

DIRECTIONS  
for using the improved  
Universal  
Central Bobbin

**NECCHI**  
**B U**

Sewing Machine  
with articulated  
thread stretcher

Please keep this booklet for consultation.

## *Important Direction*

The machine, as soon as unpacked, must be cleaned thoroughly with petroleum, in order to remove all residues of dried oil, and then must be carefully oiled in all its parts with a special good quality oil, according to directions.

The greatest part of incidents occurring in all central bobbin sewing machines are due to the fact that the bobbin thread enters into the shuttle case. In order to avoid this trouble, it is necessary, by beginning of the sewing, to keep the ends of the bobbin thread and of the needle thread slightly stretched until three or four stitches have been sewn, and never to turn the wheel backwards, even if only a little.

In any case, when the thread enters into the shuttle case, it is necessary to remove it promptly in order to let the machine work regularly again. Details of this operation are given in the last part of direction Nr. 7 of this booklet.

The presser foot must always be raised when the machine is not sewing. Never start the machine when the cotton is threaded and without the stuff under the presser foot.

Take care to use needles and thread of the numbers corresponding with, and suitable to the work to be done, according to the table at the end of this booklet.

Always use needles and thread of the best quality, as they have a great influence on the perfection of sewing. Never draw or push the work, as there is the risk of bending or breaking the needle and spoiling the hole of the needle plate; the machine carries on the work by itself.

## *General remarks*

Necchi's BU Universal Central Bobbin Sewing-Machine, having a great variety of uses, is suitable for families, as well as for needlewomen, because the most delicate work and the finest appliqué work with pleasing effects can be accomplished with it, besides the ordinary sewing required in every home, which can be done with ordinary family machines.

It can sew the ordinary straight stitch, as well as the zig-zag one, and it has a particular characteristic, namely, when a zig-zag stitch is left to pass on to a straight stitch, the latter can be obtained either completely to the right, or in the middle, or completely to the left of the zig-zag stitch.

This machine has another peculiar characteristic of great importance, that is to say, the zig-zag stitch is obtained with synchronous displacement, crosswise in the direction of the advance of the material, both of the needle and the central bobbin shuttle.

Constructively, this translatory movement of the needle and the shuttleholder set, has been obtained with a special Necchi Patent device which ensures perfect simultaneity of their movement and the exact position of each, either when the machine has to work as an ordinary domestic machine for straight stitches, or when special zig-zag work has to be done.

As we will show later on with full details, the drive of this movement is obtained by merely moving levers in positions that can easily be reached.

Our aforesaid Patent offers two most important advantages, of which one is that of being able to use a central bobbin shuttle in this machine too, which has always been more popular on account of its practical qualities, and to avoid rotating shuttles, which are more complicated and delicate, and often give trouble; the other advantage being that of having a central bobbin shuttle which like all the other organs, is in the same position as that of ordinary sewing machines.

It happens therefore that when the Necchi BU operates for straight sewing, it is in the same conditions as an ordinary central bobbin machine, without being hindered or made heavy by any other organ in movement, and keeping all those characteristics of simple and practical points and of perfect working, which have made the central bobbin machine the only one that is really suitable for all kinds of work.

## 1.

### Cleaning & oiling of the machine & the treadle

In order to keep the machine in good conditions, oiling is the most important operation: it is necessary to use an oil of excellent quality.

A poor quality oil, and particularly the olive oil, that many people have the bad habit of using, coagulates in the conducting holes and sticks to the parts in the form of a gummy film. The movement of the machine is hereby made stiff with the consequence of a quick wearing out.

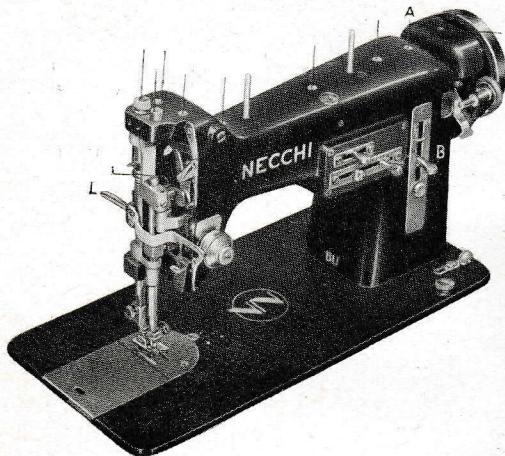


Fig. 1

The machine must be oiled in the places shown by arrow in fig. 1. When oiling the place A it is advisable to turn the wheel until the needle reaches its lowest position.

When oiling the winder take care that the oil does not fall on the rubber ring.

The front parts of the arm are oiled best by removing the front plate P (fig. 5), by screwing off button Q (fig. 5), and by opening the back rectangular plate of the arm, the parts thus being in view can then be oiled.

The parts under the surface of the machine which are to be oiled are shown in fig. 2. Some suitably distributed holes indicate the most delicate points requiring a very careful lubrication. When the machine is continually used, it is necessary to clean and oil the shuttle bed very often with a cotton rag slightly soaked with oil.

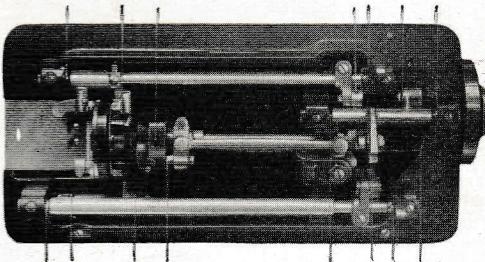


Fig. 2

After the machine has worked for some time, particularly with some sort of stuffs and yarns, some waste will have been accumulated under the needle plate, thus hindering the movement of the feed dog.

It is therefore necessary to clean the machine (particularly the channels of the feed dog) from the waste, this can easily be done by taking away the needle plate and the operation is very quick thanks to the patented device NECCHI.

When the machine has not been used for a long time and has become hard to work, a little petroleum must be put in all the parts to be oiled, in order to dissolve the dry oil sticking to the parts. When the machine runs well again, the parts must be thoroughly dried and well oiled.

To oil the treadle, put a few drops of oil in the two points of suspension of the foot board — head and foot — of the connecting rod, and in the two points of rotation of the shaft with the wheel's bear frame.

## 2.

### How to attach and disjoin the wheel

To disjoin the wheel V (fig. 3) of the machine and to have it loose, hold it still with the left hand and turn the knurled button B (fig. 3) with the right in direction of the arrow. To attach it, turn button B in the opposite direction as long as resistance is found.

In order to avoid damages, it is necessary to disjoin the wheel when the drive of the machine's treadle has to be learnt, and also when the little bobbin has to be filled by the winder, as explained later on.

