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229	1162	1163	1164	1165	1166
230</					

LIST OF CONTENTS

Chapter 1

GENERAL INSTRUCTIONS

1. To insure perfect functioning of machine	page 3
2. Recommended needle and thread sizes	» 4
3. To insert needle	» 4
4. To thread machine	» 5
5. To thread needle with threader	» 5
6. To wind empty bobbin	» 6
7. To remove bobbin case	» 6
8. To insert bobbin into bobbin case	» 7
9. To insert bobbin case	» 7
10. To adjust tension	» 8
11. To regulate stitch length	» 9
12. To start sewing	» 9
13. To drop feed dog	» 10
14. To remove work from machine	» 10
15. To change the position of multiple needle plate	» 11
16. To connect machine to local electricity supply	» 12
17. To run machine	» 12
18. Lighting	» 13
19. To replace light bulb	» 13
20. Maintenance of machine	» 14
a) Oiling	» 14
b) To remove and replace the shuttle	» 15
c) To clean feed dog and needle plate seat	» 15
d) To disassemble and reassemble upper thread tension	» 16
21. Causes of minor difficulties	» 17

Chapter 2

SEWING WITHOUT AUTOMATIC MECHANISM

22. Straight sewing	» 19
23. Tacking	» 19
24. Basting	» 19
25. Zig-zag sewing	» 20
26. Zig-zag embroidery	» 20
27. Twin needle	» 22
28. Circular sewing	» 23
29. Hemming	» 24
a) Straight stitch hem	» 24

b) Narrow rolled edges	page 24
c) Shell stitch hem	» 24
d) Hemming and sewing on laces	» 25
30. Flat felled seams	» 25
31. Overlockstitch	» 25
32. Hemstitching with drawn threads	» 26
33. Picot hem	» 26
34. Applique work	» 26
a) Applique with picot stitch	» 26
b) Cut-out work	» 27
c) Lace edging	» 27
d) Raised stitch applique	» 27
e) Contrast work applique	» 27
35. Adjustable stitching guide	» 28
36. Darning	» 28
37. Quilting	» 29
38. Embroidery and monogram with hoop	» 29
39. Sewing on buttons	» 30
a) Two-hole buttons	» 30
b) Four-hole buttons with parallel stitching	» 30
c) Four-hole buttons with cross-stitching	» 30
40. Hand-operated buttonholes	» 31
a) Raised buttonholes	» 31
b) Flat-stitched buttonholes	» 31
41. Blindstitching	» 32

Chapter 3

SEWING WITH AUTOMATIC MECHANISM

42. To prepare the cams	» 33
a) Three-cam groups	» 33
b) Loose cams	» 33
43. To insert cams into machine	» 34
44. To remove cams from machine	» 34
45. To stop motion of automatic mechanism	» 34
46. Use of the selector device	» 35
47. Foot for raised scallops	» 35
48. Automatic buttonholes	» 36
a) To make buttonhole	» 36
b) Flat-stitched buttonholes	» 37
49. Automatic blindstitching	» 37
50. Smock stitch	» 38
51. Lever for micrometric adjustment of design	» 38
Charts of automatic embroidery designs	» 39

Chapter 1

GENERAL INSTRUCTIONS

NOTE: minor innovations to the sewing machine mechanisms against the description given in this book, may depend on continuous improvements in the production cycles.

1. TO INSURE PERFECT FUNCTIONING OF MACHINE

Always bear in mind the following rules:

- Balance wheel must always be turned toward the operator;
- Do not try to help feeding by pulling fabric, since this action would bend needle. The machine automatically feeds the fabric without assistance;
- Do not operate machine with presser foot resting on feed dog unless there is cloth in between;
- Keep a small piece of cloth underneath presser foot whenever machine is not in use. This will prevent damage to feed dog and presser foot;
- Always bring presser bar lever to its lowest position before starting to sew.

2. RECOMMENDED NEEDLE AND THREAD SIZES

NECCHI machines use Syst.
15 x 1 or Syst. 705 needles

Types of Fabrics and Classes of Work	Sizes of Thread		Sizes of Needles	
	Mercerized Cotton	Silk	Syst. 15x1	Syst. 705
Very thin fabrics like muslin, chiffon, batiste, fine linen cambrics. For lingerie, infants' wear and delicate lace work.	80 to 150	0 and 000 Twist	10	70
Shirtings, sheetings, calicoes, silk and cotton, light weight woollens. For general household sewing and all classes of general work.	60 to 80	A & B Twist	14	90
Heavy calicoes and silk, light weight woollens, heavy cretonnes, muslin, brocades and quilts. For men's work shirts, smocks and aprons, quilting and fabric furnishing.	40 to 60	C Twist	16	100
Bed tickings, upholstery and awning material, slip cover fabric, woollen goods, heavy woven coating, light weight canvas. For trousers, boys' clothing, work uniforms, awning and slip covers.	30 to 40	D Twist	18	110
Heavy tickings and woollens, heavy woven suiting and coating, canvas and sacking. For heavy clothing in general, such as heavy uniforms, coats, trousers, bedding supplies, bags etc.	24 to 30	E Twist	19	120

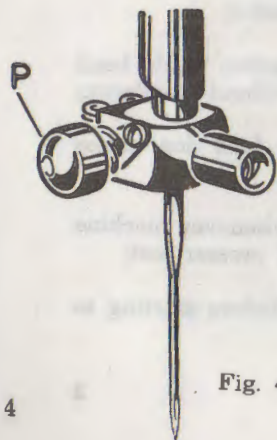


Fig. 4

3. TO INSERT NEEDLE

- Bring needle clamp to its highest position by turning balance wheel towards you;
- Push button « P » (Fig. 4);
- Push needle up into needle-clamp as far as it will go and release button « P »;

IMPORTANT: flat side of needle shank must be turned toward the right.

4. TO THREAD MACHINE

Pass thread through points shown in Fig. 5. After having passed thread between tension discs housing « C », hold thread between the two thread guides « A » in the same time slightly pulling thread towards the right so that it pulls up spring « M » and places itself astride of hook « D ».

The threading of spring « M » is automatically performed on the condition that tension regulating knob be at least on « 4 ».

Pass thread through needle eye from left to right leaving about 4 inches hanging free.

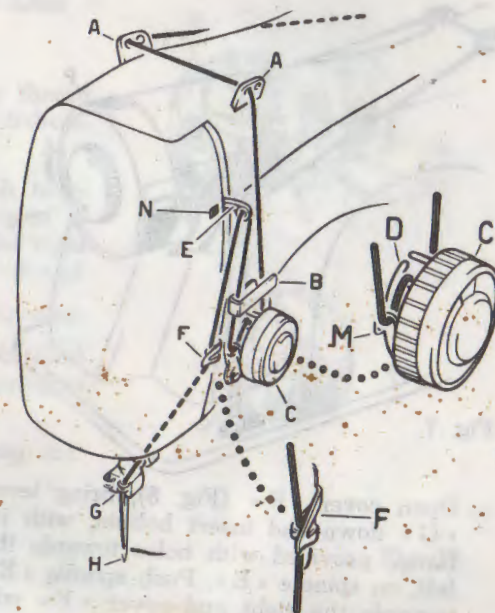


Fig. 5

5. TO THREAD NEEDLE WITH THREADER

- Bring needle to its highest position and thread take-up lever « E » in correspondence with mark line « N » on front plate (Fig. 5);
- Bring levers « B » and « C » (Fig. 1) to the left and remove cams;
- Rotate button « R » (Fig. 6); hook « S » will pass through needle eye;
- Pass thread on hook « S » and draw threader away from needle in the direction of the arrow, rotating button « R »;

NOTE: The magnifying glass « L » can be lowered and turned, to see whether thread has been properly caught by hook « S ».

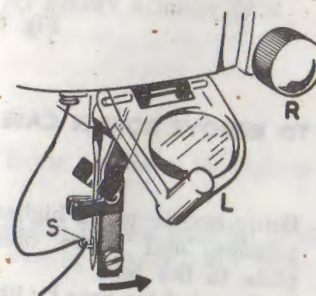


Fig. 6

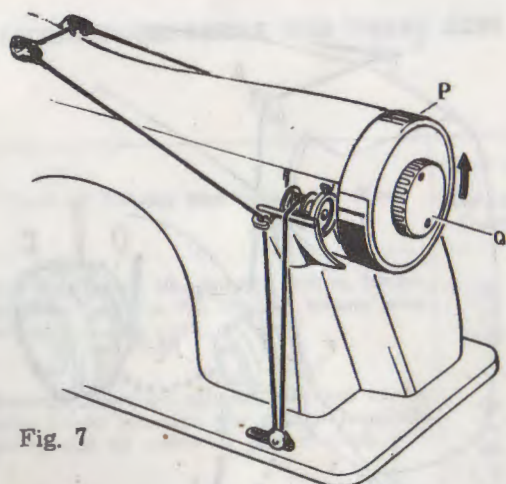
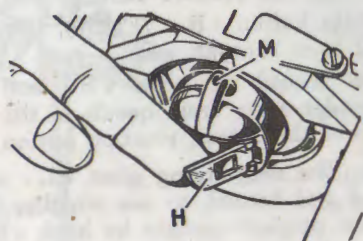


Fig. 7

- Open cover « F » (Fig. 8), bring lever « G » down and insert bobbin, with its flange provided with holes towards the left, on spindle « E ». Push spindle « E » towards the right and cover « F » will remain open.
- Hold with the left and the end of the thread hanging from the hole and run machine: after a few turns the thread, held by the hand, will be automatically cut.
- When bobbin is full, the bobbin winder automatically stops and cover « F » snaps back into place.
- Open cover « F », press on lever « G » and remove filled bobbin.

