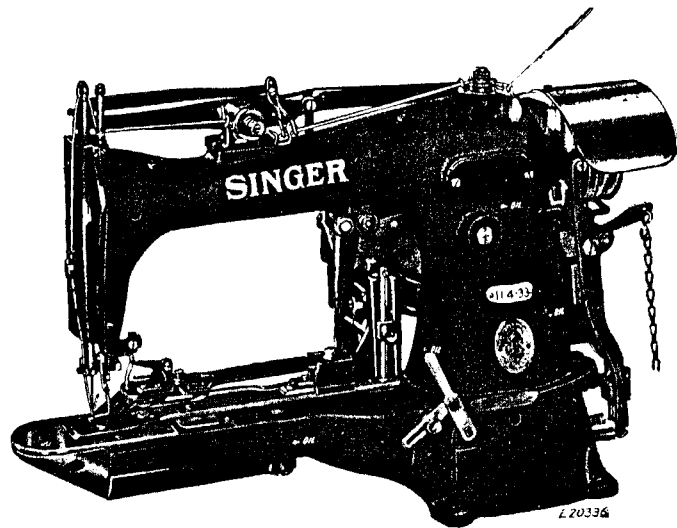


**SINGER**  
**114-27 thru 114-41**

INSTRUCTIONS  
FOR USING AND ADJUSTING  
**SINGER\***  
SEWING MACHINES

**114-27 to 114-41**  
SINGLE THREAD CHAIN STITCH



THE SINGER MANUFACTURING COMPANY

## INDEX

	PAGE
BRAKE—To ADJUST MACHINE DRIVING PULLEY BRAKE.....	32, 33
BUTTON CLAMP	
To ADJUST FOR DIFFERENT SIZES OF BUTTONS.....	12
To REGULATE MOVEMENT LENGTHWISE OF MACHINE BED.....	16
To REGULATE MOVEMENT ACROSS MACHINE BED.....	16, 17
To ADJUST CLAMP LOCKING DEVICE.....	31
BUTTONS—SIZES WHICH CAN BE SEWN	
ON MACHINES 114-28, 114-29 AND 114-38.....	13
ON MACHINE 114-30.....	14
ON MACHINES 114-32, 114-33, 114-34, 114-35 AND 114-37.....	15
To ADJUST FOR SEWING 2-HOLE, 4-HOLE OR BAR BUTTONS.....	17
DESCRIPTION OF MACHINES.....	3, 4
FEED PLATE—To CHANGE.....	12, 13
"HINTS".....	33
LOOPER—To TIME.....	21
NEEDLES	
CLASS, VARIETY AND SIZES.....	10
To SET THE NEEDLE.....	11
To THREAD THE NEEDLE.....	11
NEEDLE BAR—To SET AT CORRECT HEIGHT.....	20, 21
NEEDLE GUARDS—To ADJUST.....	22, 23
OIL—To OIL THE MACHINE.....	7- 9
SET UP THE MACHINE.....	5, 6
SPEED.....	6
"FIRST STITCH MUST BE CORRECTLY MADE".....	20
THREAD CONTROLLER—To ADJUST.....	23
THREAD LOOP FINGER—To TIME AND ADJUST.....	27, 28
THREAD CUTTING MECHANISM—To ADJUST.....	28-31
THREAD NIPPER	
To ADJUST LOWER AUTOMATIC THREAD NIPPER.....	23, 24
To TIME UPPER AUTOMATIC THREAD NIPPER.....	25, 26
To ADJUST FACE PLATE THREAD NIPPER.....	26
THREAD PULL-OFF—To ADJUST.....	25
THREAD TENSION—To REGULATE.....	17
THREAD RETAINER—ADJUST NEEDLE BAR THREAD RETAINER.....	26
THREAD WIPER WIRE—To ADJUST.....	26
THROAT PLATE—To REMOVE AND REPLACE.....	18, 19

### To all whom it may concern:

The improper placing or renewal of the trademark "**SINGER**" or any other of the trademarks of The Singer Manufacturing Company (all of which are duly Registered Trademarks) on any machine that has been repaired, rebuilt, reconditioned, or altered in any way whatsoever outside a SINGER factory or an authorized SINGER agency is forbidden.

## DESCRIPTION

**Machines of Class 114-** have a cylinder bed and are designed for automatically sewing on flat buttons and for tacking paper tickets on clothing. They have one needle and one looper and make the single thread chain stitch. They are all equipped with ball bearing loose pulley.