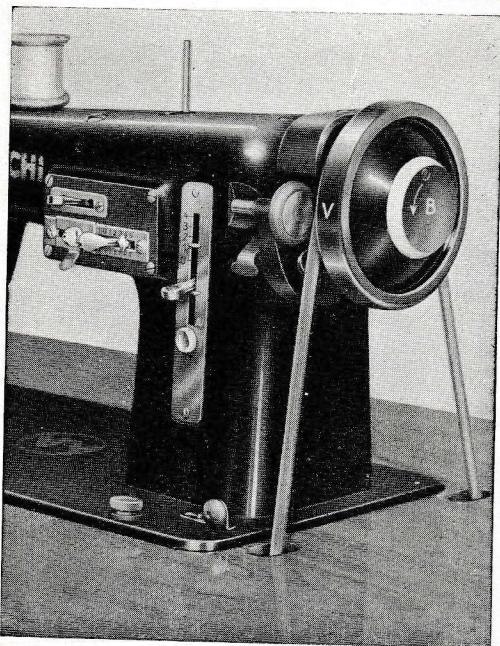


Fig. 3

### 3.

#### How to remove the sample

If the machine is received with the cotton in its places and with the sample in a position to be sewn, the way to remove the latter must be known at once. To do this, turn the wheel towards yourself until the needle is at his highest position, raise the foot by means of lever L (fig. 1), take the sample stuff from the back part of the foot, break the upper and lower threads and unthread the upper thread from the needle.

6

### 4.

#### Direction of the stitching

When the machine has been prepared in accordance with foregoing directions, a piece of cloth is taken and put under foot M (fig. 5), after which lever L is slowly lowered. When the machine is started and the wheel turned towards yourself, the cloth will be carried ahead. This is the way to learn to direct the cloth in a straight line or a slanting line, but care must be taken not to push or draw it, otherwise the needle might easily be broken.

If the direction of the stitching has to be changed, namely, if a corner is required, the movement of the machine must be stopped but care must be taken to leave the needle in the cloth, after which foot M is slightly raised by means of lever L, and the cloth turned in the required direction; then, lever L is lowered and sewing continued.

Never start the machine without a piece of stuff under the foot, otherwise the foot and the carrier may be spoilt.

### 5.

#### Length of stitch

Our machines are endowed with a forward and backward movement device; the two positions are indicated by the initial letters AV (forward) and IN (backward).

When the stitch regulating lever B is at nought, the stuff is not moved and no stitch is made. To lengthen the stitch, the button O (fig. 10) must be slightly loosened, after which the stitch regulating lever can be lowered or raised according to forward or backward stitching and to the length of the stitch required.

The horizontal arrow just above the lever moving on the scale from 0 to 4 of the stitch regulating plate, indicates the approximate length of the stitch in millimetres. Another horizontal arrow under the lever moves at the same time with the former: turning button O from left to right, the two arrows through which the lever turns, are fixed, thus enabling to pass from the forward to the backward movement, maintaining automatically the same length of the stitch.

### 6.

#### How to remove the bobbin case, the bobbin & the hook

To remove the bobbin case F (fig. 4) fastened on the pin of the hook, it is first of all necessary to completely open the running plate R (fig. 5), then turn the wheel until the needle reaches the highest possible position. Afterwards open the lock A (fig. 4) and by pulling

7

slightly take out the bobbin case F containing the bobbin G. To set the bobbin case again in its position, after having entered the bobbin in it, keep lock A open with the left hand and fasten the bobbin case on the pin of bobbin case is perfectly adjusted on the proper bed above the hook retainer, as shown in fig. 4.

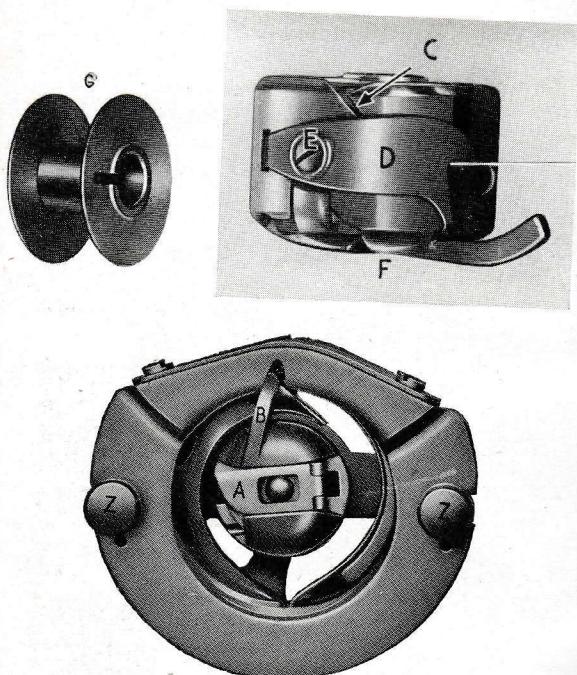


Fig. 4

Care must be taken to have the lock always entirely open with light pressure, till the bobbin case has completely been introduced in the hook, in order to avoid that the bobbin falls out.

If the lock is loosened before time, it is possible that the bobbin comes out a little and hinders the full introduction of the bobbin case, which would go out during the work.

To take out the hook from its bed, particularly if the cotton of the bobbin has entered into the bed so as to hinder the movement, it will be sufficient to push the knurled buttons Z outside and to take out the plate. After having well cleaned the bed and all other parts taken away, everything must be put back in its proper place.

## 7.

### How to thread the lower cotton

Put a bobbin filled with cotton in the bobbin case (it will be seen later on how the filling takes place by means of the winder), holding the free end of the cotton, which is immediately introduced in the slot shown with C in fig. 4. Keep in mind as an important rule,

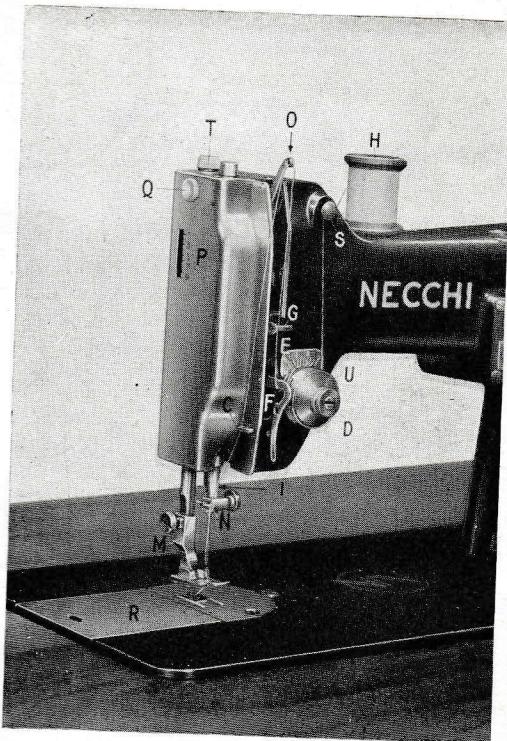


Fig. 5

that the bobbin must always be adjusted on the bobbin case in such a way that the cotton, getting unfold from it, let it run contrary to the hands of the watch; supposing it is placed under the bobbin case on the hook as per fig. 4.

Then pass the thread under the small spring D (fig. 4) so as to let it come out from the hole of the spring. Hereby the bobbin case is threaded. Allow the end of the thread to stretch 10 cm. outside of the bobbin case, fit the bobbin case on the pin of the hook, as already stated, taking care that the free end of the thread goes down towards the outside.

Now the thread must pass through the hole of the needle plate.

To do this put the upper thread in position, by holding the end with the left hand, turn the wheel with the right and the needle, after having entered its plate, will return to its highest point.

By pulling the upper thread, the lower thread will come out from the hole of the needle plate, thus forming a loop; pull slightly the loop and the end of the upper thread will come out.