Fig. 9



6. TO WIND EMPTY BOBBIN

- Disconnect balance wheel « P » by turning knob « Q » in the direction of the arrow (Fig. 7).
- Pass thread through points indicated in illustration and insert it from the inside to the outside into one of the two holes of the bobbin flange, leaving about 4 inches of thread hanging free.

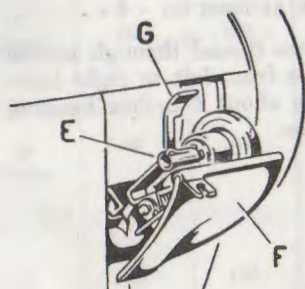


Fig. 8

7. TO REMOVE BOBBIN CASE

- Bring needle to its highest position and move slide plate to the left.
 - Remove bobbin case by lifting latch « H » and pulling it to the left.
- NOTE: The bobbin will drop out when latch is released.

8. TO INSERT BOBBIN INTO BOBBIN CASE

- Insert bobbin into bobbin case; thread must be wound around bobbin as indicated in Fig. 10a.
- The bobbin flange provided with holes must be turned toward the outside of the bobbin case, in order that the right direction of rotation should be insured.
- Insert thread into groove of bobbin case.
- Lift latch « H » so that bobbin is blocked and draw thread under tension spring as indicated by Fig. 10b.

Let about 4 inches of thread hanging out.

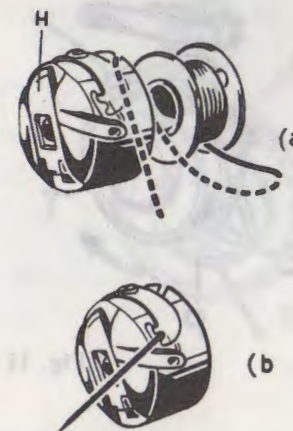


Fig. 10

9. TO INSERT BOBBIN CASE

- Bring needle to its highest position and move slide plate to the left;
- Insert bobbin case by latch « H » (Fig. 9) and place it on center stud of shuttle. Finger « M » must go into notch of shuttle ring;
- Release latch « H » and press on bobbin case until a click is heard;
- Let about 4 inches of thread hanging out.

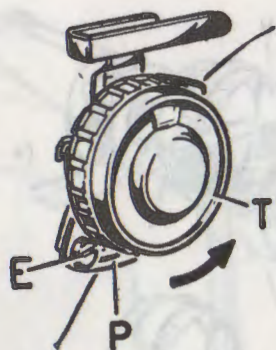


Fig. 11



Fig. 12



Fig. 13



Fig. 14



Fig. 15

10. TO ADJUST TENSIONS

- To loosen the upper thread tension, turn button « T » (Fig. 11) in the direction of the arrow. By turning button « T » in the opposite direction the tension will be increased.

NOTE: the normal value of the upper thread tension is indicated on the knob by a small red disc.

- The lower tension is increased by tightening screw « G » (Fig. 12); it is decreased by loosening same.

- The upper and lower threads must lock in the centre of the fabric (Fig. 13), that is, their tensions must be even. In this condition, two faults may occur:

- Even tensions, too loose. The stitches are loose. It is then necessary to increase both tensions.
- Even tensions, too tight. The fabric ruffles or the thread breaks. It is necessary to loosen both tensions.

- If the upper tension is tighter than the lower, the upper thread will lie flat on top of fabric and the lower thread will be pulled to the upper surface (Fig. 14) and be visible there in small knots. Adjust tensions by tightening the lower tension and loosening the upper one.

- If the lower tension is too tight, the lower thread will lie flat on the underside of the fabric (Fig. 15); therefore tighten the upper tension and loosen the lower.

NOTE: When sewing on hard or thick fabrics, it is advisable to loosen screw « E » (Fig. 11) and slightly move small plate « P » in the direction opposite to that of the arrow.

11. TO REGULATE STITCH LENGTH

- Turn button « D » (Fig. 16); the stitch length expressed in mm. is visible through small window « F ».

The normal stitch length is no. 2.

The stitch length normally required for satin stitch (see Para. 26) is indicated by a red square mark.

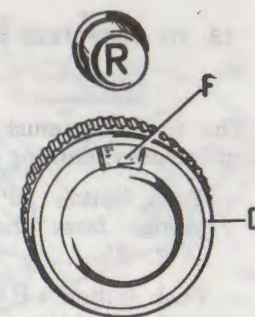


Fig. 16

To reverse direction of sewing

- Push button « R » completely (Fig. 16); the machine will sew in reverse with the stitch length regulated by button « D ».
- The machine resumes sewing forward as soon as button « R » is left free.

12. TO START SEWING

- Holding the thread hanging out of the needle eye, turn balance wheel to bring needle to its highest position.
- Draw the upper thread; the lower thread will be pulled up through the hole of needle plate.
- Place both threads behind presser foot.

Start sewing slowly, holding the threads for the first 4-5 stitches.



Fig. 17

13. TO DROP FEED DOG

The feed dog must be dropped for hoop embroidery, darning and sewing on buttons.

- Turn button «P» so that one of its prongs faces the square mark «Q» (Fig. 18).
- Push button «P» down; it will remain in this position.

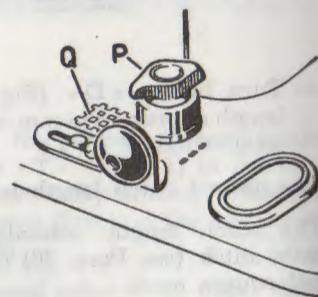


Fig. 18

To raise feed dog, turn button «P» so that one of its prongs faces the opposite mark «S» (Fig. 19).

NOTE: The feed dog can be dropped from time to time, by leaving one of the prongs of button «P» facing alignment mark «S».

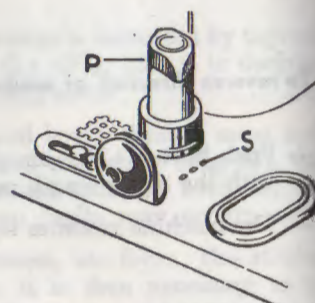
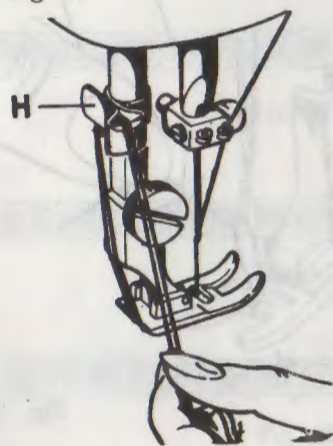


Fig. 19

Fig. 20



14. TO REMOVE WORK FROM MACHINE

- Bring needle and thread take-up lever to their highest position and raise presser foot.
- Draw fabric away from presser foot and draw threads, keeping them taut, through thread-cutter «H» (Fig. 20).
- Cut threads and remove fabric.

The ends of both threads will be held by the thread cutter and the machine will be ready to perform another seam without requiring that the threads be held by the operator during the first 4 or 5 stitches.

15. TO CHANGE THE POSITION OF MULTIPLE NEEDLE PLATE

The needle plate can be fitted in 3 different positions (Fig. 21) which are used as follows:

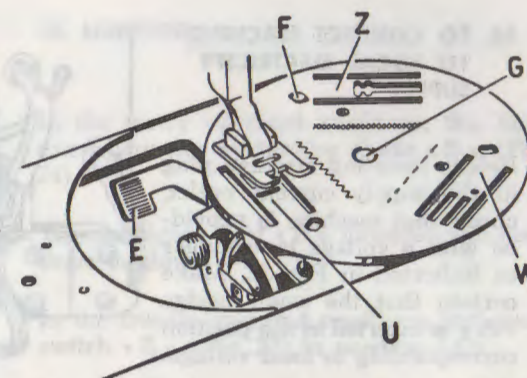


Fig. 21

U - for straight and zig-zag sewing.

