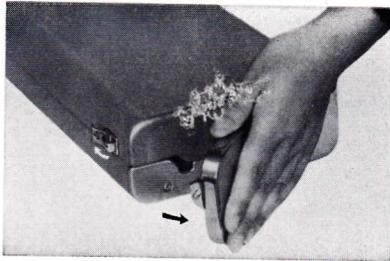


Fig. 3

2. Remove the upper case.
 - a. Unlock the locks on both sides of the handle. (See Fig. 2)
 - b. Unlock the locks on the side covers, open the side covers as they will go. (See Fig.3)
 - c. Lift the upper case about 1" and pull toward you. (See Fig. 4)

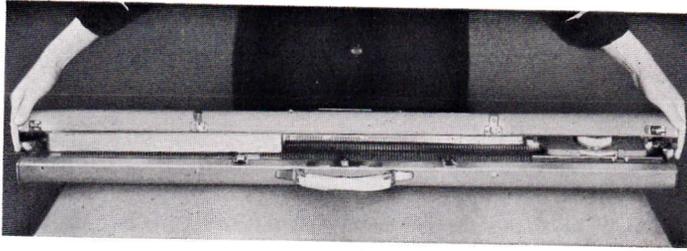


Fig. 4

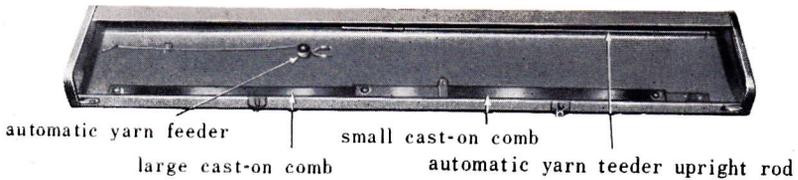


Fig. 5

d. The side covers of the upper case which was removed from the knitter must be locked as it was.

The upper case contains large cast-on comb, small cast-on comb, automatic yarn feeder and automatic yarn feeder upright rod. (See Fig. 5)

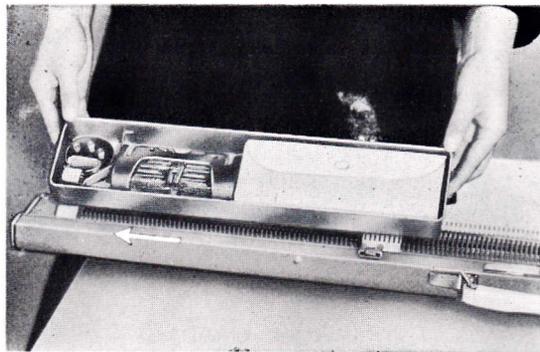


Fig. 6

3. Remove the parts box.

On the needle bed, the carriage is at the left side, the parts box is at the right side. Lift the parts box and slide to right end of the needle bed. (See Fig. 6)

4. Fasten the machine to the table.

- a. Take out the table clamps from the parts box. Lift up the front of the knitter, push in the head of screw (B) to the hole of (C), slip in (B) to (D), and fasten(A). Fasten the machine to the table by table clamps. (See Fig. 7)
- b. For average plain knitting the pads on the back side of the case will amply support and prevent the machine from sliding when it is operated. However, clamps are required to fasten the machine to the table when the Purl Comb is used.

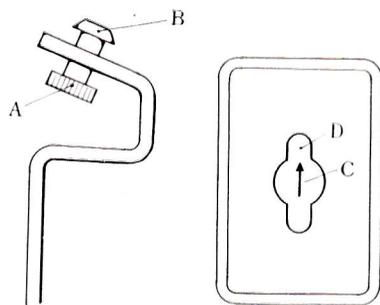


Fig. 7

5. Remove the carriage lock.

Loosen the left side thumb screw of the carriage and remove the carriage lock. (See Fig. 8) The carriage lock is necessary to folding the machine. Don't lose the carriage lock during machine operating, save it in the parts box.

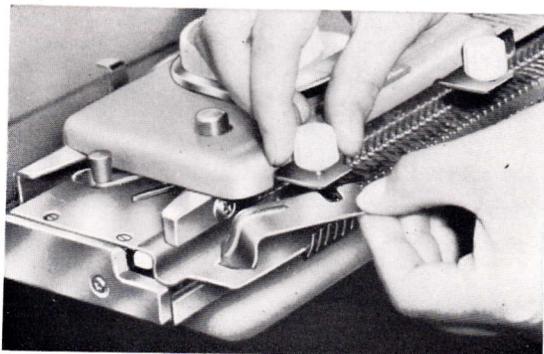


Fig. 8

6. Attach the automatic yarn feeder.

- a. Unscrew the automatic yarn feeder rod from the upper case. (See Fig. 9)

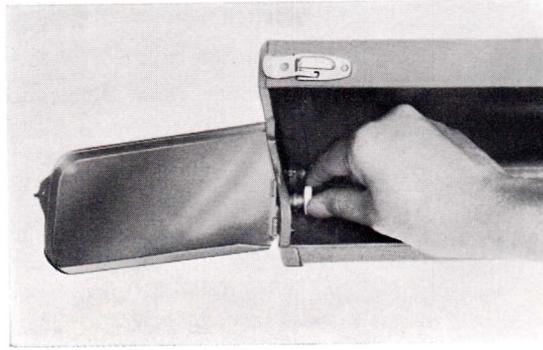


Fig. 9

- b. Fasten the automatic yarn feeder rod in the center screw hole at the rear of the knitter. Fasten the rod 4-5 threads, then fasten the lock nut while the stopper on the rod must be placed back side of the knitter. (See Fig.10 A, B)



Fig. 10A

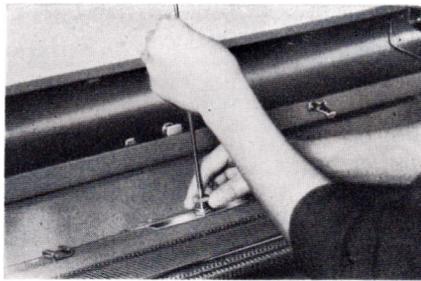


Fig. 10B

- c. Take out the automatic yarn feeder from the carrying case.
- d. Set the automatic yarn feeder on the automatic yarn feeder rod. Make sure the automatic yarn feeder rotates smoothly to the right and left direction. (See Fig. 11)
- e. Take out the yarn guide from the carrying case, and attach it on the rod about half height. (See Fig. 12)

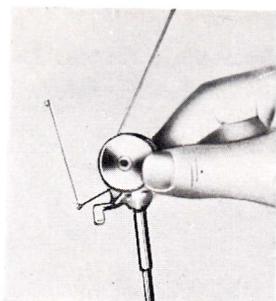


Fig 11

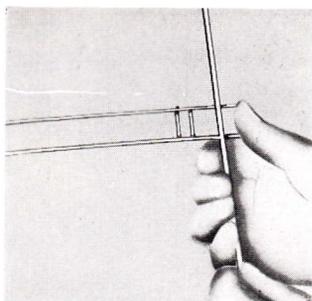


Fig. 12

7. Set the row counter

- a. Set the row counter in one of the brackets you like on the rear cover of the needle bed. (See Fig.13)

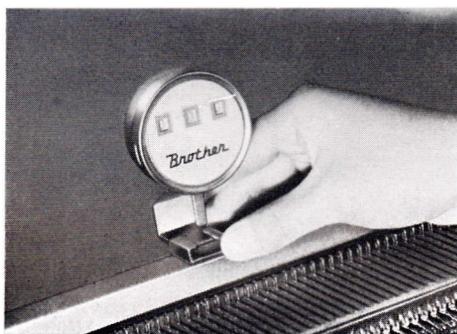


Fig. 13

- b. To regulate the numbers of row counter, you can change the number of three figures by turning 3 regulating knobs on the back of the row counter to either direction. But you can turn them to only one direction, when the number of lower figures is 0 or 9. (See Fig.14)

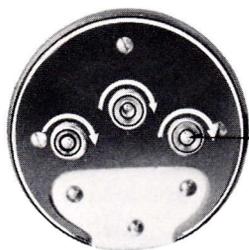


Fig. 14

regulating knob

8. Assemble the carriage

- a. Take out the sinker plate complete from the parts box. Loosen the thumb screws of carriage, push in the sinkerplate as they will go and fasten the thumb screws securely. (See Fig. 15)