## 8.

### How to thread the upper cotton

The upper cotton (see fig. 5), starting from a reel put on the reel holder H, must pass from crook S, from right to left between the tension disks U, then engaging in the proper crook of the thread tension device spring E, under the crook F, and always from right to left, in the hole at the end of the threadstretcher Q. Afterwards the cotton must pass through crook C of the front plate P and in the crook below needle holder N, finally it must be threaded from left to right in the hole of the needle; taking care that when the threadstretcher is at the highest point of his movement, the cotton must stretch out about 8-10 centimetres in order to start sewing.

## 9.

### How to remove the needle

To remove the needle, the needle bar must be raised (by turning the wheel) to its highest point; then loosen slightly the screw of the holder and remove the needle. To put the needle again, it must be entered in the hole of the needle bar, taking care that the flat part of the needle fits perfectly in the flat part of the hole; push it upwards until it stops and then fasten the screw.

## 10.

### How to start sewing

Hold for some stitches the two ends of the threads in order to avoid them winding with consequent stopping of the machine.

Avoid to start the machine before having put the stuff

under the presser foot, otherwise the threads may become twisted and the machine hard to work.

To stitch thick stuffs or to pass through a seam made before, slacken the movement of the treadle and turn with great care the wheel with the right hand, in order to avoid bending or breaking the needle.

## 11.

### How to adjust the tension

The tension of the lower thread is regulated by screw E (fig. 5) which fixes the spring of the bobbin case. When turning to the right, the spring is pressed against the bobbin case and therefore the tension of the thread increases. By turning to the left the opposite result will be obtained.

The tension of the upper thread is adjusted by means of the femal screw D (fig. 5) placed before the discs of tension U. When turning this screw to the right, the tension of the thread increases, and lessens when it is turned to the left.

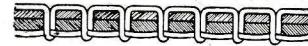


Fig. 6

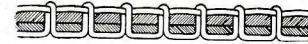


Fig. 7



Fig. 8

If the upper tension is too weak (as in fig. 6) the thread of the bobbin draws under the upper thread and forms series of loops in the lower part of the sewing; if the upper tension is too strong (as in fig. 7) the lower thread is drawn above and the upper thread will break easily. If the tension is equal for both threads, a regular sewing will be obtained as per fig. 8.

## 12.

### How to adjust the pressure of the foot on the stuff

The pressure is regulated by means of the stuff presser button T (fig. 5), which is screwed in the upper part of the machine in correspondence with the stuff presser bar. By turning this button from the left to the right, the pressure is increased, and it is lessened when it is

turned from the right to the left. The pressure of the foot is generally increased for thick and strong stuffs.

### 13.

#### How to change needle plate

Thanks to our patented device, the needle plate can be changed in a very simple manner. After having opened the running square plate R (fig. 5) and having raised the foot raiser spring, it needs only to raise the needle plate until it is released from the guide fastening pins and to remove it by pushing it to the left, as indicated in fig. 9.

To replace the new plate proceed in the opposite sense taking care to introduce the special connection at the end on the right of the plate below the fastening screw. The change of the plate must be made for sewing thin stuffs which could be dragged into the hole of the normal plate thus making non-perfect stitches.

To obtain a still better work, it is advisable to place

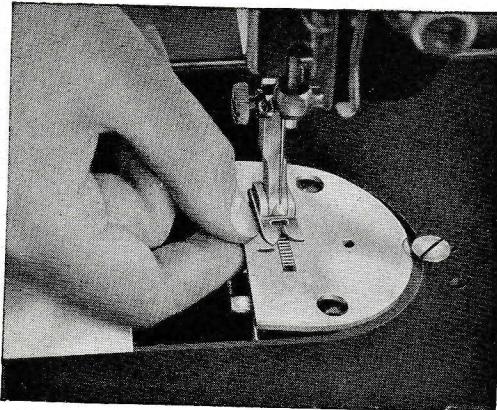


Fig. 9

the special foot instead of that with hole, after having placed the plate merely with the hole. This change too can be made easily by loosening the special fastening button.

The hole on the plate and that on the foot are made in correspondence to the **left position of the needle**, in order to be near to the teeth of the feed dog.

Therefore attention must be paid, before turning the machine, that the **zig zag regulating lever be at nought**, say totally at the left and that the **lever for displacement of the needle also be totally at the left** (see direc-

tion Nr. 16); of course without this precaution the needle would break immediately. The needle plate must be taken away periodically in order to clean the feed dog from the waste of stuff and yarn which could hinder the movement.

### 14.

#### How to use the winder

First of all the wheel must be disconnected, as explained in direction Nr. 2.

To fix the reel on the pin H (fig. 10), the thread must first pass through hook S, then in disk U and be wound with a few turns (by hand) on a bobbin.

The bobbin is then fixed on the proper pin W as per fig. 10; by holding stand the rubber ring and letting the bobbin turn on the pin, the horizontal bill end of the spring situated in the hole of the pin couples with the bobbin, thus assuring the rotation. Then, acting upwards,

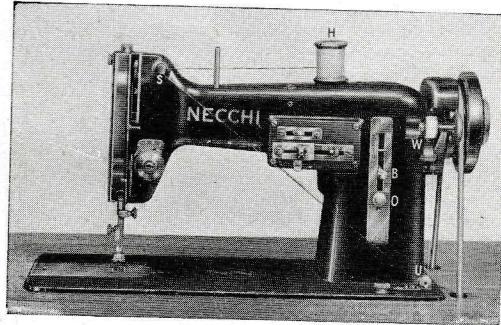


Fig. 10

on the thread guide E, which shall be inserted in the inside of the bobbin, the rubber ring comes into contact with the wheel.

By starting the wheel the bobbin will automatically be wound with thread and when full it will stop by itself.

To disconnect the bobbin winder before the bobbin is full, act downwards on the thread guide.

### 15.

#### Directions for embroidery

Our machine is endowed with an embroidery device which is easy to be handled.

It is fitted in a convenient position, just below the running square plate, as shown in fig. 11, so that it is not necessary to raise the machine and therefore the belt

needs not to be taken away and no other operation is required.

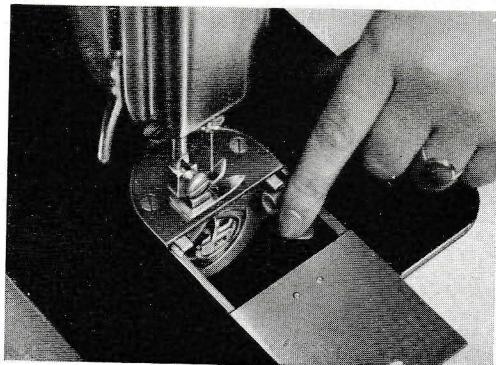


Fig. 11

It consists of a small lever, by removing the same (by about 1/4 of turn) an eccentric drives interiorly and joins the horizontal oscillating shaft with the foot bearing the raise roller of the feed dog.

By pressing the lever with a finger as per fig. 11, the eccentric gets released and the feed dog ceases operating. In this way, by removing the foot and fitting the top of the small triangle engraved under the presser foot lever, straight to the small line engraved under the front plate, the machine is ready for this work. To return to ordinary sewing conditions, raise the lever and bring it back to its initial position.