W - for straight stitch on light fabrics (nylon, silk) with the needle position lever (Fig. 1) in left notch and the presser foot for straight stitch.

Z - for twin needle sewing.

To fit needle plate in each one of the 3 positions:

- Drop feed dog (see para. 13), bring needle to its highest position and move slide plate to the left.
- Press lever «E» and the needle plate will lift itself.
- Turn the needle plate around until the desired position is under needle. Locating pin «F» will enter the corresponding hole in the plate.
- Press central pin «G». The plate will block itself automatically.
- Raise feed dog.

NOTE: The needle plate can be removed by pressing lever «E» completely.

16. TO CONNECT MACHINE TO LOCAL ELECTRICITY SUPPLY

Before inserting machine plug in the supply current outlet, check that machine is provided with a voltage tap-changer as indicated in Fig. 22. Make certain that the small bridge « A » is inserted in the position corresponding to local voltage.

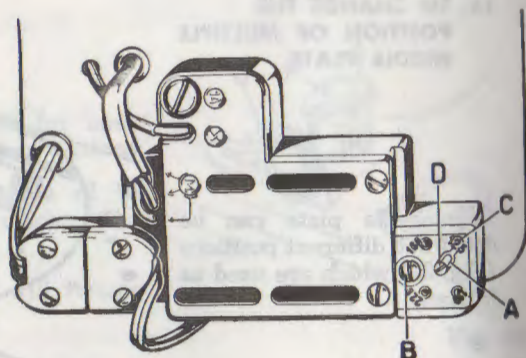


Fig. 22

If it is not, proceed as follows:

- Remove screw « B » and transparent cover plate.
- Remove screw « C » and loosen screw « D ».
- Turn small bridge « A » round so that its extremity faces the hole corresponding to the local voltage.
- Tighten screws « C » and « D » and replace transparent cover plate by means of screw « B ».

17. TO RUN MACHINE

- Connect machine to the electric line.
- Push switch « Z » (Fig. 23) in position « L ». The red signal light « R » (Fig. 24) will light up.
- Start machine by pressing on foot control.

If you wish to sew with the maximum speed, push switch « M » in position « MAX ». To reduce speed, push it in position « MIN ». NOTE: The machines for treadle operation only are not provided with switch « M ».

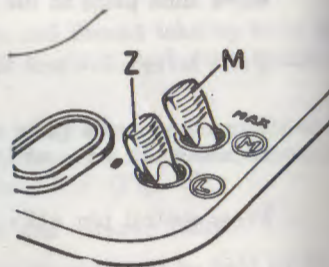


Fig. 23

18. LIGHTING

In the motor operated machines, the light can be cut out by turning shade « S » (Fig. 24).

The red signal light « R » however will continue to glow.

In the treadle operated machines, just push switch « Z » (Fig. 23) in position « O ».

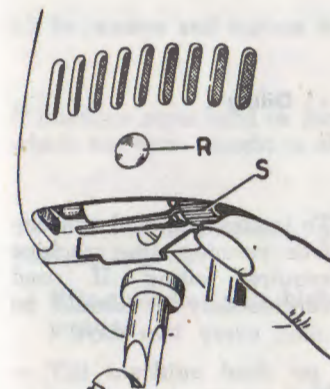


Fig. 24

19. TO REPLACE LIGHT BULB

- Open front plate.
- Remove light bulb « P » together with its shade from lamp holder « V » (Fig. 25).
- Remove light bulb from shade into which it is inserted by pressure.
- Insert new bulb into shade and insert it into lamp holder, by pressing slightly against wall portion « Q » to insure electric contact.

Use only NECCHI bulbs.

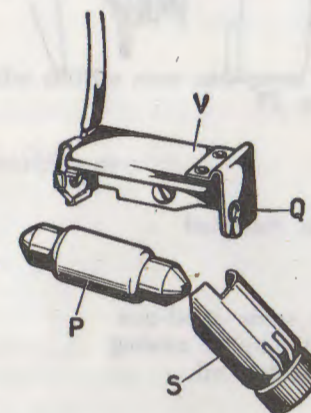


Fig. 25

20. MAINTENANCE OF MACHINE

a) Oiling

To insure easy and trouble-free running, the machine requires oiling. If used continuously, it should be oiled every two days.



Fig. 26

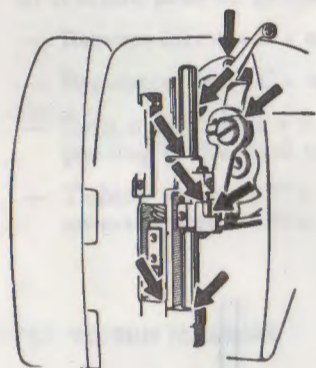


Fig. 27

The oiling points are indicated in Figs. 26, 27 & 28.

Let fall about ten drops of oil in hole « A » (Fig. 26).

From time to time also oil shuttle rim and shuttle race (see para. 20b).

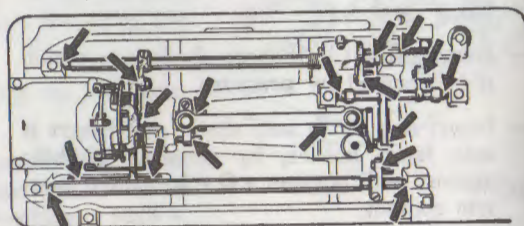


Fig. 28

Use Necchioil

or some good-quality light sewing machine oil.

b) To remove and replace the shuttle

If machine runs hard or jams slightly, this may be due to a piece of thread which has been caught in shuttle race.

To correct this condition, proceed as follows:

- Bring needle to its highest position.
- Tilt machine back on its hinges and extract bobbin case.
- Push spring « Z » sideways with thumb of right hand (fig. 29).
- Turn race plate « T » around its hinge.
- Extract shuttle « R ».

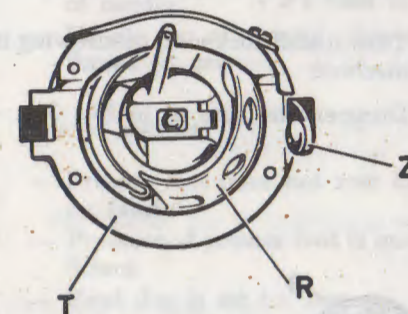


Fig. 29

- Carefully clean with a small brush and put a drop of oil in the shuttle race. Also oil the rim of the shuttle.
- Replace shuttle.
- Fit race plate onto the two short studs on the shuttle race and press it until spring blocks it in its housing.
- Replace bobbin case and lower machine to working position.

c) To clean feed dog and needle plate seat

- Remove needle plate (see note, para. 15).
- Clean feed dog teeth and needle plate with a small brush.

d) To disassemble and reassemble upper thread tension

To disassemble tension:

- Place button « A » (Fig. 30) on 0.
- Pull it out so that hook « B » comes out of hole « C ».
- Turn it anticlockwise, unscrewing it from machine.
- Disassemble parts as in Fig. 31.

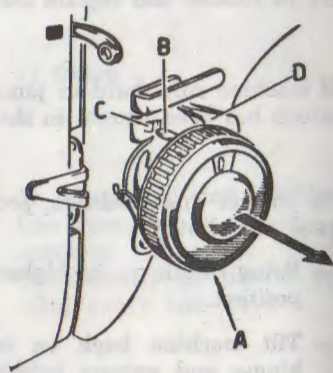
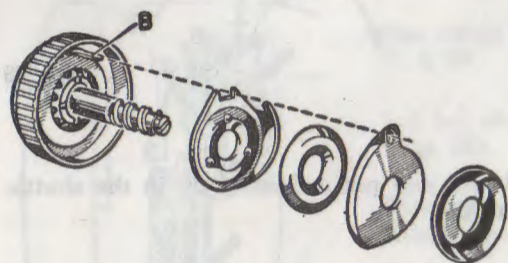


Fig. 30



Carefully clean all the surfaces of parts.

Fig. 31

- Assemble parts exactly as shown in Fig. 31 and in such a way that the « 0 » mark will be visible on button « A ».
- Screw the device onto the machine (press slightly and turn it anticlockwise; when a click is heard, turn it in the opposite direction).
- When small hook « B » comes into contact with chrome plated plate, draw button toward you and turn it again, bringing small hook into hole « C ».