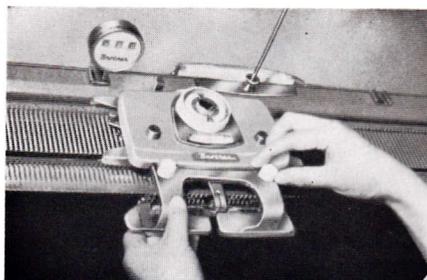


Fig. 15

- b. Take out the handle from the parts box and fasten to two threaded studs on carriage. (See Fig. 16)

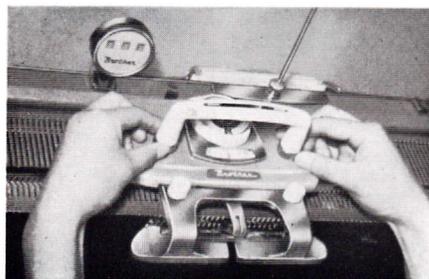


Fig. 16

9. You are now ready to knit.

HOW TO USE PATTERN SELECTOR DIAL

Pattern Selector Dial is one of the big feature of this machine. To select the pattern, merely rotate this knob and set the line of this knob to the pattern you wish. (c. e. plain knitting, partial knitting, tucking partial tucking)

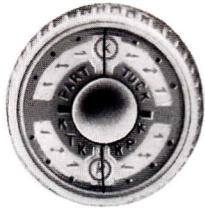


Fig. 1. plain knitting

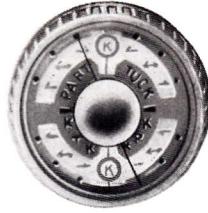


Fig. 2. partial knitting

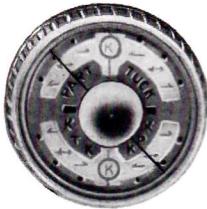


Fig. 3. partial knitting

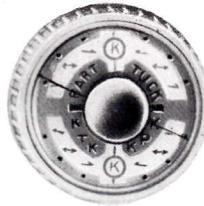


Fig. 4. partial knitting

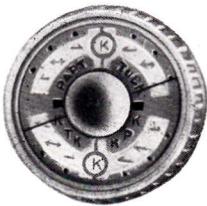


Fig. 5. tucking

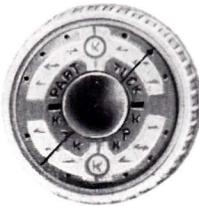


Fig. 6 tucking

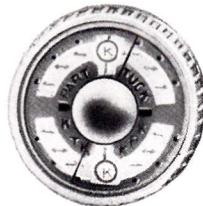


Fig. 7. tucking

Fig.	Letter of Dial	Left course	Right course
1	K	plain knitting	plain knitting
2	PART →	plain knitting	partial knitting
3	PART ↔	partial knitting	partial knitting
4	PART ←	partial knitting	plain knitting
5	TUCK →	plain knitting	tucking
6	TUCK ↔	tucking	tucking
7	TUCK ←	tucking	plain knitting

NEEDLE POSITIONS IN THE NEEDLE BED

5 positions of the needles are shown by the needle position selector.
(See Fig. 16)

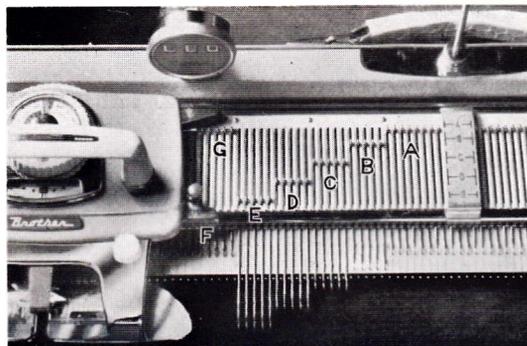


Fig. 16

- A: Resting or non knitting position (all the way back to base of needle bed)
- B: Knitting or working position (needles raised about half an inch from base of needle bed)
- C: Two colour knitting position
- D: The position of needles to be knitted in partial knitting of multiple colour knitting and tucking
- E: Holding position or Upper resting position (all the way forward to top of needle bed)

POSITIONS OF CHANGE LEVERS

Both change levers are identical. They can be set at two different positions, knitting and holding position. For holding position, the change levers are moved to the front. (F) (See Fig. 16)

For holding position, the change levers are moved to the rear. (G) (See Fig. 16)

When you wish to knit on the needles in the holding position (which means that needles are pushed forward as far as they will go) set the change levers to the knitting position. (F) When you don't wish to knit on the needles in the holding position, set the change levers to the holding position. (G) (See Fig. 16)

Note : For plain knitting, set the lever to the knitting position. (F)

RELATIONS BETWEEN THE POSITIONS OF PATTERN SELECTOR DIAL, NEEDLES AND CHANGE LEVERS

Needles of Position A are not knitted at any positions of Pattern selector dial and change levers. Position A is used for folding of machine or making long stitch pattern.

Position of pattern selector dial	Position of change lever	Position of needles	Pattern
K	F	B	plain knitting
K	G	B	Holding Position Pattern or Partial knitting
		E	
PART	F	B(C)	Multiple Colour knitting (C) is used for two colour knitting
		E	
	G	B	Partial knitting for multiple colour knitting
		D	
		E	
TUCK	F	B	Tucking
		E	
	G	B	Partial Tucking
		D	
		E	
		A	Long stitch pattern

Note : The latches of the needles at the position D must be opened. If they are not so, it causes dropped stitches.

NUMBER OF NEEDLES

For the convenience to select the needles, signes of Needle number are shown by red colour in front of needle bed.

Example ;

The center No. of 200 needles is zero. No. 10 means 10 th needle counterung from either side of zero.

The heads of ribets are seen at the rear of needle grooves on the needle bed. Ten needles are included between two ribets.

PREPARING FOR KNITTING

1. Preparing for yarn

Unwind the skein of yarn into a box or basket where it can unwind freely. Let the basket, or box with yarn, stand in the center of the table near the middle of the knitter.

Note : Don't use the ball of yarn.

2. How to lead the yarn to yarn feeder

Pick up the end of yarn from the box, pass from the back toward the front through the opening 1 of the yarn guide, openings 2, 3, 4 and 5 of the automatic yarn feeder. Bring down and lead through two openings in the yarn feeder in the center front of the carriage. (See Fig. 17) Leave the yarn hanging out of the yarn feeder about 4 inches.

3. Preparing the carriage for knitting

- a. Set the tension
Set your tension to the proper gauge

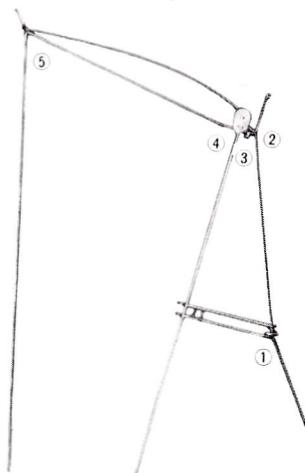
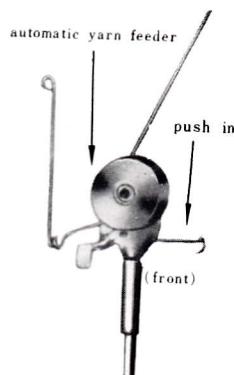


Fig. 18

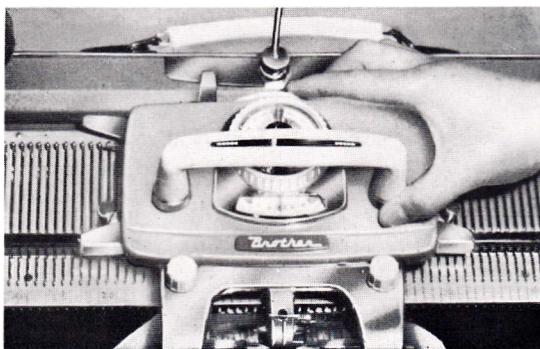


Fig. 17

by turning the tension dial until tension indicating line points to the desired number. (See Fig. 18)

Type of Yarn	Normal Tension No.
2 or 3 ply yarn	5-6
Cashmere	5
Baby yarns	6
Fingering yarns	7-8
Sport and Sock yarns	5-6
Pompadour	7-8
Worsted (use alternate needles)	10
4 ply yarns	10
Dress yarns (Boucle, Velveen, etc.)	7-8
Metalic with Velvet	8
Crochet Thread	4-5
Mohair	10

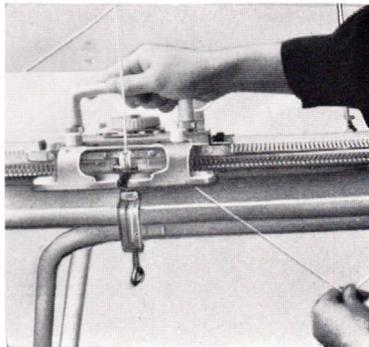
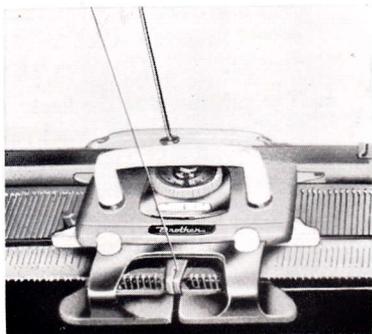


Fig. 19

b. Positions of Pattern Selector Dial and Change Levers.