When the machine must be used for long time for embroidery only, it is advisable to replace the needle plate with the special embroidery plate, which we supply on demand. The same, having no cuts, protects the movement better from dust.

The stuff to be embroidered is then put in a special wooden double frame (embroidery ring), after having been well stretched, under the needle. The frame is then held with both hands, the forefinger of the left hand being near the needle and on the stuff to avoid skipping stitches.

The treadle must work slowly and the frame must act in such a way that the needle follows the design prepared on the stuff. Take care to move the frame only when the needle has reached its highest position. The most difficult point for beginners is to learn guiding the frame with an exact and rhythmical movement in an alternate direction at every stitch, and to move the frame only when the needle is up. For practice it is advisable

to start moving the machine very slowly and to increase the speed bye and bye as practice is acquired. For the purpose of having the embroidery turn well, care must be taken to adjust the tensions, in general it is necessary that the lower tension be closer than for sewing work, so that the crossing of the two threads be fully below the stuff namely on the back part of the embroidery.

#### 16.

#### Zig zag sewing

As already mentioned, zig zag sewing can be made with the Necchi BU sewing machine by means of a special device, the running adjustment and driving organs of which are in one plate only and quite at hand, as it can be seen in fig 12.

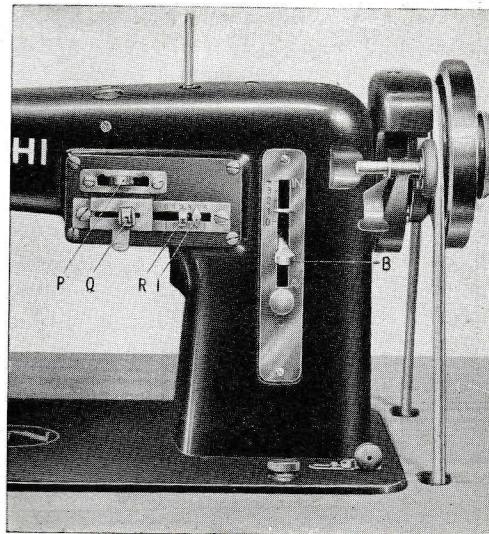


Fig. 12

There is a lever P, a lever R, a button Q, an index I. The lever P drives the removal of the needle bar, which is fixed in its normal position, in the middle of the needle plate, to the right or to the left of it, according to the position of the lever in the loop hole in which it can run; this allows to make straight stitches in the three positions or small zig zag stitches in the middle or

displaced to the left or to the right. The largest zig zag sewing does not allow the said displacement.

Lever R is the zig zag adjustment lever, because by displacing it we pass from one kind of sewing to another, and regulate the side size of the stitch.

Index I tightly joined to its drive button O serves to fix the position to the right of lever R, so as to enable to pass many times from straight to zig zag sewing of the width fixed beforehand.

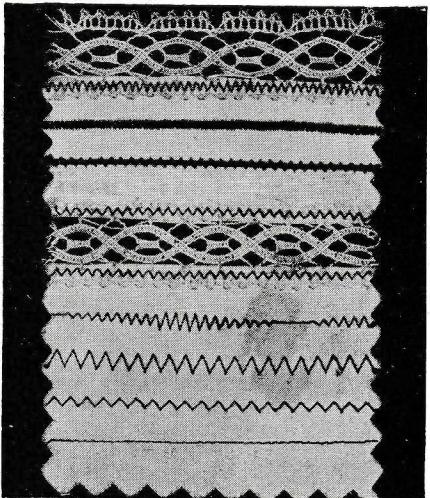


Fig. 13

To move the said index, button Q must be loosened and then fastened when it is in the position required.

The positions of the levers for straight sewing with holed plate are: lever P in the middle, to the right or to the left according to the position of sewing required; lever R at the bottom of the left run; button Q to the left and index I at nought.

To pass on to zig zag sewing, loosen button Q, displace index I and displace lever R to the right. The length of the zig zag stitch increases by displacing lever R to the right, and gets its maximum (about 5 mm.) when the said lever is at the end of the right run.

The numbers on the plate give the approximate extent of this width in millimetres.

By suitably using the different lengths and widths of the stitch, and working displacement lever P, and occasionally making use of coloured threads, the most varied and pleasant kinds of sewing can be obtained, as shown in figures 13 and 14.

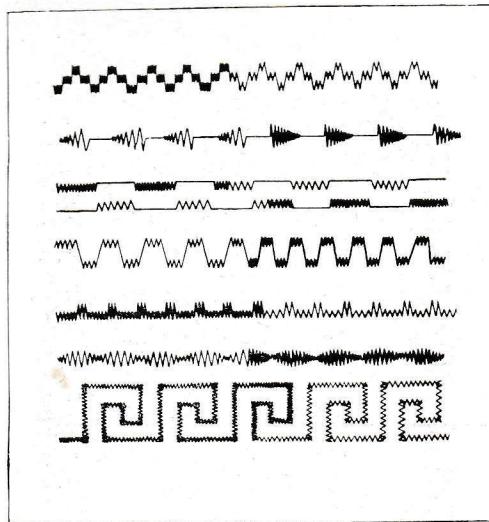


Fig. 14

The inventiveness and good taste of the embroiderers, will help to find a great deal of many other designs.

#### Button holes

This machine suits more than all others for making button holes.

Thanks to his patented device for displacing the needle in straight working to the left or to the right, a quick and exact work can easily be obtained. Button holes can be sewn with or without a reinforce thread, but it is advisable to use it, as the holes will last longer. To make button holes, the special foot (fig. 15) with plate-C must

be used and must be assembled under the regulating button of the zig zag regulating index, as shown in fig. 27.

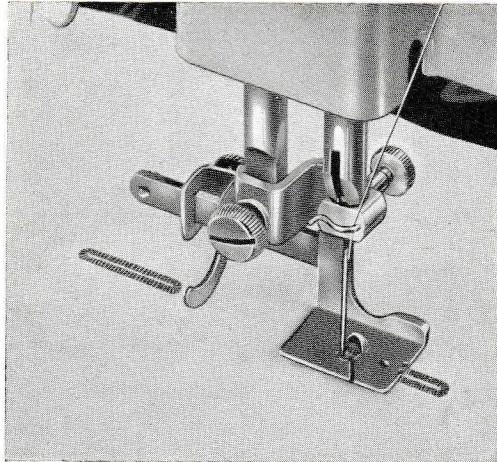


Fig. 15

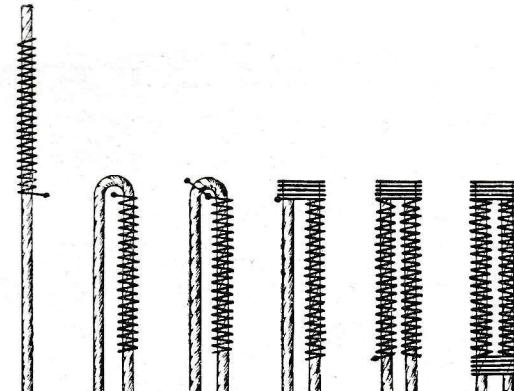
This plate C, which is supplied with the device for button holes, serves to limit the lower run of the lever which regulates the size of the zig zag.