21. CAUSES OF MINOR DIFFICULTIES

Needle thread breaks

- Needle is inserted incorrectly
- Upper tension is too strong
- Machine is improperly threaded
- Thread is not suitable for fabric
- Thread has knots
- Needle eye is rough or sharp
- Needle is too fine
- Needle point is damaged, bent or blunt
- Needle plate hole is damaged
- Machine is started at full speed
- Sewing is started with thread take-up lever not in its highest position
- Bobbin case is damaged, due to being hit by needle
- Shuttle race is damaged

Needle breaks

- Fabric is pulled by hand in such a manner that needle hits needle plate
- Needle is bent or blunt

Lower thread breaks

- Lower thread tension is too tight
- Bobbin not evenly filled
- Bobbin is too full and does not rotate into bobbin case
- Dirt or lint in bobbin case

Skip stitches

- Needle is inserted incorrectly
- Needle is bent or blunt
- Thread is too heavy for the size of needle
- Needle is of wrong size for thread in use

Uneven stitches

- Presser foot does not rest fully on fabric
- Pressure of presser foot is insufficient
- Feed dog is set too low
- Fabric is pulled by hand
- Stitch is too short
- Needle is too fine for thread in use.

Machine does not sew straight stitch

- The cams have not been removed

Heavy turning or jamming of machine

- A loose piece of thread has been caught in shuttle race
- Motor belt is too tight (adjust it by loosening the motor fastening screws)
- Machine is not lubricated
- Needle has blunt point

In case you cannot adjust the trouble, call for a mechanic at your local NECCHI Dealer

Light does not go on

- Line has no current (check fuses and master switch)
- Plug is not well inserted in its receptacle
- Filament of bulb is broken
- Voltage tap-changer and/or four-way plug are not well inserted

Light is too bright or too dim

- Control the position of the voltage tap-changer

Although light is on, motor fails to turn.

- The four-way plug is not well inserted in its receptacle
 - See the reasons mentioned under para.: « Heavy turning or jamming of machine ».
- In case you cannot find or adjust the trouble, call for a mechanic at your local NECCHI dealer.

IMPORTANT: It is possible that, after considerable use, the mechanical parts of the machine will require adjustment. If, by referring to the aforementioned causes of trouble, you cannot bring your machine into good condition, call for your NECCHI dealer. He will put the machine into perfect working order.

Motor turns too rapidly

- Check whether voltage tap-changer is correctly set

Motor turns too slowly

- A piece of thread is caught in shuttle race
- Motor belt is too tight
- Machine is not lubricated
- Check whether voltage tap-changer is correctly set

Overheating of motor, foot-control and/or bed plate

All electrical equipments heat up when running without causing damage. Excessive heating can only be due to overloading or heavy turning of machine. It can be eliminated by running machine more easily.

Chapter 2

SEWING WITHOUT THE AUTOMATIC MECHANISM

NOTE: To execute the sewing works described in this chapter, it is necessary to remove cams from machine and stop the automatic mechanism (see para. 44 & 45).

22. STRAIGHT SEWING

Zig-zag stitch lever « C » (Fig. 1): in left notch.

Stitch length knob « D »: set for desired stitch length. Normal length is on no. 2.

NOTE: for straight seams on light fabrics, see para. 15.

23. TACKING

After you have finished sewing, reinforce the seam by pressing button « R » (Fig. 16) thus making a few stitches in reverse.

24. BASTING

Proceed as for normal sewing, but set knob « D » (Fig. 1) for the maximum stitch length and loosen upper thread tension « T » (Fig. 11). This makes it possible to effect long and loose stitches which can be easily unraveled.

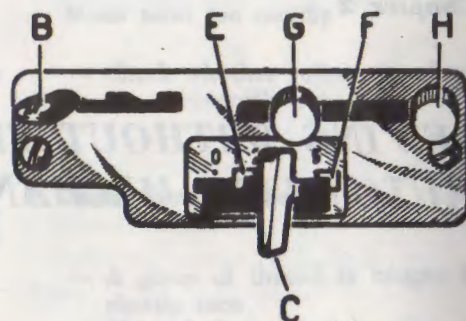


Fig. 32

25. ZIG-ZAG SEWING

Needle plate: on position « U » (see para. 15).

Presser foot: use hinged foot for zig-zag stitch or transparent foot for embroidery.

Needle position lever « B »: set it according to the desired position of the sewing line (left, centre, right).

Zig-zag width lever « C »: set for desired zig-zag width.

NOTE: the small plates « E » and « F » (Fig. 32) which make it possible to limit the displacement of the zig-zag width lever, can be shifted by loosening and displacing the two buttons « G » and « H ».

26. ZIG-ZAG EMBROIDERY

Fig. 33 shows a few motives of zig-zag embroidering, but you can vary them at will.

Set machine as follows:

Presser foot: transparent foot for embroidery.

Tension: upper tension rather loose and lower rather tight.

The upper thread must be visible on the lower side of fabric.

Stitch length knob « D » (Fig. 1): near the red square mark so that the fabric is fed just enough to keep stitches close but not piled up.

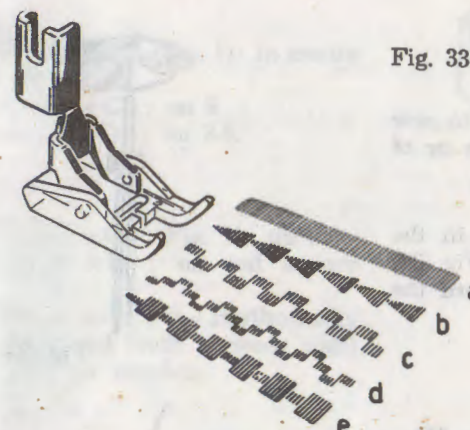


Fig. 33

Use embroidery thread no. 50.

The length of the designs b, c, d, e naturally depends on the speed at which the levers are operated.

a) (SATIN STITCH)

Lever « C » (Fig. 32): set for desired zig-zag width.

b)

Lever « B »: in centre notch.

Slowly move lever « C » from 1 to 5 and flip it back quickly to 1 (set plate « E » on 1).

c)

Lever « C »: on 2.5.

Press down lever « B » and move it from left to right and viceversa without stopping in the centre notch.

d)

Lever « C »: on 1.5.

Move lever « B » rapidly from left notch to centre notch, then to right notch and viceversa.

e)

Lever « B »: in centre notch.

Move lever « C » rapidly between 1 and 4 and viceversa.

27. TWIN NEEDLE

The twin needle makes it possible to sew with two threads of the same colour or of different colours.

The twin needle is to be inserted in the same manner as the normal one, (Fig. 34) with the flat side of its shank toward the right.

Presser foot: for twin needle.

Needle plate: in position « Z » (para. 15).

Lower thread: it must pass by the hole indicated in Fig. 35. Its tension should be rather loose.

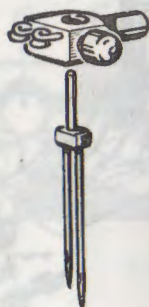


Fig. 34



Fig. 35

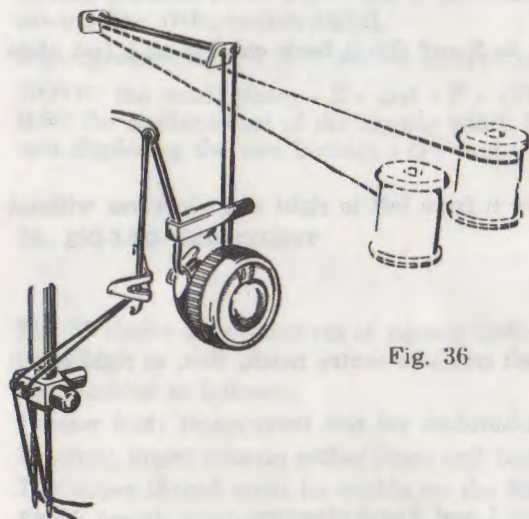


Fig. 36

Thread must pass by points indicated in Fig. 36.

The tension device has double cams between which threads pass separately.

Fig. 37a, b, c, shows some of the decorative stitches which can be made with the twin needle.

a)

Lever « B » (Fig. 1): in centre notch.

Lever « C »: on 5.

Knob « D »: on 3.5.

b)

Lever « C » (Fig. 1): on 2.5.

Knob « D »: on red square mark.

Move lever « B » rhythmically back and forth between right and left notches.

c)

Lever « C » (Fig. 1): on 1.

Knob « D »: on red square mark.

Move lever « B » regularly from left to right and vice-versa.