- (1) Set the Pattern Selector Dial to K. (plain knitting)
- (2) Set the change levers to F. (See Fig. 19)

c. Position of the Carriage

Rest the carriage on either ends of needle bed. (See Fig. 20)

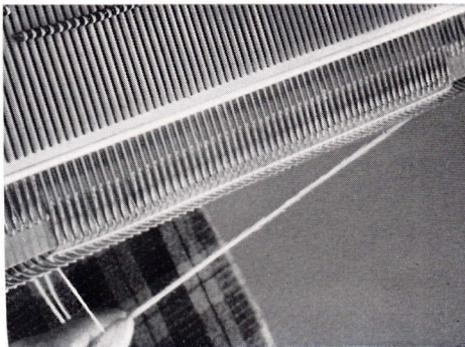


Fig. 20

4. Casting on

Casting on stitches means making a first row of the foundation of the knitting.

We will start with the simplest method for casting on, using the casting on thread. Brother-knitting machine can knit by the casting on thread only.

- a. Using the back straight edge of needle pusher, bring forward about 1" from the resting position (A) the desired number of needles you wish to knit on.

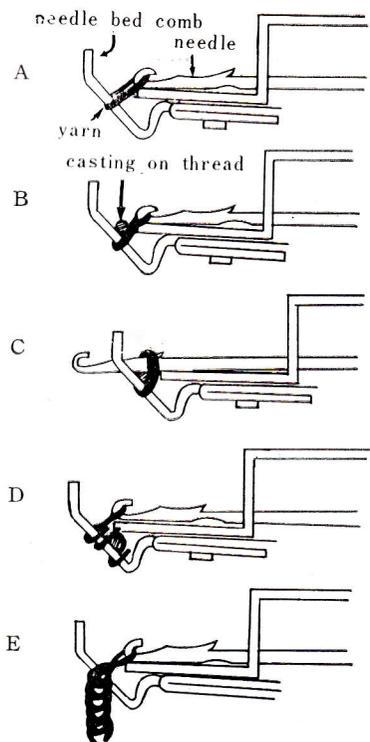


Fig. 21

- b. With your right hand on the handle of the carriage, move the carriage slowly as you move an iron in one nonstop movement until you hear a "click" which tells you automatically that the carriage passed over all the knitting needles.
- c. You can see that the hooks of needles hang the yarn like Fig. 21-A. Take out the casting on thread from the plastic kit, and across it on the loops of yarn between needle bed comb and hooks of needles.
- d. Hold the ends of casting on thread and pull down. (See Fig. 21 B)
- e. Move the carriage and knit 3 or 4 rows. (See Fig. 21-C)
- f. Pull out casting on thread. (See Fig. 21-D)
- g. You finished casting on now. (See Fig. 21-E)

- Note :**
- a. At the beginning knit slowly ... Speed comes with practice.
 - b. Don't move the carriage backward on the middle of the row.
 - c. Move the carriage in constant speed.

NECESSARY BASIC OPERATIONS TO KNIT GARMENTS

1. How to use the transfer tool. (How to transfer stitches.)

This method is used for lace pattern, increasing, decreasing, and repairing dropped stitches.

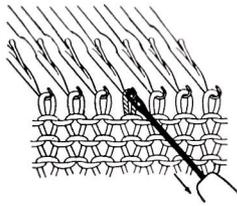


Fig. 22

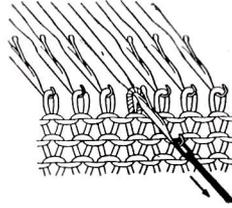


Fig. 23

- a. Hold the transfer tool parallel with the needles in the needle bed. Place the eye of the transfer tool into the hook of the needle. (See Fig. 22)
- b. With the transfer tool, bring forward the needle. By bringing this needle forward, the stitch in the hook of the needle will slide behind latch and on the stem. (See Fig. 23)

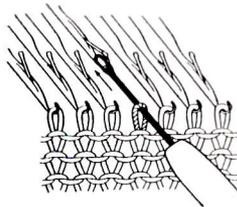


Fig. 24

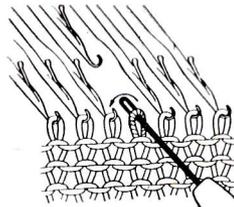


Fig. 25

- c. With the eye of the transfer tool on the hook of the needle, push the needle all the way back until the stitch is transferred onto tool. (See Fig. 24)
 - d. Lift the transfer tool with the stitch on it and transfer it to the adjacent needle, right or left as desired. (See Fig. 25)
- Note :** If the latches of two needles are opened before transferring operation, you can transfer stitch more speedy.

2. How to pick up dropped stitch

A. If you drop a stitch, do the following.

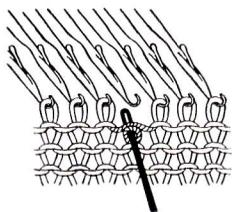


Fig. 26

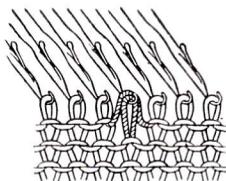


Fig. 27

- a. With the one eye transfer tool, pick up the stitch and the unknitted thread and put them both on the empty needle. (See Fig. 26, 27)

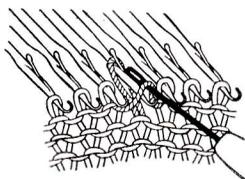


Fig. 28

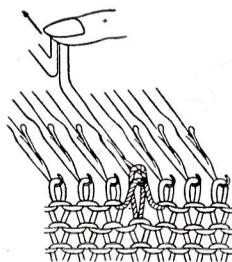


Fig. 29

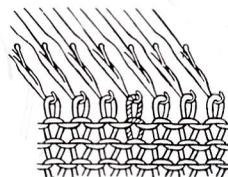


Fig. 30

- b. Move the stitch behind the latch of the needle, catch the thread of the unknitted stitch into the hook of the needle. (See Fig. 28)
- c. With your finger on the butt of the needle bring the needle all the way back. The stitch will slide over the hook of the needle, will be knitted. (See Fig. 29, 30)

B. In the case multiple rows dropped

- a. Catch loop of dropped stitch with one eye transfer tool.
- b. Coming from behind the knitting with latch tool, transfer stitch onto hook of latch tool. Remove transfer tool.
- c. Using latch tool only and with a downward motion, place stitch behind latch and next horizontal thread into the hook of the needle. (See Fig. 31, 32)

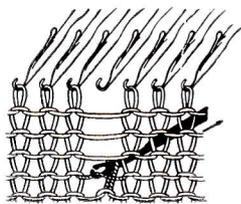


Fig. 31

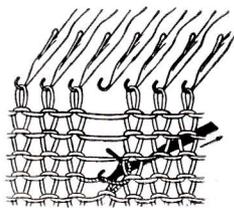


Fig. 32

d. In up and down motion, catch horizontal threads one by one to form new stitches until you have knitted back to the top of your work. The final stitch is placed back on the empty needle. (See Fig. 33, 34, 35)

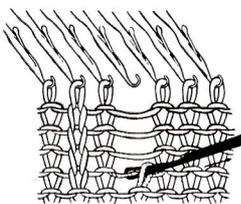


Fig. 33

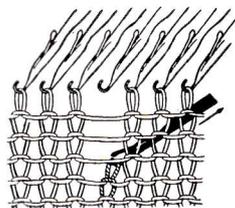


Fig. 34

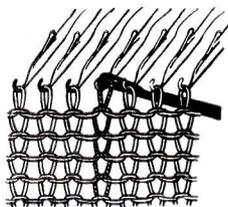


Fig. 35

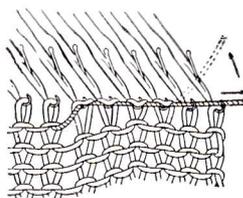


Fig. 36

3. Undoing of rows or unravelling

Don't take the work off the knitter when you make a mistake. Simply unravel one or several rows, by doing the following :

Pull the yarn slightly, drawing it out of stitches. The stitches of the last row will slip into the needles automatically.