This limit can be brought even to nought, namely, the plate may always be kept on the machine, but since it serves only for button holes and it is easily to fit up, we prefer to supply it separately in order to avoid useless complications on the machine.

Before starting fit the machine as follows. Put index I in such a position as to give a sufficient zig zag amplitude to make the hem of the button hole, which is generally 1.5; move zig zag lever R against the index and then bring plate C against the lever and the index in the position for making the end of the button hole, which is generally 3 (about the double), after which button Q is fastened thus fixing both the plate and index.

In this way the stitch length for the hem of the button hole has been fixed (lever R placed to the left against plate C) and the width for the end of the button hole (lever R placed to the right against index I); these limits must not be altered during the work and thus evenness for both parts will be ensured. The button holes for linen consists of four parts to be executed one

after the other, namely the two sides and the two ends (fig. 16).



1 2 3 4 5 6

Fig. 16

When the special foot is fitted at the place of the ordinary foot and the work is in the right position (fig. 15) with the width of the stitch at a minimum (and the reinforce thread in its hole), the hem 1 (fig. 16) can be sewn, and then at the required length, which can be fixed with the index T of the device (fig. 15), the needle is left in the stuff from the right side and the work is turned with the stuff presser bar raised contrary to the hands of the watch in order to avoid having to pass the stuff below the arm of the machine (2), (fig. 16), so that the button hole already sewn is guided in the groove at the right side of the foot; then make a stitch so as to bring the needle quite to the left (3, fig. 16) by drawing slightly the work towards yourself and by stretching out the reinforce thread. By removing the width of the stitch to a maximum (lever R to the right against the index) and by lowering the stuff presser bar, the first end of the button hole is made (4, fig. 16). In the same way (lever R against the plate) are made the second side (5, fig. 16) and the second end (lever R to the right against the index).

The button holes are then finished and have only to be opened by means of the blade for this purpose, this can also be done, provided in careful manner, with embroidery scissors.

The sizes of thread we recommend are:

Nr. 36 six fold: upper.

N. 80 - 90: lower

## *Special attachments and their uses*

A short description concerning the special attachments (which we deliver on demand, apart from the usual accessories equipment) follows, with illustrations showing their practical working.

### **Mending**

The machine prepared for embroidery, as said before, can also be used for mending, this work can be learnt easily and is very useful in all homes. The tension must



**Fig. 17**

not be too strong; the cloth to be mended must be fixed in the frame as for embroidery: a soft thread must be chosen both for the bobbin and the needle, possibly similar to the fabric to be mended.

The mending is done by guiding the frame forwards and backwards in order to cover the torn part and to arrive to about half centimetre on the sound one with many parallel stitches in the direction of the double weft, and joining them in the same way in the direction of the warp.

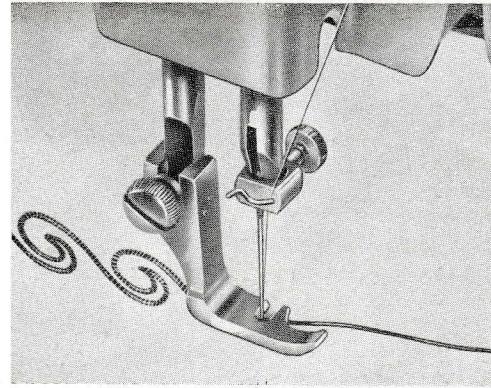
The work is made easier by using the mending foot (fig. 17), which holds the stuff when the needle is down, thus avoiding to have stitches skipped: by using this device it is also possible to avoid putting the stuff on the frame and this renders the work quicker.

Strong mending, quite perfect and invisible, can be quickly done with this machine after a little practice. Anybody can mend dish clothes, napkins and other commonly used articles: when a good experience has been acquired, one can gradually pass on to mending finer linen. Stockings and socks can also be darned by the aid of a small frame fit for this purpose.

### **Braider**

The foot for this purpose can be seen in fig. 18 where a sample of this sewing is reproduced.

To execute the work put the braid in the hole at the



**Fig. 18**

sole of the foot and regulate the zig zag and the length of the stitch, so as to have the braid covered by the seam.

Braiding work is most suitable to embellish vastly different kinds of material: leather girdles, ladies-underwear, or bed linen. This foot, therefore, must be considered very useful.

### Hemming foot

To use the hemming foot, fold over the stuff at the edge for the width of the hem and for a length of 2 cm., put it in the front part of the spring at the middle of the foot and up to the needle. After this operation, to be made with raised foot, let down the latter and begin

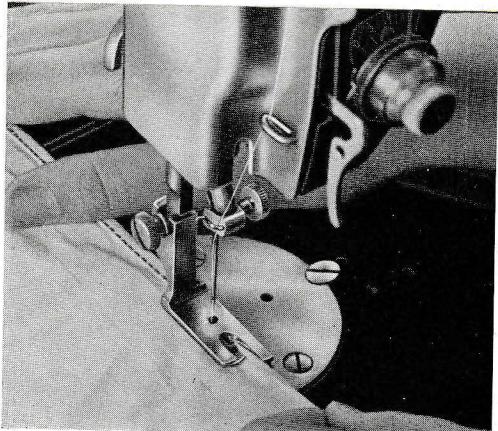


Fig. 19

sewing, taking care that the stuff enters regularly in the spring (fig. 19).

We usually supply feet for hems of 1,5 mm. and for 4 mm. (On demand larger or more narrow feet can be supplied).

### Rolled and festoon hems

The foot in fig. 20 is used. At the beginning of the hem, the stuff must be curled over and then run through the helicoidal screw of the hemmer foot. The zig zag stitch must extend on all the hem. With a strong tension and a very wide stitch, the shell stitch is obtained, of which there is a specimen in the same figure.

The festoon or shell hem is chiefly used for low cut garments and generally for hemming ladies' knitted underwear.

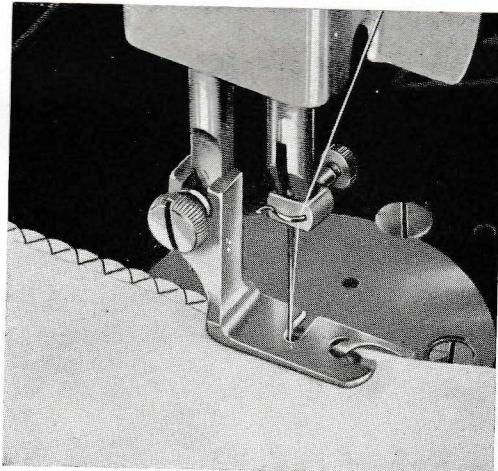


Fig. 20

### Straight Guide

It is used with the ordinary foot for sewing parallel to the edges of the stuff, also for plaits and hems at

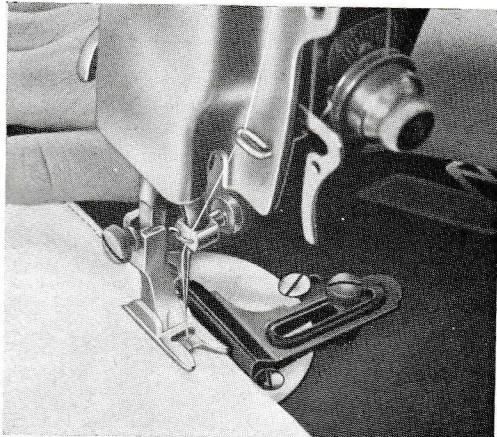


Fig. 21

equal distance without having to trace the measurements (fig. 21).