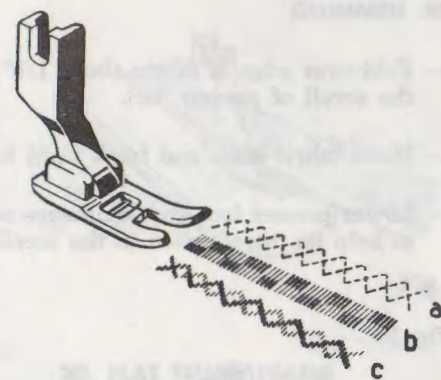
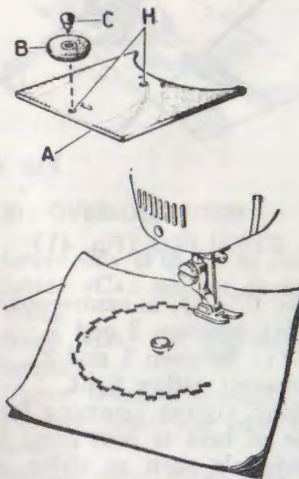


Fig. 37

Fig. 38



28. CIRCULAR SEWING

- Insert small rubber stopper « B » (Fig. 38) in one of the holes « H » of slide plate « A ».
- Fix centre of fabric on rubber stopper « B » by means of pin « C ».
- Keep a finger on pin so that the fabric revolving around the centre point of design does not slip or become detached.

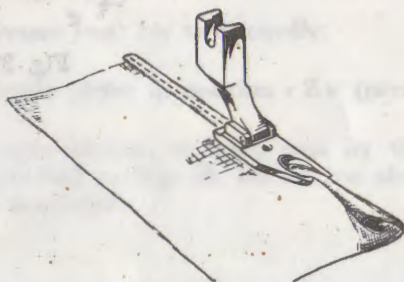
By moving slide plate « A », circles of various sizes can be obtained.

Circular sewing should be done only with materials possessing a certain consistency. With lighter materials, use an embroidery hoop or place a piece of tissue paper under fabric.

29. HEMMING

- Fold over edge of fabric about 1/8" and insert the fold from beneath into the scroll of presser foot.
- Move fabric back and forth until hem forms itself into the scroll.
- Lower presser foot and commence sewing, guiding fabric by hand in order to help its introduction in the scroll.

Fig. 39



a) STRAIGHT STITCH HEM (Fig. 39)

Lever «B» (Fig. 1): in centre notch.
Lever «C»: on the left.
Knob «D»: between 3 and 4.
Upper tension: normal.
Presser foot: straight stitch hemming foot.

b) NARROW ROLLED EDGES (Fig. 40)

Lever «E» (Fig. 1): in centre notch.
Lever «C»: between 2 and 3.
Knob «D»: between 1 and 2.
Upper tension: normal.
Presser foot: zig-zag hemming foot.

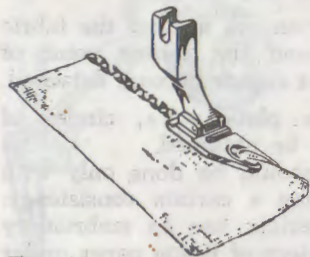


Fig. 41

c) SHELL STITCH HEM (Fig. 41)

Lever «B» (Fig. 1): in centre notch.
Lever «C»: between 2 and 3.
Knob «D»: between 1 and 2.
Upper tension: rather tight.
Presser foot: zig-zag hemming foot.
This type of hem is best done on sheer materials such as nylon or silk.

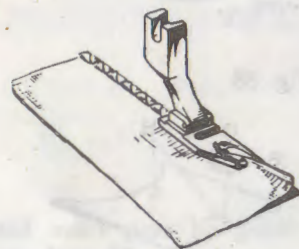


Fig. 40

d) HEMMING AND SEWING ON LACES (Fig. 42)

Set machine as for narrow rolled edges.
After having made the first stitches, raise hemming foot and insert end of lace into slot of hemming foot. Needle must always stitch both through lace and hem.

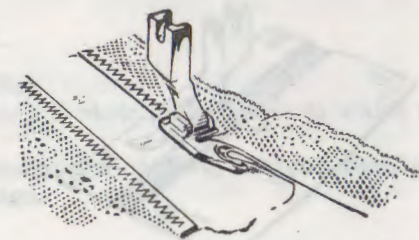


Fig. 42

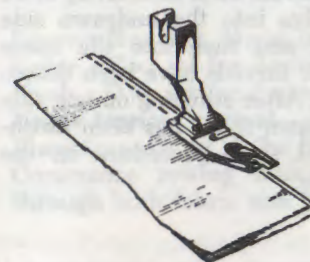


Fig. 43

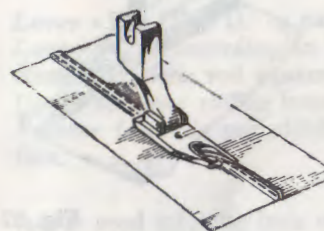


Fig. 44

30. FLAT FELLED SEAMS

Set machine as for straight stitch hem.

- Place a piece of fabric on top of the other so that their right sides face each other. Right edge of bottom piece should protrude about 1/2" beyond right edge of top piece (Fig. 43).
- Sew both pieces of fabric together, using the edge of hemming foot scroll as a guide.
- Open fabrics with their edges standing up.
- Insert edges in hemming foot scroll and sew as for normal straight stitch hem (Fig. 44).

31. OVERLOCKSTITCH

Lever «B» (Fig. 1): in centre notch.
Lever «C»: set for desired zig-zag width.
Knob «D»: set for desired stitch length.
Upper tension: normal.
Presser foot: use foot for zig-zag sewing.
Needle must stitch into the fabric and out of its edge alternately (Fig. 45).

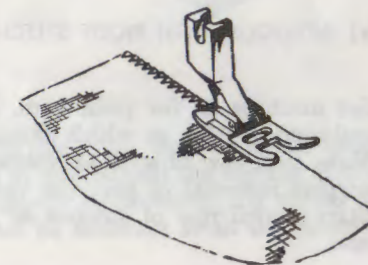


Fig. 45

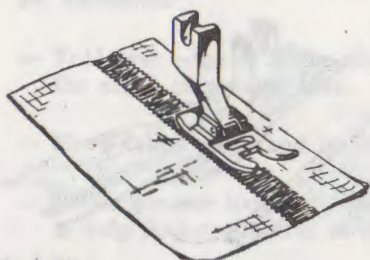


Fig. 46

33. PICOT HEM

Needle plate: in position «Z» (see para. 15).

Lever «B» (Fig. 1): in centre notch.

Lever «C»: between 1 and 2.

Knob «D»: between 0.5 and 1.5.

Upper tension: normal.

Needle: no 21 (syst 15 x 1) or no. 120 (syst. 705).

Make first row of stitches at about 12 mm. from edge of fabric. Make second row in such a way that needle stitches into the outer holes of first row of stitches (Fig. 47). With sharp scissors, cut right in the middle of the two rows.

NOTE: This kind of work is best done on organdy.

34. APPLIQUE WORK

a) APPLIQUE WITH PICOT STITCH

Set machine as for picot hem. Put first piece of fabric under presser foot and second piece on which design is sketched on top of the first. Make first row of stitches following the outline of design and then cut away surplus material of applique very close to the zig-zag stitches. Start second row of stitches so that needle stitches into outer holes of first row.



Fig. 47

32. HEMSTITCHING WITH DRAWN THREADS

Lever «B» (Fig. 1): in centre notch.

Lever «C»: between 1 and 2.

Knob «D»: between 1 and 2.

Upper tension: normal.

Draw desired number of threads from the fabric to be hemstitched and commence sewing, making sure that the needle bites alternately close to the edge into the undrawn side of fabric and then into the space where the threads have been drawn (Fig. 46). After stitching on one side of the drawn space has been finished, repeat same procedure on the other side.

b) CUT-OUT WORK

Set machine as for satin stitch (para. 26a).

Baste fabric on which design (flower etc.) is sketched to fabric to which it will be sewn.

Start sewing, following the outline of design and cut away surplus material, as close as possible to the outline of design.

c) LACE EDGING

Lever «B» (Fig. 1): in centre notch.

Lever «C»: set for desired zig-zag width.

Knob «D»: set for desired stitch length.

Upper tension: normal.

Place lace edging to the hem of the fabric on which it is to be sewn.

Commence sewing making sure that needle, while zig-zagging, stitches through both fabric and lace.

d) RAISED STITCH APPLIQUE

Lever «B» (Fig. 1): in centre notch.

Lever «C»: according to thickness of cord being used.

Knob «D»: on red square mark.

Upper tension: rather loose.

Presser foot: zig-zag stitching cording foot.

Insert cord into the hole of cording foot; then guide it from front to back underneath presser foot. Commence sewing and follow the design carefully.

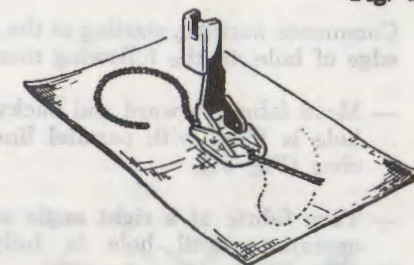


Fig. 48

e) CONTRAST WORK APPLIQUE

Proceed as for raised stitch applique, with the exception of stitch length knob «D» (Fig. 1) which can be regulated at will so that the zig-zag stitches are spaced wide apart so as to let cord appear in between. To obtain the desired contrast, the colour of the cord must be different from the colour of needle thread.