To move the carriage in either direction without knitting, turn the Pattern Selector Dial to P. Now the carriage will slide over the needles

which are in operation without knitting. (This is also useful for multicolor knitting.)

Pull down the yarn under the yarn guide until the yarn tension spring will operate. Turn the knobs in the back of the row counter and regulate the number of it to the real number.

4. To unlock carriage

In the event of the carriage jamming in the course of normal knitting due to incorrect guiding of the yarn, the following steps will quickly permit freedom of operation.

- a. Loosen the thumb screws of the sinker plate, pull off the sinker plate from the carriage. (See Fig. 37)
- b. Grip the handle of the carriage and lift up the front foot of the carriage. (See Fig. 38)

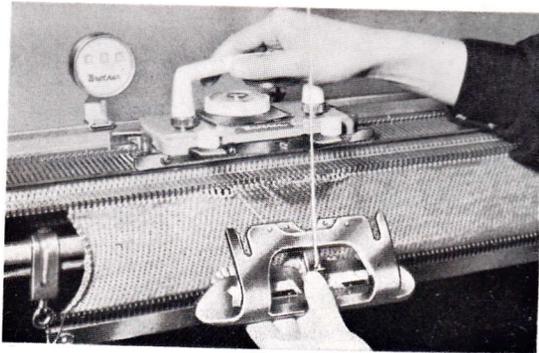


Fig. 37

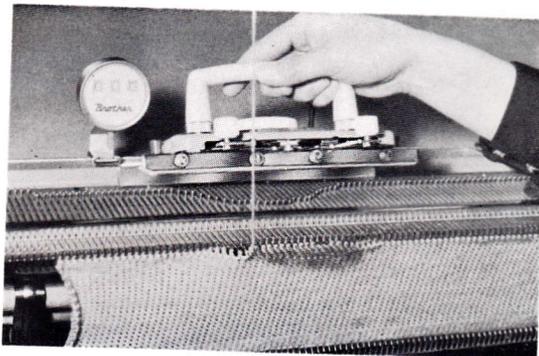


Fig. 38

- c. Slide the carriage in either direction and down the front foot on the needle bed end.
- d. Attach the sinker plate to the carriage and fasten the thumb screws of the sinker plate securely.
- e. Unravel last row of knitting.
- f. Adjust the number of the row counter.

5. How to make a knit and purl stitch or ribbing.

The knit and purl stitch together on one side of the material, leaves an uneven texture of a ribbed effect. The ribbing is produced by having knit stitch over knit stitch and purl stitch over purl stitch, in vertical lines. The ribbing narrows and lengthens the knitted fabric and increases its elasticity.

It is widely used for waist bands in sweaters, cuffs, callars, pockets, and many other decorative purposes. You can make many variations of ribbing. For example, 1 knit 1 purl, 2 knit 2 purl, 3 knit 1 purl etc. Select any number of combinations of knit and purl to suit your particular desire, or follow your instructions.

The knit and purl on your knitter

For one knit one purl do the following ;

Knit as many rows as required for the length of the ribbing on a slightly tighter tension. Drop the third stitch from the last stitch by pushing back the needle until stitch drops. Rip to three rows from the bottom edge of knitted fabric. Insert the hook of the latch tool into the loop of the dropped stitch (near bottom edge), hold tool parallel, stitch is now in back of latch. Place next parallel thread in front latch. Pull forward until new stitch is formed. (See Fig. 39-45)

Keep eye on latch of tool, always pick up parallel threads one by one noting that last formed stitch is behind latch, next parallel thread in front

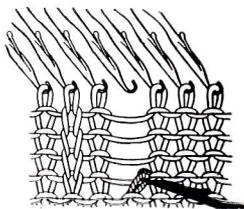


Fig. 39

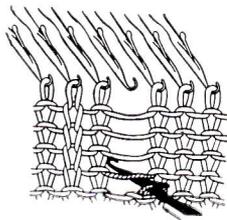


Fig. 40

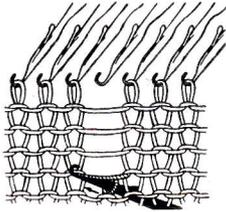


Fig. 41

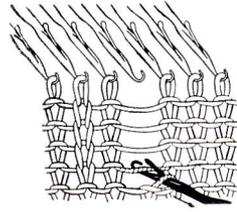


Fig. 42

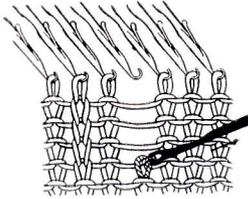


Fig. 43

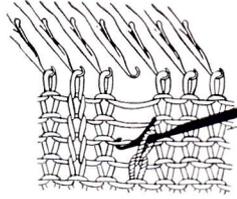


Fig. 44

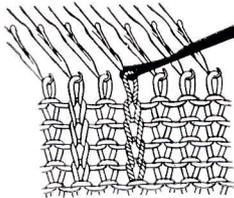


Fig. 45

of the latch. A push, pull motion soon becomes mechanical. When all parallel threads are picked up, the last stitch is placed back on empty needle. In this manner, you are reversing your stitch, making each purl a knit.

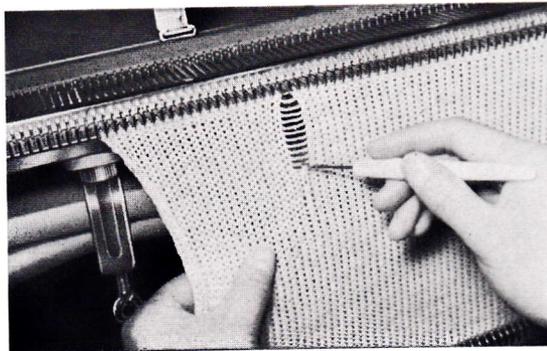


Fig. 45

6. How to remove the knitting from the knitter.

A. Unbound method :

- a. Take the yarn out of the yarn feeder.
- b. Slide the carriage twice across the needle bed. Left to right or right to left.
- c. The work will be released.

You may also transfer your finished work to knitting needle, if so desired, by transferring to hand needles stitch by stitch.

B. How to transfer to hand knitting needles.

- a. Slide a hand knitting needle into the first stitch. With your left hand, hold the knitting close to the knitter. With your finger, bring the needle forward so that the stitch in the hook of the needle slide onto the stem of the needle behind the latch.
- b. Bring the needle all the way back. The stitch will fall over the hook of the needle onto the knitting needle.
- c. Slide the knitting needle into the next stitch and repeat until all the stitches are off the needles in the needle bed. (See Fig. 46)

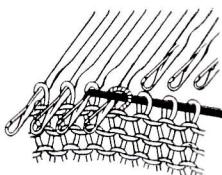


Fig. 46

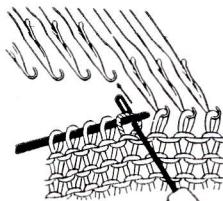


Fig. 47

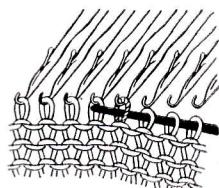


Fig. 48

7. How to transfer the knitting from the knitting needle to the knitter.

A. Method using transfer tool

- a. Begin from right side. With left hand, hold the knitting with purl side front, pass the transfer needle to the stitch on the knitting needle from front side.
- b. Transfer the stitch on the transfer needle onto the hook of needle in the knitter. (See Fig. 47)

Being many stitches transferred, the knitting on the knitter will be apt to come up and come out from the hooks. To prevent drops of stitches, push the needles with stitches all the way back as they

will go.