It is fixed by means of a screw cut button in one of the screw cut button (fig. 22).

### Quilting device

This device is for back stitching padded articles and allows lines at equal distances, as well as regular squares.

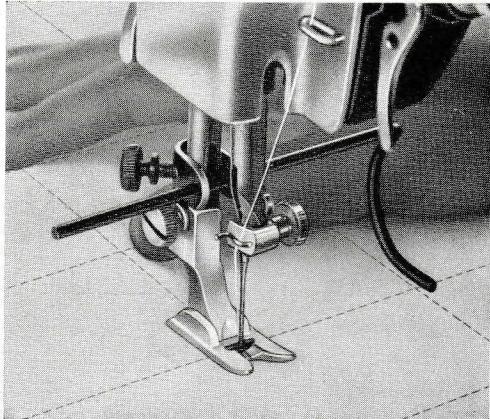


Fig. 22

res without having to trace them previously. It is fixed on the stuff holder rod by means of the bridge piece and the screw cut button (fig. 22).

Straight sewing on a traced line takes place first; the stuff is then pushed to the right as far as required for the distance between each square, and the rod is fixed in such a way that the bent part falls exactly on the first stitch. The other stitches are then sewn successively, but great care must be taken to always keep the previous stitch under the guide.

### To sew buttons on

The specially constructed foot shown in fig. 23 has to be used for this purpose. To sew the button on, the machine must be fitted as for embroidery (Nr. 15, fig. 11) with the length of the stitch at nought. Tensions must be regulated as for ordinary sewing. When the button to be sewn on is placed in the right position on the stuff under the foot, the presser bar is brought down, and then the width of the zig-zag is adjusted, so that the needle can pass through the centre of the holes of the button and 5 or 6 stitches are sufficient to sew it on.

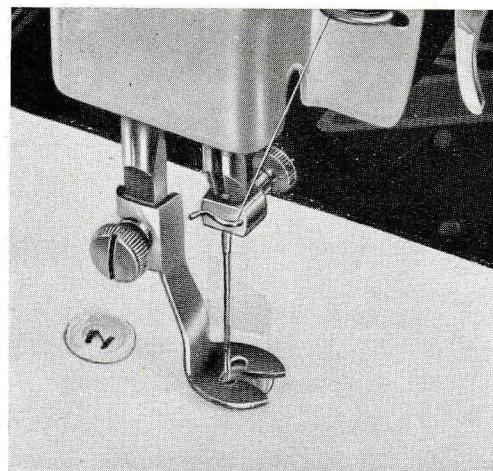


Fig. 23

When a button has four holes, the stuff with the button must be moved so that the needle will pass through the centre of the second pair of holes, and then 5 or 6 stitches are given. To avoid the button coming off, when the last double stitch is made, pass on to the straight stitch two or three times through the same hole.

Lever P (fig. 12) has, of course, to be displaced to the right or to the left in order to do this, and not to be kept in the middle.

### Round button holes

These are made by using the attachment endowed with: a needle plate with pivot (fig. 24), a feed dog for the plate and a tubular blade for cutting the hole on the stuff (fig. 26).

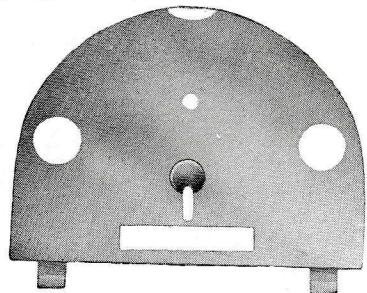


Fig. 24

The pivot of the plate and the tubular blade are made, on demand, with various diameters according to the diameter of the hole to be made.

To sew the holes use the foot as per fig. 25.

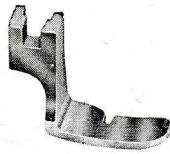


Fig. 25

Fit the machine with lever P (fig. 12) quite to the right and set the amplitudes of the zig zag at your liking by moving lever R (fig. 12). Tensions must be normal. After having pierced the stuff with the blade let the



Fig. 26

hole go into the pivot of the needle plate (fig. 27) and start sewing turning the stuff slightly in the direction of the hands of the watch.

It is advisable to make some further straight stitches when the outline of the hole is finished in order to connect the ends of the two threads.

Every type of thread can be used for sewing the hole, the choice of the thickness depends from the use for which the hole is intended.

### Key Button holes

These are made with the NECCHI BU machine by using the special device (fig. 29 and following) endowed with:

1) a special plate C to be placed under the drive button of the zig zag regulator index (see fig. 27),  
2) a plate (F) to be placed on the front plate for passing the reinforce thread (see fig. 30),

3) pincers to cut the button holes (fig. 28),  
4) a bobbin case with burnished bolt bearing the letter O (button holes) (fig. 29 a),

5) a conical spring to replace the spring placed on the upper tension (fig. 29 b),

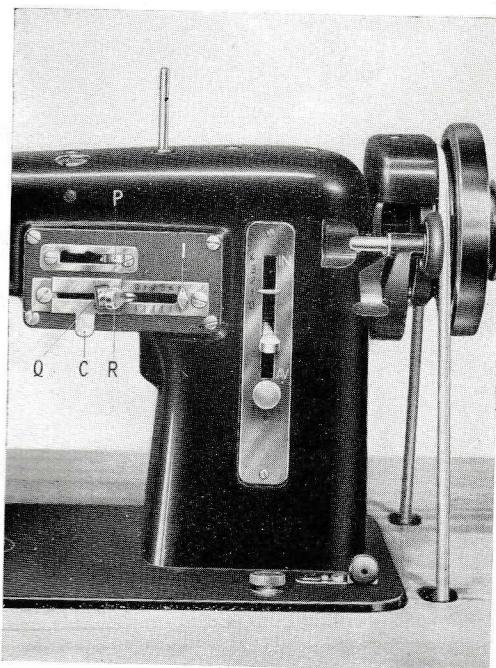


Fig. 27

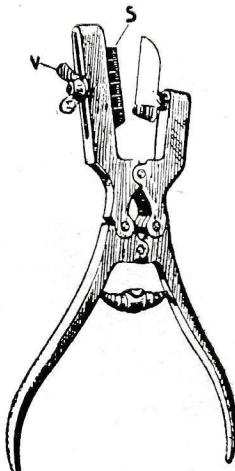


Fig. 28

The plate C supplied with the device for making round head and head rounded button holes serves to limit the

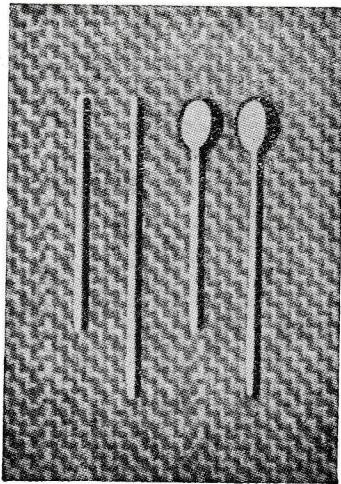


Fig. 28 a

upper run of the regulating lever. The plate could always be kept on the machine, in correspondence with position 0 (nought) of the zig-zag lever, but since it serves only for button holes and it is easily to fit it up, we prefer to supply it separately in order to avoid useless complications on the machine.