35. ADJUSTABLE STITCHING GUIDE

This guide makes it possible to keep the stitches at a uniform distance from the edge of fabric. It is fitted on machine at the desired distance from needle (see Fig. 49).

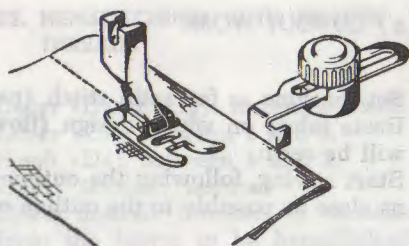


Fig. 49

36. DARNING

Lever «B» (Fig. 1): in centre notch.
Lever «C»: on the left.
Upper tension: normal.
Feed dog: to be dropped (see para. 13).

Presser foot: darning foot. The hole which is on the front of presser foot can be used to pass a reinforcement thread.

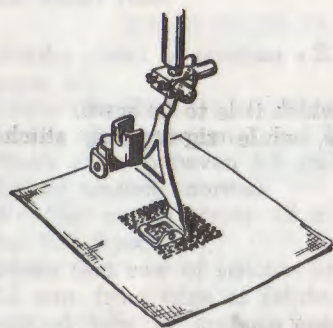


Fig. 50

Commence darning, starting at the left upper edge of hole, in the following manner:

- Move fabric forward and backward until hole is filled with parallel lines of stitches (Fig. 51),
- Turn fabric at a right angle and repeat operation until hole is fully darned (Fig. 52).

NOTE: If large tears or very large thread bare areas are to be darned, it is advisable to clamp the fabric in an embroidery hoop which can be purchased at your local NEC-HI Dealer.

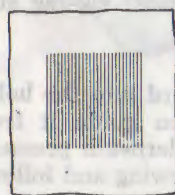


Fig. 51

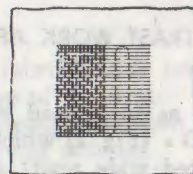


Fig. 52

37. QUILTING

Lever «C» (Fig. 1): on the left.
Knob «D»: set for desired stitch length.

Upper tension: normal.

Presser foot: use zig-zag stitch hinged foot and attach it to machine together with adjustable quilting guide (Fig. 53).

Needle Plate: in position «U» (see para. 15).

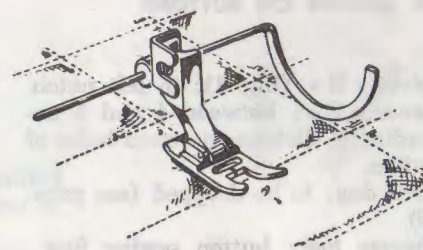


Fig. 53

Regulate position of quilting guide in accordance with the desired distance between two parallel lines of stitches.
Sew first left line, then move fabric toward the right so that guide bar is directly over first line.

38. EMBROIDERY AND MONOGRAM WITH HOOP

For this type of work, use nylon or silk thread or mercerized embroidery thread.

Lever «B» (Fig. 1): in centre notch.
Lever «C»: set for desired zig-zag width.
Knob «D»: on red square mark.
Upper tension: rather loose.
Feed dog: to be dropped (see para. 13).

- Remove presser foot and clamp fabric in hoop.
- Slightly pulling upper thread, turn balance wheel so that lower thread is pulled up to upper surface of fabric.
- Move hoop slowly, but only when needle is out of fabric and holding both threads for the first stitches (Fig. 54).

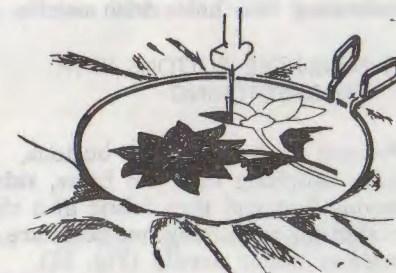


Fig. 54

39. SEWING ON BUTTONS

Lever «B» (Fig. 1): in left notch.
Lever «C»: between 4 and 5 according to distance between holes of button.

Feed dog: to be dropped (see para. 13).

Presser foot: button sewing foot.

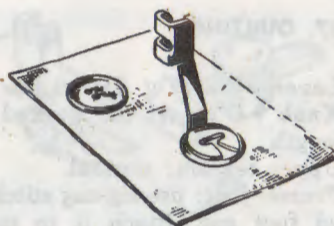


Fig. 55

a) TWO-HOLE BUTTONS

— Turn balance wheel slowly, checking that needle goes through left hole, then through right hole of button; if needle does not clear button, change the position of lever «C» (Fig. 1),

— Run machine at medium speed making about 5 stitches,

— Bring lever «C» to the left and make a few straight stitches in the same hole to tie up zig-zag stitches.

b) FOUR-HOLE BUTTONS WITH PARALLEL STITCHING

Proceed as for two-hole buttons.
After stitching between first two holes, raise button sewing foot slightly and line up the remaining two holes with needle (Fig. 56).



Fig. 56

c) FOUR-HOLE BUTTONS WITH CROSS-STITCHING

Proceed as for two-hole buttons.
After stitching first two holes, raise button sewing foot and turn fabric at a right angle so that the remaining two holes are in proper position under needle (Fig. 57).



Fig. 57

40. HAND OPERATED BUTTONHOLES

a) RAISED BUTTONHOLES

Lever «B» (Fig. 1): in left notch.

Lever «C»: its movement must be limited between 1.5 and 3 (see note on bottom of para. 25).

Knob «D»: on red square mark; check right position by trying out on a piece of fabric similar to that used to make button-hole.

Presser foot: transparent buttonhole foot provided with guide. Regulate position of guide according to desired length of button-hole.

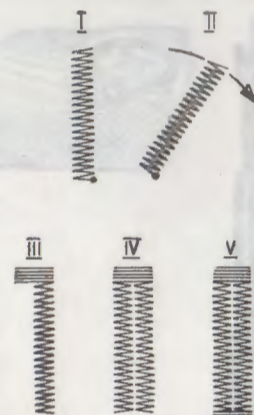


Fig. 58

Upper tension: rather tight; use mercerized cotton no. 40.

Lower tension: rather loose; use mercerized cotton no. 50.

- Bring lever «C» (Fig. 1) on 1.5 and make first row of stitches (Fig. 58, Operation I) going as far as to reach the limit marked by the guide. Leave needle in fabric.
- Raise presser foot and turn fabric half a turn around needle (Fig. 58, Operation II). Lower presser foot.
- Raise needle from fabric and bring lever «C» on 3.
- Make first bar tack with 3 or 4 stitches (Fig. 58, Operation III) and stop sewing with needle out of fabric.
- Bring lever «C» on 1.5 and make second row of stitches as long as the first (Fig. 58, Operation IV). Stop sewing with needle out of the fabric.
- Bring lever «C» on 3 and make second bar tack (Fig. 58, Operation V).
- Remove work and knot threads on the under surface of fabric.
- Cut fabric between the two rows of stitches with NECCHI buttonhole cutter (Fig. 59).

b) FLAT-STITCHED BUTTONHOLES

Proceed as for raised stitched buttonholes with the following exception:

- upper tension: on 4.5. Upper thread no. 50.
- lower tension: normal. Lower thread no. 50.

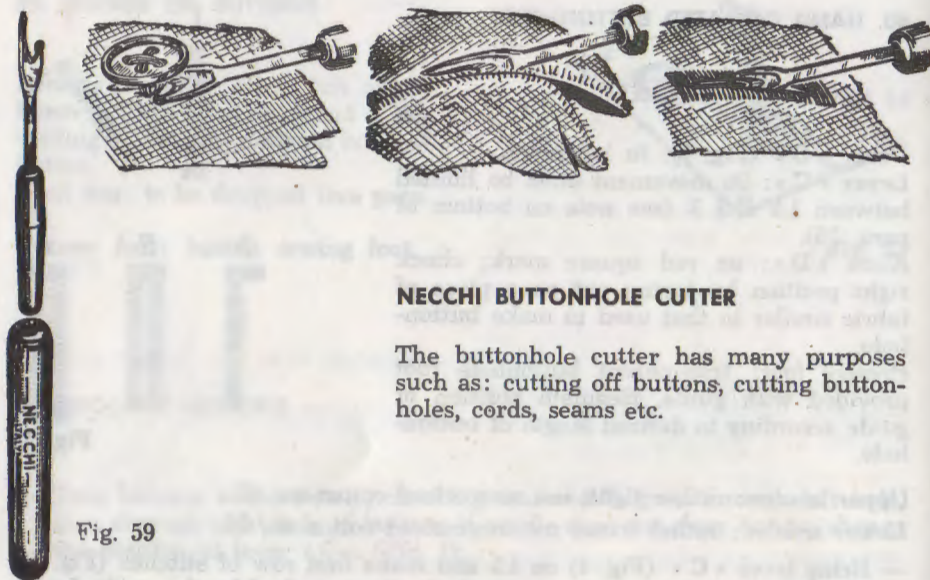


Fig. 59

NECCHI BUTTONHOLE CUTTER

The buttonhole cutter has many purposes such as: cutting off buttons, cutting buttonholes, cords, seams etc.