B. Other method.

- a. Bring forward as the same number of needles as the stitches of knitting.
- b. Open the latches of these needles by hand brush.
- c. Begin from left side.
- d. Transfer the stitches on the knitting needle to the opened hooks of the needles. (See Fig. 48)

8. Increasing

A. Increasing one stitch on either side

1) Simple method

- a. Simply pull out one needle from the resting position (A) on the side which carriage rests.
- b. The vacant needle it on the yarn.
- c. Move the carriage and knit next row.
- d. Repeat wherever the pattern requires, increasing one stitch on either sides.

2) Other method of increasing one stitch on either side

- a. Use 2 needles transfer tool, move the 1st stitch to the neighboring outside empty needle and move the 2nd stitch to the 1st needle. (See Fig. 49)

Now the 3rd needle from the end becomes empty. (See Fig. 49)

- b. To the 3rd empty needle hang the below stitch of either neighboring stitch. (See Fig. 50 or 51, 52)

B. Increasing more than one stitch on either side of the garment.

- 1) Push up the desired number of needles to be increased at the same side of the carriage.

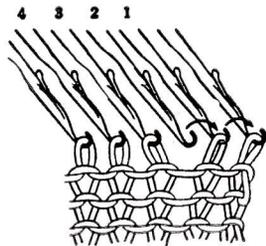


Fig. 49

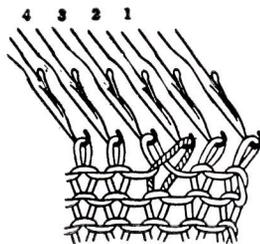


Fig. 50

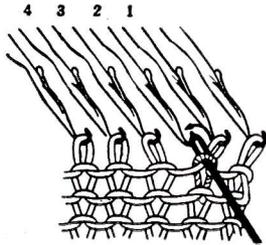


Fig. 51

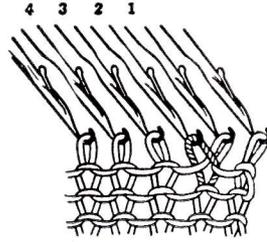


Fig. 52

- 2) Loosely wind yarn around stems of each needle. (winding in direction towards center) (See Fig. 53)
- 3) Set the change levers in position F, move the carriage. Push up the needles in the increasing part before knitting, place the stitches behind the latches of the needles, until 3 rows is finished. (See Fig. 54)

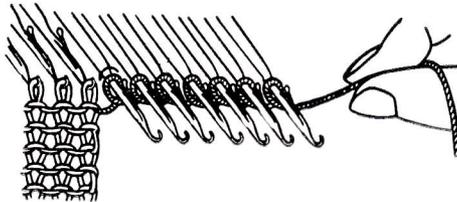


Fig. 53

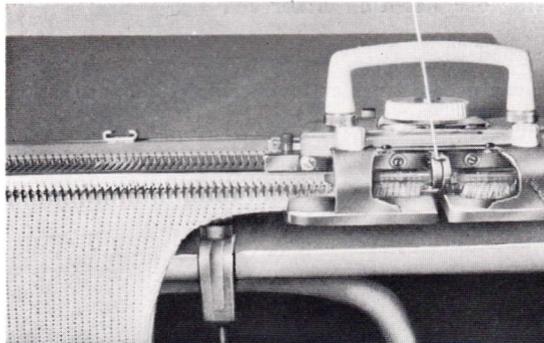


Fig. 54

C. Increasing one stitch in center of row

- 1) Determine the position where you want to increase one stitch.
- 2) Use 3 needle transfer tool, transfer all the stitches on either side to the neighboring outside needles of them. (See Fig. 55)
- 3) At last, hang the neighboring below stitch to the empty needle. (See Fig. 56)

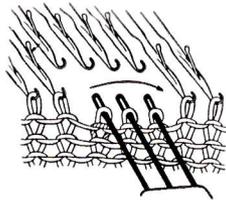


Fig. 55

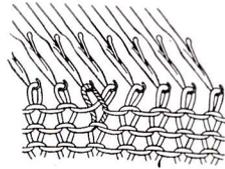


Fig. 56

D. Increasing many stitches in the row

- 1) Transfer the knitting from the knitter to the knitting needle.
- 2) Before the knitting is transferred from the knitting needle to the knitter, count to increase one stitch every any number of stitches.
- 3) Transfer the knitting from the knitting needle to the knitter, making empty needles at the parts to be increased.
- 4) Hang the neighboring below stitch to the empty needles.

9. Decreasing

A. Decreasing one stitch on either end

- 1) 1st method
 - a. Use one needle transfer tool, transfer the end stitch to the 2nd needle. (See Fig. 57)

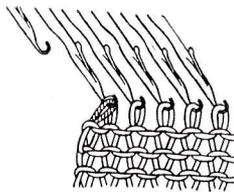


Fig. 57

2) 2nd method

- a. Use two needles transfer tool, transfer the end stitch to the 2nd needle and the 2nd stitch to the 3rd needle.

3) 3rd method

- a. Use one needle transfer tool, transfer the stitches of the 2nd needle and the end needle to the transfer tool, and hang them to the 2nd empty needle.

4) 4th method

- a. Use one needle transfer tool, transfer the 3rd stitch to the second needle. (See Fig. 58)
- b. Use two needles transfer tool in this time, take the end stitch on the one of transfer needles and the two stitches of the 2nd needle on another of transfer needles, transfer them to the neighboring inside needles towards the center of the knitter. (See Fig. 59)

1st method is very simple method to decrease, and is used for making curved line.

2nd method is simple method to decrease making clear end stitches. 3rd and 4th method is used for making inclined line.

Make sure that the empty needle must be pushed all the way back in decreasing.

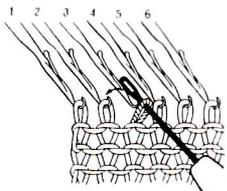


Fig. 58

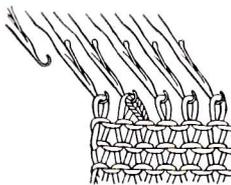


Fig. 59

B. Decreasing more than 2 stitches on either side

1) 1st method

- a. On the same side of the carriage, transfer the end stitch to the 2nd needle. (See Fig. 60)
- b. Pull out the needle having double stitches, place the double stitches behind the latch of the needle. (See Fig. 61)

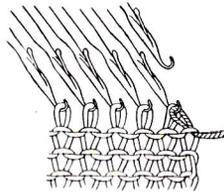


Fig. 60

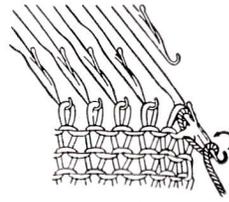


Fig. 61

- c. Place yarn in front of latch and manually push needle back to form a single stitch. (See Fig. 62)
- d. Repeat these process. (See Fig. 63)
- This method is using for binding off the knitting from the knitter.

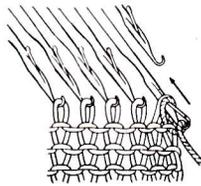


Fig. 62

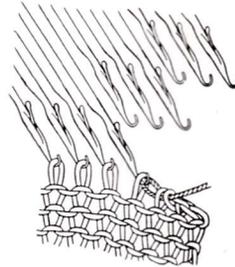


Fig. 63

2) 2nd method

- a. On the opposite side of the carriage, with latch tool, take the end stitch and the next one off the needle. (See Fig. 64)
- b. Place the end stitch only behind the latch and pull the latch tool to make a single stitch. (See Fig. 65)

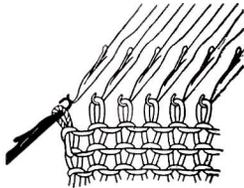


Fig. 64

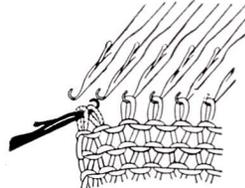


Fig. 65

- c. Take the next stitch off the needle onto latch tool, slide it through the last stitch. (See Fig.66)
- d. Repeat until required number of stitches are bound off. (See Fig. 67)

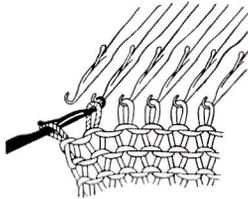


Fig. 66

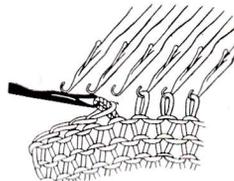


Fig. 67

C. Decreasing in the center of row

1) Decreasing one stitch

- a. Using the single transfer tool, transfer the center stitch on the neighboring needle on either side. (See Fig. 68)
- b. Using the 3 needle transfer tool, transfer all stitches of the needles from the empty needle to the end, to inward needles towards center of knitter. (See Fig. 69)

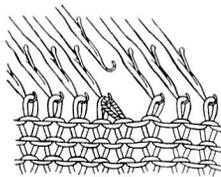


Fig. 68

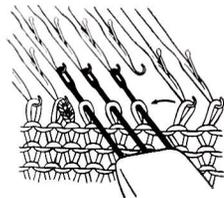


Fig. 69

2) Decreasing many stitches in row

- a. Take the knitting from the knitter to the knitting needle. (See Fig. 70)
- b. Before transferring the knitting from the knitting needle to the knitter, count to increase one stitch every any number of stitches. For example, when you want to decrease one stitch every third stitches, hang the 2nd and 3rd stitches onto one needle.