Before starting fit the machine as follows: Put lever P quite to the right as in fig. 27 and index I in such a

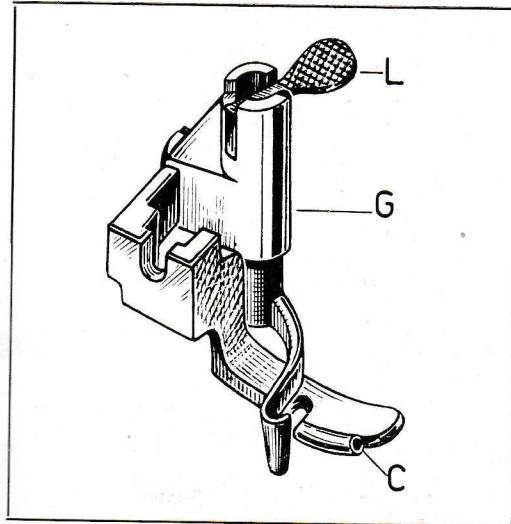


Fig. 29

position as to give a sufficient zig-zag amplexness to make the hem of the button hole (from min. 2 to 2,5), move the zig-zag lever against the index and then bring



Fig. 29 a



Fig. 29 b

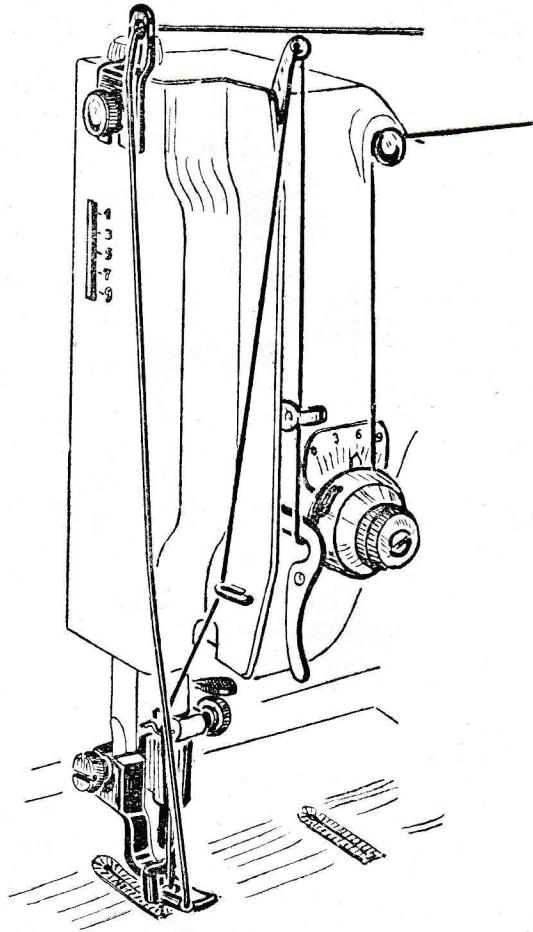


Fig. 30

plate C against the lever and the index in the position for making the end of the button hole, which is generally 4,5 (about the double), after this fasten button Q. In this way has been fixed zig zag width for the hem of the button hole (lever R displaced to the left against plate C) and the width for the end of the button hole (lever R displaced to the right against index I). These limits must not be altered during the work and thus evenness for both parts will be ensured.

The device is placed on the stuff presser bar as in fig. 30 and it needs to be «opened». That is, in the normal position as in fig. 29, lever L (fig. 29) must be raised so that the interior socket of the guide runs till it lets the lever itself run in the direction of the hands of the watch, so as to displace it against the wall of the upper scale.

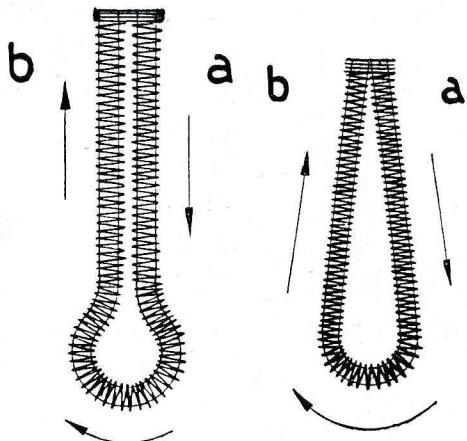


Fig. 31

Fig. 31 a

To obtain a still better work, it is necessary to displace the stitch regulating lever slightly from nought in order to get a lower carrying of the stuff, but sufficient to make uniform stitches; besides the tension of the bobbin must be very weak and the upper tension rather strong. This can be obtained by: 1) the special bobbin case with a burnished bolt and bearing the letter O (fig. 29 a), which differs from the common one only by having the thread tension spring already set to the purpose, 2) by the stronger conical spring (fig. 29 b) in substitution of that normally fit up on the upper tension.

The threads we recommend are: Nr. 24 silk, superior and. Nr. 100, inferior.

The button hole to be made must be cut by means of

the pincer (fig. 28), with which can be cut holes of a length from mm. 17 to 40.

The length of the cut must be regulated through the proper screw V and the graduated scale S.

When the machine and the work to be made are thus fit, put the button hole cut under the foot of the device so that the round head of the end intended for the rounded head turned towards the person who is working, displace lever L from the upper step (fig. 29) in order to let the socket of the guide run in his seat (in the contrary sense to the hands of the watch) until the socket falls in the inferior cut and bring it down on the stuff.

Then start sewing with the minimal width of stitch, after having entered the reinforce thread in the proper channel G (fig. 29).

The said reinforce thread comes from a bobbin placed on the back bobbin bearer and before entering in C it must pass in the thread guiding hole of the small plate F (fig. 30) fixed by a button on the front plate.

Execute the first side (fig. 31 and 31 a) of the button hole, then let the stuff turn in the contrary sense of the hands of the watch and execute the side b.

When the sides are made, the button hole must be closed with a thread bar by displacing to the maximum the width of the stitch (lever R to the right against the index).

In this way, with a little practice, perfect and regular button holes are obtained.

With this device also button holes with rounded head can be made. The cut on the stuff must be made straightly by using the pincer (fig. 28) so that the blade does not cut in the inferior part say in correspondence with the round head; to obtain this loosen screw V and displace the graduated scale S to the height. The execution of the button holes is the same as for the preceding one.

**Remark.** As a preliminary exercise it is advisable to make the seam of a button hole along the smooth margin of a piece of stuff. Till the necessary practice has not been acquired, one can sew, with normal stitch, around the button hole so as to have a more resisting guide margin.

#### Stipple Stitch and Blindstitch

The stipple stitch and blindstitch (fig. 32) are made by means of a special device as per fig. 33, by keeping the breadth extended below and by folding the stuff (fig. 34) during sewing, the fold must be maintained closely adherent to the guide; this is rendered easier by the inclined rulings executed under the base of the device.