41. BLINDSTITCHING

Blindstitching makes it possible to sew together two pieces of fabric (a flat piece « M » and a folded one « N ») (Fig. 60), so that stitches appear on one side only.

Lever « B » (Fig. 1): in centre notch.

Lever « C »: move it between 2 and 4 so that needle enters in the middle of the folded fabric.

Knob « D »: on 4.

Presser foot: use hinged transparent foot for zig-zag, provided with blindstitching guide.

Check whether folded edge of fabric « N » is in contact with blindstitching guide. If stitches are visible on the inner side of fabric « N » also, decrease zig-zag width; adjust position of guide by means of screw « F » (Fig. 60). The seam should appear as shown in Fig. 60.

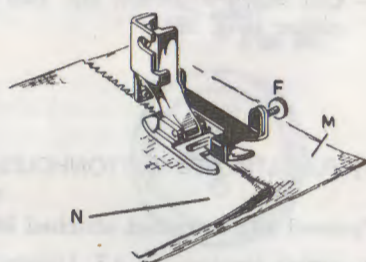


Fig. 60

Chapter 3

AUTOMATIC SEWING MECHANISM

42. TO PREPARE THE CAMS



Fig. 61

a) THREE-CAM GROUPS

The cam-group being already assembled (Fig. 61), there is only to insert it in machine.

b) LOOSE CAMS

- Choose first cam and slip it onto cam-holder bushing « E » (Fig. 62). The face of the cam on which the chosen number is stamped must be turned upwards.
- Slip second and third cams in the same manner and tighten nut « F ».

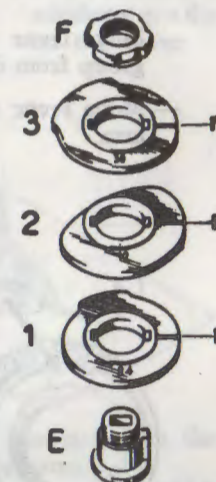


Fig. 62

NOTE: To make the patterns illustrated in the following charts turn mark lines « r » stamped on each cam face in the same direction.

By turning mark lines « r » in different directions, different patterns are obtained.

43. TO INSERT CAMS INTO MACHINE

- Move lever «L» (Fig. 63) to the left.
- Open lid «M» and slip cam group onto cam driving pin «N».
- Move lever «L» back to the right, so that it is flush with machine arm.
- Turn knob «A» on desired number. The length of designs increases from 1 to 4.

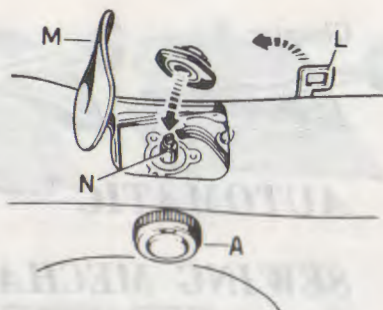


Fig. 63

44. TO REMOVE CAMS FROM MACHINE

- Move lever «L» (Fig. 63) to the left, open lid «M» and remove cam group from driving pin.
- Move lever «L» back to the right, so that it is flush with the machine arm.



Fig. 64

To connect automatic mechanism again, turn button «A» on desired number between 4 and 1.

45. TO STOP MOTION OF AUTOMATIC MECHANISM

- Turn knob «A» (Fig. 64) until diamond mark «R» appears through its small window. Rotate balance wheel for a complete turn.
- Turn knob again until triangular mark «T» appears through small window.

46. USE OF THE SELECTOR DEVICE

The device incorporated in the faces of the accessory box cover makes it possible to select automatically the instructions necessary for the execution of some patterns.

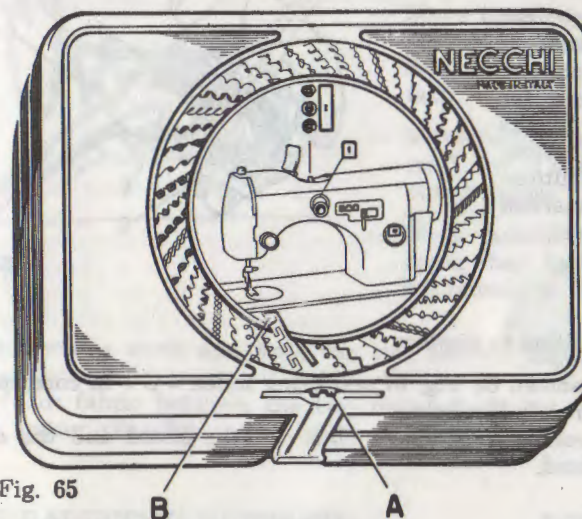


Fig. 65

- Bring desired pattern in correspondence with window «B» by turning knurled dial «A» Fig. 65).

- The instructions necessary for the execution of the pattern will appear through the other small windows made on the cover.

47. FOOT FOR RAISED SCALLOPS

Disc group: use either round scallop disc group 0-0-24 or pointed scallop disc-group, no. IV.

Needle position lever: in left notch.

Zig-Zag width lever: on 2 or more according to string thickness.

Stitch length knob: at red mark.

Presser foot: use raised scallop presser foot.

Use pearl cotton no. 8 of the same colour as the thread, insert it in the hole of the presser foot base and pulling it backward under same.

To make fine scalloping, use pearl cotton no. 12, leaving the zig-zag width always above 2.

For very light fabrics and to make «false lace» reinforce fabric with tissue paper.

Start sewing by operating the machine slowly and taking care to hand-guide the string, holding it from front side of foot, for two or three stitches, to insure that the string should be covered immediately. Then leave it taking care that it should run regularly without being tightened in the foot base hole and that it should sew normally.

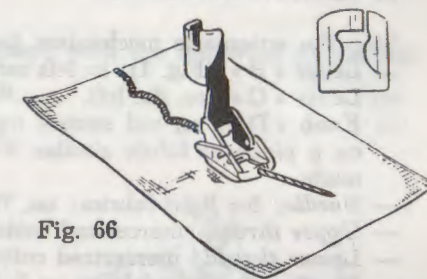


Fig. 66

48. AUTOMATIC BUTTONHOLES

The special cam-group for buttonholes may be turned in respect of its handle in two different positions: one for buttonholes on heavy fabrics (marked by a large buttonhole) and the other for buttonholes on light fabrics (marked with a small buttonhole).

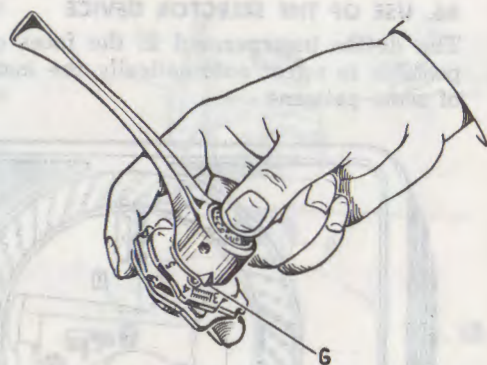


Fig. 67

To change from one position to another:

- Press cam-group as shown on Fig. 67 and bring index « G » in correspondence with the desired buttonhole.
- When it is in the correct position, a click will be heard and the cam group will remain fixed.

a) TO MAKE BUTTONHOLE

Stop the automatic mechanism (see para. 45) and set machine as follows:

- *Lever « B »* (Fig. 1): in left notch.
- *Lever « C »*: on the left.
- *Knob « D »*: on red square mark. Check correct position by trying out on a piece of fabric similar to the fabric on which buttonhole is to be made.
- *Needle*: for light fabrics: no. 70 (10); for heavy fabrics no. 90 (14).
- *Upper thread*: mercerized cotton no. 40.
- *Lower thread*: mercerized cotton no. 50.
- *Tension*: for light fabrics, on 5; for heavy fabrics tensions should be tighter.
- *Presser foot*: use transparent foot provided with guide for buttonholes; regulate position of guide in accordance with the desired length of buttonhole.

Now proceed as follows:

- Insert cam-group into machine (Fig. 68).
- With needle in its highest position, bring handle in position 1 (handle completely on the left) Fig. 68.
- Make upper bar tack with 3 or 4 stitches.