(See Fig. 71)

- c. The number of needles with double stitches is the number of stitches to be decreased.

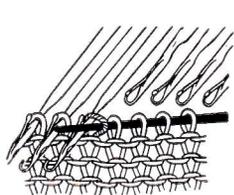


Fig. 70

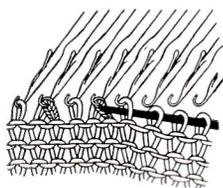


Fig. 71

10. How to replace the needle

- a. Push the either side of the felt bar end piece by the end of latch tool. From the other side, the felt bar end comes out.

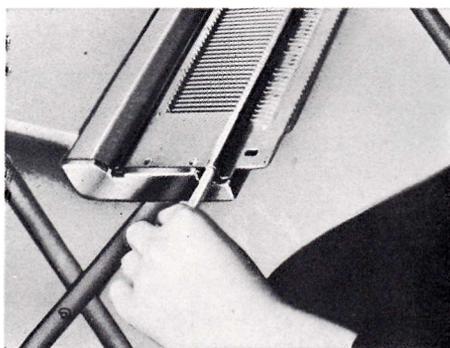


Fig. 72

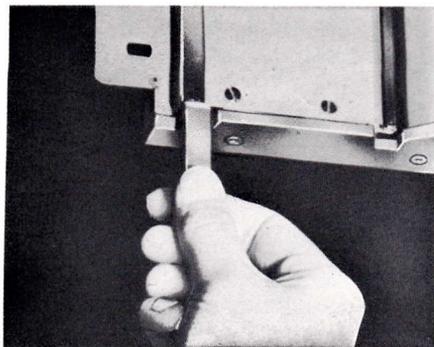


Fig. 73

- b. Grasp it by hand and draw out from the knitter until the needle you wish to change is freed. (See Fig. 72, 73)
- c. Bring forward the needle as they will go.
- d. Push down the hook of the needle, until shank end of the needle comes out from the needle bed upper surface.
- e. Grasp the shank end by finger and draw out it to the backward direction. (See Fig. 74)
- f. Replace with a new needle by holding it as shown in Fig. 75. (with latch opened)

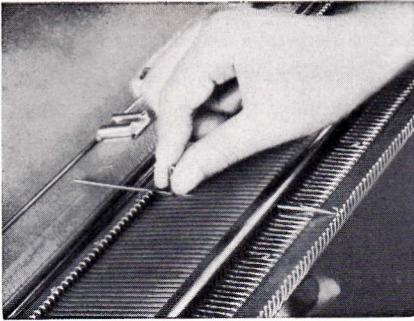


Fig. 74

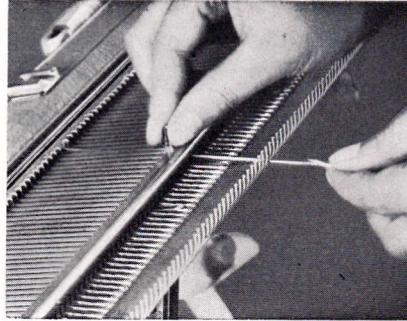
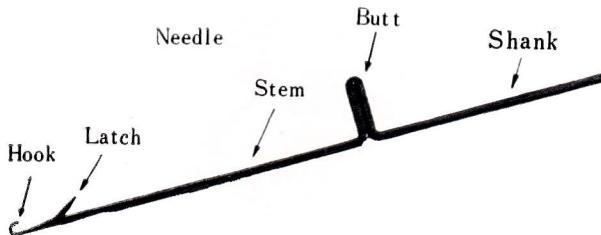


Fig. 75

- g. Now push back the needle to the resting position (A).
- h. Push in the felt bar, making sure that the felt faces downward.

Note : Make sure that both felt bar end pieces must not be out from the ends of the lower case.



11. How to determine the tension (gauge)

When knitting either the two-needle or modern Brother Knitting machine way, your tension or gauge determines the tightness or looseness of the stitches and thus the actual size of the knitted garment. Your finger tip controlled tension dial on the knitter, permits an amazingly wide range of tension variation. The larger the number set on the dial, the looser will be resulting gauge or tension.

- a. Determine the proper gauge by making a swatch. Knit a small test piece of about 30 needles, working 30 rows in several different tensions. Knit a single row of a different color between tension changes for easy identification. Block the swatch before measuring for correctness.
- b. Count the number of stitches per inch across, and the number of rows down per inch. Based on this mathematical approach, it soon becomes a simple matter to create your own garments on your knitter, with assurance that the size will be correct. It is recommended to always make a small test swatch before starting a garment to prove correctness of gauge.

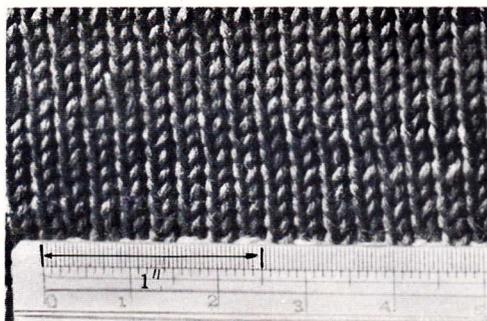


Fig. 76
stitch

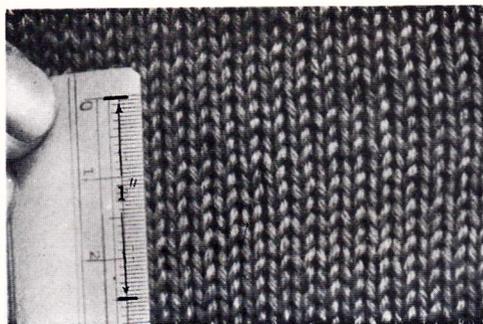


Fig. 77
row

12. Holding Pattern (Stitch formation is as same as tucking)

- a. Pull out the needles which you want to tuck to the Position E.
- b. The position of Pattern Selector Dial is K.
The positions of Change levers are G. (backward position)
(See Fig. 78)
- c. Moving the carriage, the needles in the position B knit the plain knit stitches and the needles in the position E don't move, then the yarn crosses over them.
- d. Move the carriage, the number of rows you like.
- e. Change the positions of change levers from G (backward) to F (forward position), move the carriage, you can get Holding Pattern.

There are many variations of Holding Patterns. (See Fig. 79, 80)

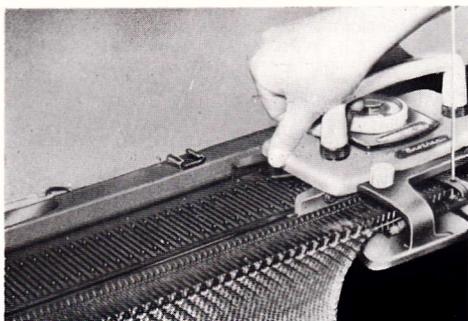


Fig. 78

Example of Holding Pattern ;

- Color A ; white
- Color B ; black
- Color C ; gray



Fig. 79

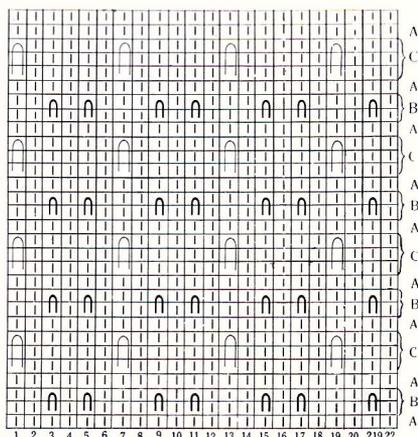


Fig. 80

1. Row 1:Knit even with color A.
 2. Pull out the 3rd, 5th, 9 th, 11th, 15 th, 17 th, and 21st needles to the position E. Set the change levers in the position G (backward position)
 3. Row 2,3 Knit with color B.
 4. Change the positions of the change lever from G to F (forward position)
 5. Row 4:Knit with color A.
 6. Pull out the 1st, 7 th, 13 th and 19 th needles to the position E. Change the positions of the change levers from F to G.
 7. Row 5, 6, 7: Knit with color C.
 8. Change the positions of change levers from G to F.
 9. Row 8 : Knit same as Row 1.
- Repeat from 1 to 9 process.