The device can be used both for right sewing and for left sewing, thus when a seam is made, f. i. the right, by turning the work can be executed the left one.

In this way the work is always made in forward direction, with stuff in easy position for the guide and avoiding to cut the threads at every time and to start a new seam.

The driving of the work must be closely regulated either from right or from left, so that in both cases the needle enters in the thickness of the stuff. Just to obtain this regulation in an easy manner has been invented the new

patented device NECCHI, in which, differently from all other similar devices, there are two separate regulations: one for the right sewing and one for the left sewing. These regulations are easily obtained by working the two knurled buttons (a & b) (fig. 33) placed respectively at the right and at the left of the device; thus can be obtained an exact regulation in both sides whatever be the desired zig zag amplitudes, which must be kept larger in proportion to the greater thickness of the stuff.

For particularly thin stuffs, where the slightest deviation of the needle would spoil the work, the two small screws (c & d) placed aside the needle must be regu-

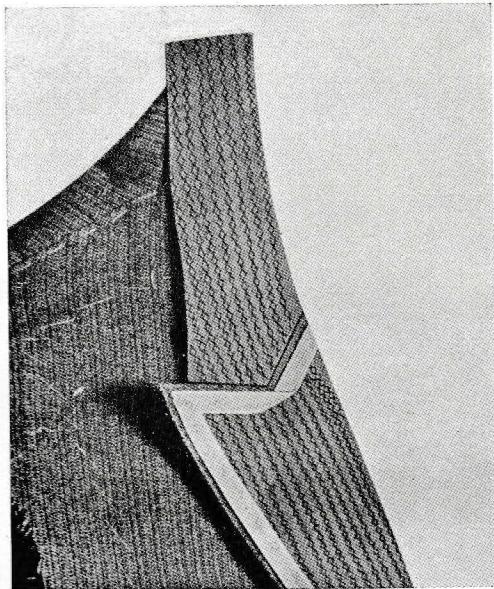


Fig. 32

lated in such a way that the needle skims along them, thus rendering every deviation impossible. Another particular of the patented device consists in the special building of the two small guide wings (e & f) which are closely joint to the device (thus forming a sure guide for the stuff) although they can be displaced up and down by the two springs, so that they are regulated automatically according to the thickness of the stuff. The device, a small jewel of mechanics, replaces with great advantage the rod system. The thread we recommend: silk Nr. 100 three fold of the same colour of the stuff or Nr. 60 for bobbin.

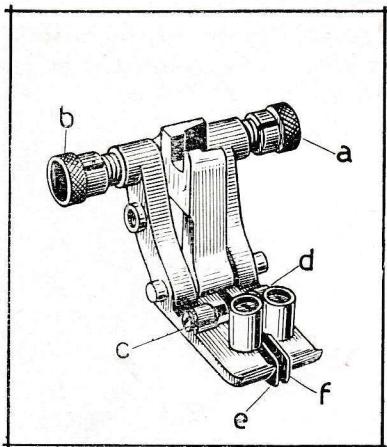


Fig. 33

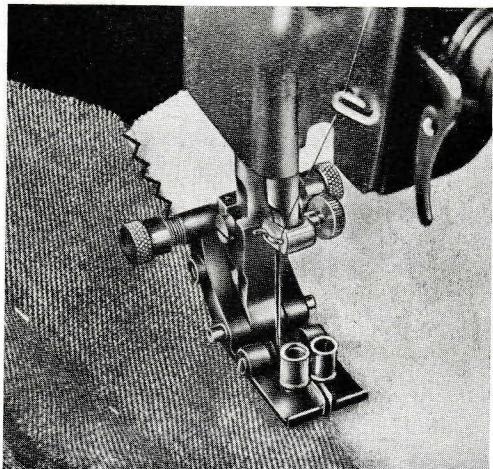


Fig. 34

**CHIEF CAUSES OF THE MOST COMMON TROUBLES WHICH CAN GENERALLY BE AVOIDED BY FOLLOWING THE FOREGOING DIRECTIONS**

**Broken upper thread**

Machine not properly threaded; see direction Nr. 10;  
Too strong upper tension; see direction Nr. 12;

Blunt or bent needles; change them;

Needle and thread not fitted to each other and to the stuff to be sewn; see table at the end of this booklet;

Needle passage hole of the plate spoilt by breakages of needles due to pulling the stuff when sewing, or by changing to embroidery before the proper time; smooth the hole with fine emery paper, or change the needle plate if this is not sufficient;

Needles not well inserted with regard to height, or to the long hole for the thread; see direction Nr. 10;

Broken spring of the threadstretcher E (fig. 5); have it changed by a mechanician.

**Broken lower thread**

Bobbin case F (fig. 4) not properly inserted;

Too strong lower tension; see direction Nr. 12;

Thread not properly wound on the bobbin or bobbin too full; see direction Nr. 15;

Spring run by the running thread (fig. 4); change it;

Needle passage hole of the plate spoilt; as for the previous case.

**Broken needles**

Needle not straight;

Upper tension too strong;

Pushing by hand of the stuff during sewing, or of the embroidery frame before the proper time.

**Loop Stitches - Crumpled Stuff and Improper Sewing**

These troubles are generally caused by wrong tension; Be sure that the threadings are regular and the thread be of a good quality and fitted to the needle;

See that the spring of the threadstretcher E (fig. 5) works regularly

Improper sewing can take place when the bobbin has been put in the bobbin case without taking care in what direction the thread has been wound, as stated at the beginning of direction Nr. 8.

Crumpled stuff can also be caused by too long stitches especially if a fine stuff is in question.

### Why transport may be deficient

Too weak pressure of the presser foot for the stuff to be sewn.

The feed dog may be too much worn; if the teeth seem no longer sharp when passing the fingers on the feed, it will be necessary to have it changed by a mechanician.

### Machine hard to work

This is generally due to the thread entering the shuttle bed: proceed as per direction Nr. 7.

Belt too tight: change it. On the contrary if the belt is too long, it will slide on the wheel and require more treadle work than necessary: it must be shortened.

Lack of proper oiling and removing of the waste, which gathers particularly under the needle plate.

### Noisy treadle

This means that play is taking place in the two point screws supporting the foot board, or in the junction of the connecting rod with the foot board, and in the head of the connecting rod, or also in the two ball holder boxes at the ends of the wheel's crank shaft. All these plays can easily be removed by suitable adjustments of the parts in question, but it is always better to have them done by a mechanician.

20

### COTTON & NEEDLE TABLE

Needle Nr.	KIND OF CLOTH	Nrs. of cotton and silk
70	Muslin, cambric, linen cloth and good silk . . . . .	80 to 150 cotton 00 - 000 silk
90	Linen goods, sheetings and heavy silk . . . . .	60 to 80 cotton 0 - 00 silk
100	Thick linen goods, woollen stuffs and clothes . . . . .	50 to 60 cotton A or B silk
110	Heavy woollen goods and all kinds of thick clothes	40 to 50 cotton A or B silk
120	All kinds of stuffs for heavy clothes . . . . .	30 to 40 cotton G or D silk

The needles to be used are those of the 705 system. Keep in mind as a practical rule, that the cotton to be used must pass freely through the eye of the needle and must be completely contained in the groove of it.

Made

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