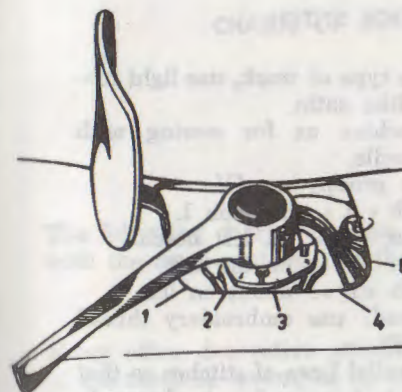


Fig. 68

- Move handle to position 2 and make first row of stitches; stop when upper bar tack is in contact with presser foot guide.
- Move handle to position 3; machine will sew in reverse with straight stitches. Stop when needle reaches upper bar tack.
- Move handle to position 4 and make second row of stitches; stop when needle is out of fabric.
- Move handle to position 5 and make lower bar tack with 3 or 4 stitches; buttonhole is then completed.

- Remove work and knot the two threads together on the underside of fabric.
- Cut fabric between the two rows of stitches with NECCHI buttonhole cutter (Fig. 59).

b) FLAT-STITCHED BUTTONHOLES

Proceed as described in preceding paragraph with the following exceptions:

- *Upper tension*: set on 4, thread no. 50.
- *Lower tension*: normal, thread no. 50.

49. AUTOMATIC BLINDSTITCHING

Proceed as described in para. 41 but with the following machine setting:

- *Cam group*: no. V.
- *Knob « A »* (Fig. 1): on 1.
- *Lever « B »*: in left notch.
- *Lever « C »*: on the left.
- *Knob « D »*: on 2.

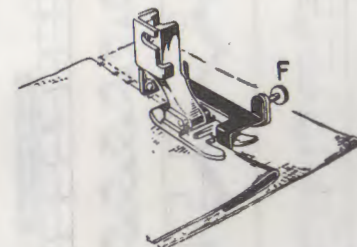


Fig. 69

NOTE: If the seam appears on the inner side of folded fabric also, adjust the position of guide by means of screw « F » (Fig. 69).

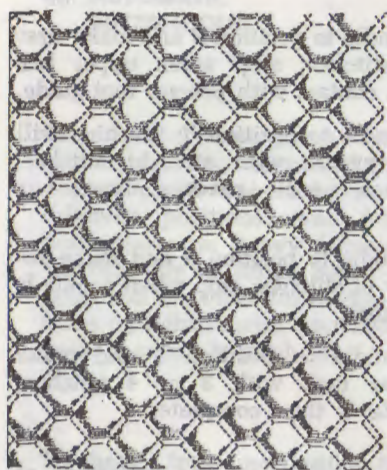


Fig. 70

50. SMOCK STITCH

For this type of work, use light materials like satin.
Set machine as for sewing with twin needle.

- Cam group: no. IV.
- Knob «A»: about on 1.
- Lever «B»: in left notch.
- Lever «C»: on the left.
- Knob «D»: about on 0.5.
- Thread: use embroidery thread no. 50.

Sew parallel lines of stitches so that the point of every line is always in correspondence with the point of the preceding one (Fig. 70). Eventually correct direction of sewing, guiding fabric by hand.

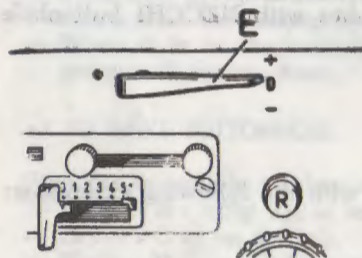


Fig. 71

51. LEVER FOR MICROMETRIC ADJUSTMENT OF DESIGN

For the normal execution of the designs (Fig. 72a) set lever «E» (Fig. 71) with its pointed end on 0. Slight shiftings of said lever in respect of position 0 might sometimes be required to obtain drawings answering better the operator's purposes.

- To increase the forward stitch length or decrease the reverse stitch length, shift lever «E» towards «+». Design will thus be as shown in Fig. 72b.
 - On the contrary, to decrease the forward stitch length and increase the reverse stitch length, shift lever «E» toward «-». Design will thus be as shown in Fig. 72c.
- It is advisable that the lever shifting in both directions should always be very small due to the fact that this device is very sensitive.



Fig. 72

CHARTS OF AUTOMATIC EMBROIDERY DESIGNS

The following charts illustrate a few examples of designs that can be made with the cams contained in the accessory box of machine.

Many other decorative stitches can be obtained by changing the positions of the machine levers, or by combining the cams differently.














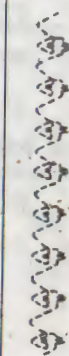


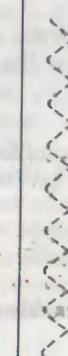
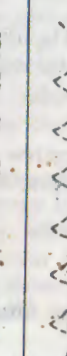


When consulting the Charts, always refer to Fig. 1.

When combining the separate cam groups, make sure they are inserted on cam-holder bushing in the correct order.











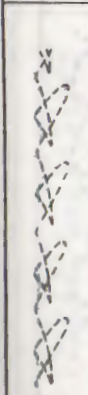



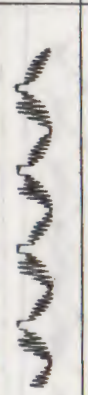
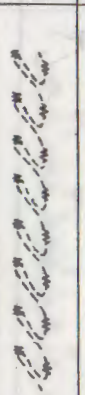


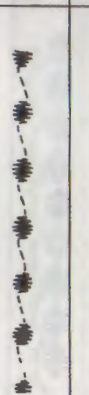

The cam-group for scalloping, which is now replaced by group V can be made-up by cams 0-0-24 and machine controls set at will.











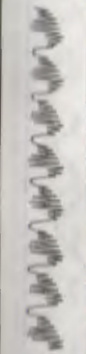
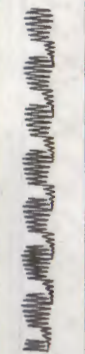
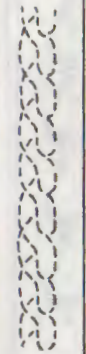

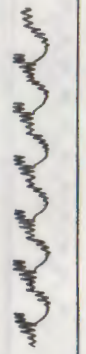
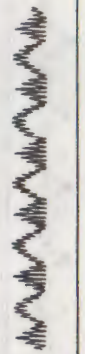
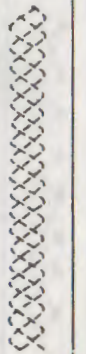
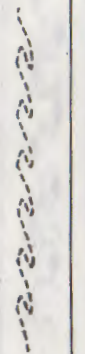
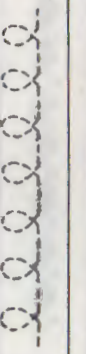

The following examples are all obtained by always turning the mark lines «r» stamped on each cam face, in the same direction so that they are one above the other (see note in para. 42).

	I	II	III	IV	V
A	1	Δ	1	1	1
B					
C	0	0	0	1,5	0
D	4		4		0,5 ÷ 4

1	35	10	14	14	27	33	15	14	19	19
2	26	0	21	21	21	35	0	20	0	0
3	19	31	27	26	17	17	25	25	10	25
A	1	1	1	1	1	1	1	1	1	1
B										
C	0	0	0	0	0	0	0	0	0	0
D	■	1,7	0,5	0,5	■	0,5	0,5	0,5	1	1
										

1	31	19	20	29	17	31	11	17	19	30
2	20	21	26	34	34	0	0	0	0	0
3	17	26	18	22	19	21	26	21	31	18
A	1	1	1	1	1	1	1	1	1	1
B										
C	0	0	0	0	0	0	0	0	0	0
D	0,5	1,5	■	1	0,5	0,5	1,5	0,5	1,3	0,6

I	19	22	14	27	0	31	0	0	17	0
2	0	34	20	20	27	21	17	30	20	19
J	27	30	16	16	25	17	31	0	34	30
A	1	1	1	1	2	1,5	2	2,5	1,5	1
B										
C	0	0	0	0	0	0	0	0	0	0
D	1,5	1,5	0,5	0,5	■	0,5	■	■	■	■
										

0	14	19	27	16	0	15	15	15	30
31	17	0	16	35	27	0	0	0	0
11	19	30	31	31	24	17	34	11	27
1	1	1	1	1	1,5	1,5	1,5	1,5	1,5
									
0	0	0	0	0	0	0	0	0	0
■	■	1,2	■	0,5	■	■	0,5	0,5	0,5
									

1	32	25	30	28	28
2	0	0	0	17	16
3	27	11	17	18	18
A	1	1	1	1	1
B					
C	0	1	1	0	0
D	1,5	1,4	0,5	0,6	0,5

Here are a few examples of possible variations obtained by changing the position of the machine controls. (Fig. 1)

	I	I	I	I	I	III	III	III	III	III
A	1	1	1	2	3	3,5	1	2,5	1	2,5
B										
C	0	1	1	1	1	0	0	0	1	1
D	0,6	4	4	0,5	4	3	■	4	■	4