13. Partial Knitting

Partial Knitting is used for shaping a garment, making darts, shaping of a heel, vertical and horizontal buttonholes, neck opening, pockets and pattern stitches.

There are two methods of Partial knitting.

A. Method A-We would like to knit only half the amount of needles.

1. Pull out all the way, 30 of the 60 needles in action on opposite side of the carriage.
2. Set the Pattern Selector Dial to the position "K" (Plain knitting position).
3. Set the Change levers to the position "G". (backward position) (See Fig. 81)

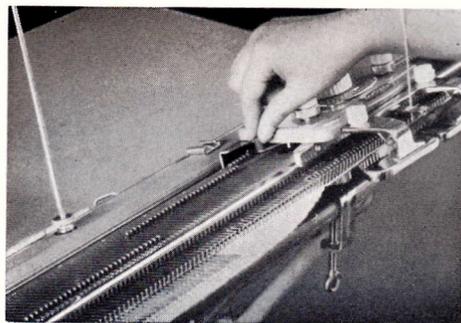


Fig. 81

4. Move the carriage, then only the needles which were not pulled out will make the plain knit stitches.
5. Before moving back the carriage, pass through the yarn which is lying

on the stems of the pushed out needles, underneath the stem of the 31st needle which were pushed out.

6. Move the carriage and knit same needles as the process 4.

Note ; If you don't do the process 5, the hole comes out in the garment.

B. Method B

1. Pull out all the way, 30 of the 60 needles in action on the same side of the carriage.
2. Set the Pattern Selector Dial to the position "P↔".
3. Set the Change levers to the position F. (forward position)
4. Move the carriage, then the needles pushed out will make stitches.
5. When you move back the carriage, pull out the same needles as the process 1 and 31st needle which was not pushed out in the process 1.

C. How to make the inclined line.

There are two cases; in one case, the knitting parts increase and in another case, the knitting parts decrease.

We can use either above methods A or B Partial Knitting.

1) Decreasing knitting parts

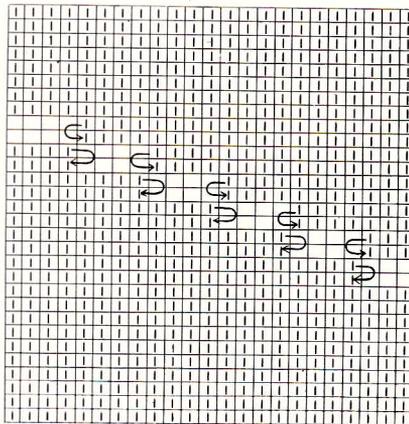
Method A - Bring forward the needles to decrease, from the position B to the position E.

Method B - Decrease the number of needles to bring forward.

2) Increasing knitting parts

Method A - Push down the needles to increase from the position E to the position C, until the stitches on the behind latch ride on the back of the closed latches.

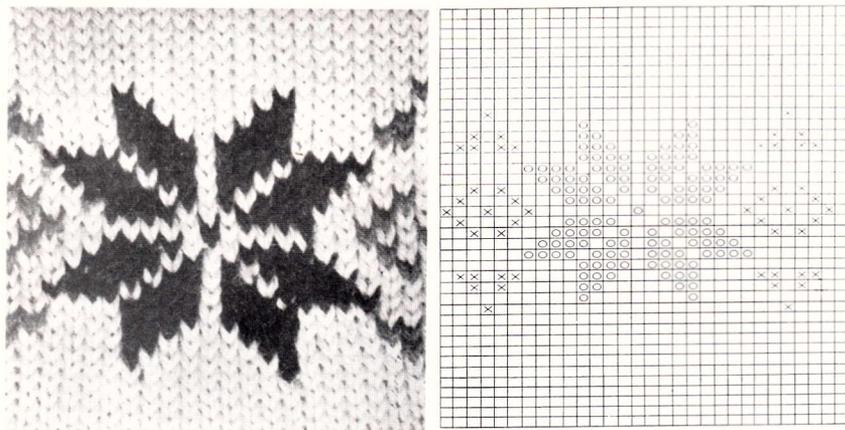
Method B - Increase the number of needles to bring forward.



14. Multicolor knitting (Argyles)

- a) The position of Pattern Selector Dial is "P↔".
The positions of Change levers are "F".
- b) Thread the color A yarn in the yarn feeder and push up the needles which you wish to knit with color A yarn. Knit one row by moving the carriage.
- c) Next row must be knitted with color B yarn. To do this, remove the yarn A and thread color B in the yarn feeder and push up the needles which you wish to knit with this color.
- d) Move the carriage to knit one row with color B. Work row by row using partial knit when changing colors. By repeating the knitting with color A and B alternately, you will get rectangular Argyle Pattern.

To produce a diamond shape or other patterns, you must arrange the needles to knit with color A and B according to the pattern.



15. One time two color knitting method.

Above multicolor knitting method is the basic method. The following method is convenient for more than two colors knitting.

- a) The positions of Pattern Selector Dial and change levers, are as same as above method.
- b) Bring forward all needles having the stitches as they will go. (Position E)

All stitches are hanging on the stems of the needles.

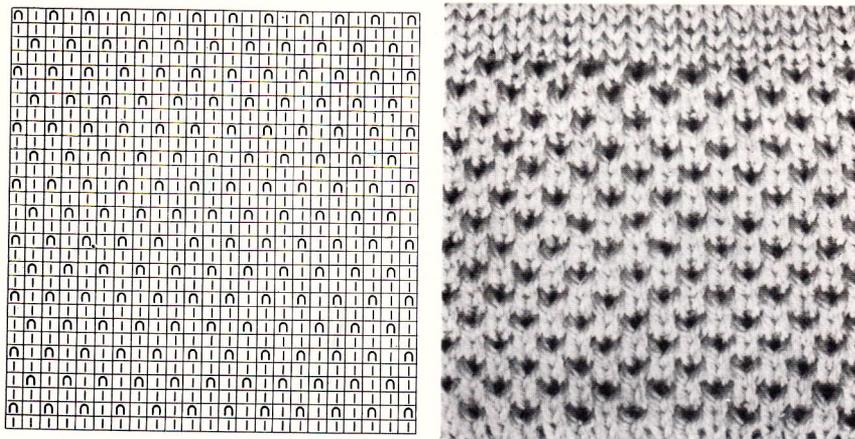
- c) Thread the color A yarn in the yarn feeder. Take the color B yarn in your hand. Place the end of color B yarn in the same side of carriage, lay the color B yarn on the opened latches of the needles which you wish to knit with color B and pass through the color B yarn under the stem of needles which you wish to knit with color A.
- d) Push back the needles which have color B yarn in their hooks, until the last stitches hanging on the stem ride on their closed latches. This position of the needles is "C".
- e) Move the carriage with the color A in the yarn feeder across the needle bed. The needles in the position C will make the stitches of color B. The needles in the position E will make the stitches of color A. Repeat these process you can get same effect of multicolor knitting.

16. Tucking

From the point of stitch formation, tucking stitch is as same as the holding pattern stitch. But from the effect of the tucking, "Tucking" is superior than the "holding stitch".

- a) Knit several plain knitting.
- b) Push up every other needles by using 1/1 needle pusher. Push up needles of both ends at every time in the tucking pattern.
- c) Set the Pattern Selector Dial to the position $T \rightarrow$ or $T \leftarrow$ according that you wish to knit tuck stitch in the right direction or left direction.
- d) Set the change levers to the position "F". (forward position)
- e) Move the carriage across over the needles, then the needles in the position E will make plain stitches and the needles in the position B will have the loop of yarn in their hooks.
- f) Move back the carriage as it is.
- g) Bring forward alternate needles which are different from the needles of process (b).

Repeat from (b) to (g), you can get tucking pattern shown in the Figure.



17. Partial Tucking

This is combination of "Tucking" and "Partial Knitting".

- a) The position of the Pattern Selector Dial is as same as "Tucking".
- b) But the position of the change lever is different from "Tucking". It must be in the position "G".
- c) The positions of the needles in the non-knitting part are "E".
- d) The positions of the tucking needles are "B".
The positions of the knitting needles are "D".

Make sure that the latches of position D must be opened.

18. How to fold up the knitter.

- a) All needles are placed in the position "A". (resting position)
- b) Take off the row counter and replace in the parts box as shown in Fig. 82.
- c) Take off the sinker plate and replace in the parts box as shown in Fig. 82.

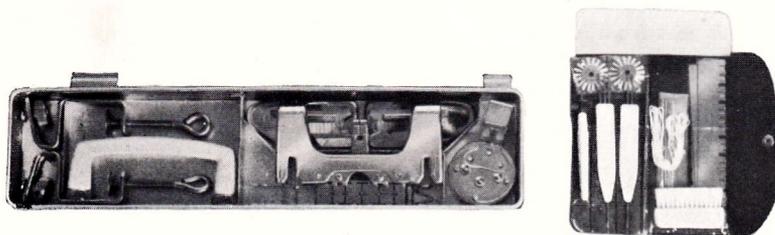


Fig. 82

- d) Pull out the automatic yarn feeder from the upright rod, and replace it in the original place.
- e) Take off the yarn guide from the upright rod and replace it in the parts box.
- f) Unscrew the automatic yarn feeder upright rod and replace it inside the upper case.

Pass through the taper end of the rod in the hole A and place the bottom end on the screw B and fasten the lock nut. (See Fig. 83)

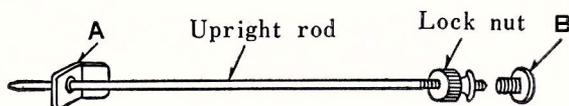


Fig. 83

- g) Take out the carriage lock from the parts box, and lock the carriage to the left end of the knitter.
- h) Remove the carriage handle and replace it in the parts box as shown in Fig. 82.
- i) Remove the table clamps from the knitter and replace it in the parts box as shown in Fig. 82.
- i) Replace the plastic kit on the table clamps and the carriage in the parts box.
- k) Replace the parts box on the right side of the knitter. The right foot must be placed on the non-needle part and left foot must be placed between two ribets on backward of the knitter, then the butts of the needles fit in the holes of the left foot of the parts box. (See Fig. 84)

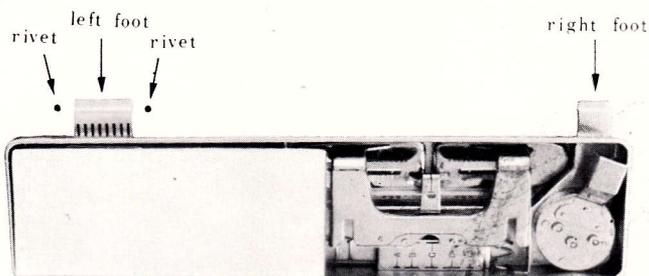


Fig. 84

- 1) Open the side covers of the upper case, and place it on the knitter as shown in Fig. 85 with curving motion.

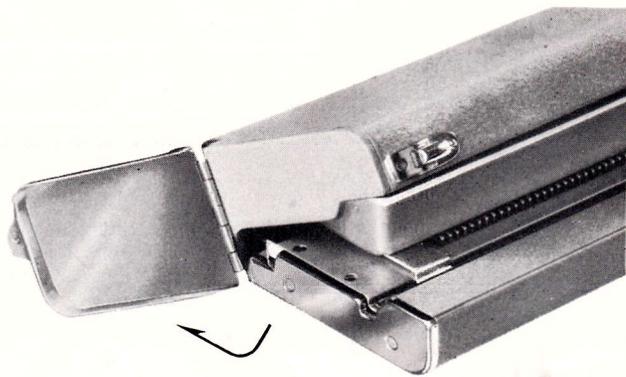


Fig. 58

- m) Close the side covers and lock the four locks. (See Fig 86)

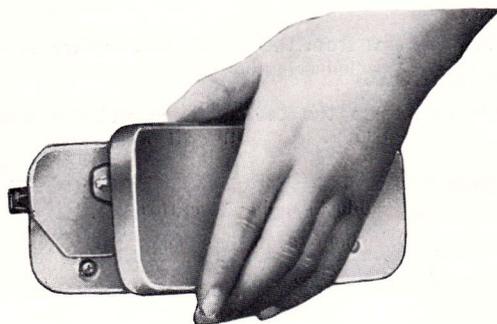
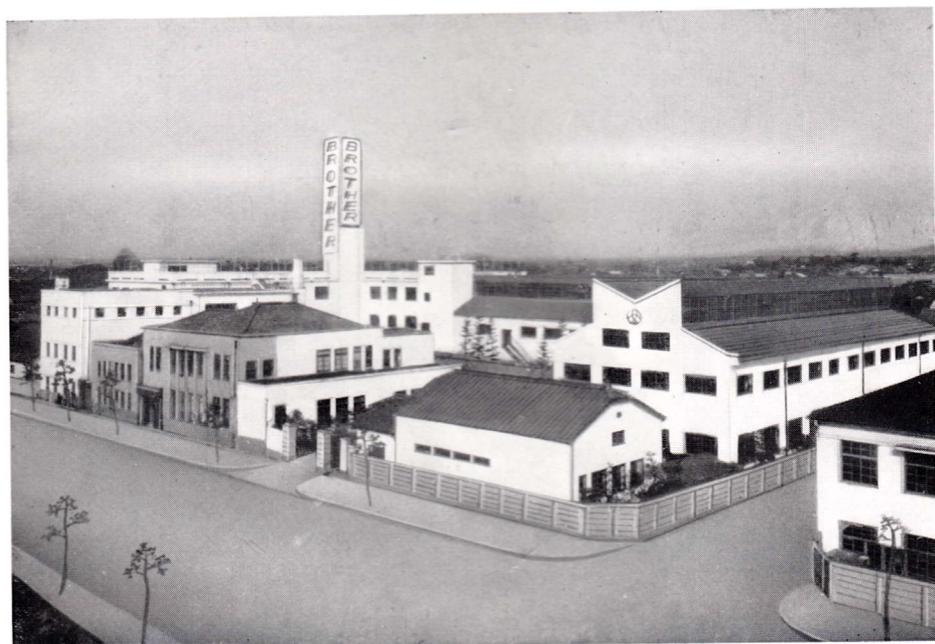
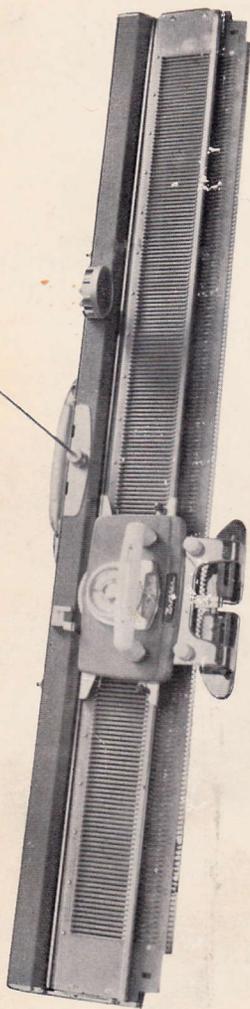


Fig. 86



BROTHER products have earned world-wide recognition. The name **BROTHER** is synonymous with precision . . . quality . . . dependability. The **BROTHER** sewing machine factory, manufactures for over forty years of home appliances has maintained a leading standard of precision engineering. The most accurate tools and instruments ever conceived are employed by skilled workmen who pride themselves in superior workmanship, **BROTHER** enjoys world reknown as manufacturers of a complete line of sewing machines, knitting machines, washing machines, food blenders, steam irons and motorcycles. The **BROTHER** name on your appliance assures you efficient, trouble-free performance, you may expect unsurpassed quality and pleasure as a **BROTHER** user !



**BROTHER KNITTING
MACHINE**