**Machine 114-27** tacks paper tickets on clothing to distinguish lot, color, size, etc., while in process of manufacture. It is also used for tacking cost marks on finished garments. This machine makes a triangular shaped tack with fourteen stitches, the base of the tack being  $\frac{5}{8}$  inch across and the apex  $\frac{3}{8}$  inch from the base.

**Machine 114-28** sews two or four hole or bar buttons on shirts, shirt waists, underwear, white goods, etc., with fourteen stitches, including a fastening stitch. This machine makes crossed stitches in four hole buttons.

**Machine 114-29** sews two or four hole or bar buttons on clothing, etc., with twenty-one stitches, including a fastening stitch. This machine makes crossed stitches in four hole buttons.

**Machine 114-30** sews two or four hole or bar buttons on coats, cloaks, overcoats, etc., with twenty-one stitches, including a fastening stitch. This machine makes two parallel bars of stitches in four hole buttons. It has an extra high lift needle bar which enables it to successfully handle work up to  $\frac{1}{2}$  inch in thickness, including the button and material. It is fitted with a universal button clamp which will accommodate buttons from 22 to 50 lignes in diameter.

**Machine 114-31** tacks paper tickets on clothing to distinguish lot, color, size, etc., while in process of manufacture. It is also used for tacking cost marks on finished garments and for tacking the cuffs of trousers. It is especially suitable for attaching tickets to waterproof clothing on account of the few needle punctures necessary for each tack. The machine produces a tack  $\frac{3}{16}$  inch in length, each tack consisting of seven stitches.

**Machine 114-32** sews two or four hole or bar buttons on shirts, waists, underwear, white goods, clothing, etc., with fourteen stitches, including the cross stitch and fastening stitch. This machine makes two parallel bars of stitches in four hole buttons, **the work clamp moving alternately right and left across the cylinder.** It has a high lift needle bar which enables it to handle work up to  $\frac{7}{16}$  inch in thickness, including the button and the material.

**Machine 114-33** is the same as Machine 114-32 except that **the work clamp moves alternately back and forth lengthwise of the cylinder.**

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NOTE. Machines 114-28, 114-29, 114-32, 114-33, 114-34, 114-35, 114-37 and 114-38 are regularly fitted with Universal Button Clamp 124740 for sewing on flat buttons from 10 to 50 lignes in diameter (there are 40 lignes to the inch). Other button clamps for special styles of flat buttons can be furnished in place of the regular button clamp, when so ordered.

**Machine 114-34** sews two or four hole or bar buttons on shirts, waists, underwear, white goods, clothing, etc., with twenty-one stitches, including the cross stitch and fastening stitch. This machine makes two parallel bars of stitches in four hole buttons, **the work clamp moving alternately right and left across the cylinder.** It has a high lift needle bar which enables it to handle work up to  $\frac{7}{16}$  inch in thickness, including the button and the material.

**Machine 114-35** is the same as Machine 114-34 except that **the work clamp moves alternately back and forth lengthwise of the cylinder.**

**Machine 114-36** covers the ends of insulated electric conductor wires, making thirty-two stitches, including the fastening stitches.

This machine is equipped with three wire holders handling wires up to and including  $\frac{1}{4}$  inch in diameter, and which slide in and out of the feed plate for convenience when changing for different sizes of work.

**Machine 114-37** sews two or four hole buttons on shirts, waists, underwear, white goods, clothing, etc., with sixteen stitches, including the cross stitch and fastening stitches, making two parallel bars of stitches in four hole buttons. **The work clamp moves alternately back and forth lengthwise of the cylinder.** See note under description of Machine 114-38.

**Machine 114-38** sews two or four hole buttons on shirts, waists, underwear, white goods, clothing, etc., with sixteen stitches, including the fastening stitch, **the work clamp moving alternately right and left across the cylinder.** This machine makes crossed stitches in four hole buttons.

**Machines 114-37 and 114-38** have a high lift needle bar which enables them to handle work up to  $\frac{7}{16}$  inch thick, including the button and the material.

**Machine 114-39** tacks paper tickets on clothing to distinguish lot, color, size, etc., while in process of manufacture. It is also used for tacking cost marks on finished garments. The machine makes a trapezoid shaped tack with nine stitches, the tack being  $\frac{1}{2}$  inch across the base,  $\frac{3}{16}$  inch across the top and  $\frac{1}{4}$  inch along each side.

**Machine 114-40** tacks stockings, cloth and woolen gloves, mittens, etc., with seven cross stitches. Equipped with clamp which leaves end of thread, at completion of operation, projecting from the top of the material for convenience in removing the tack.

**Machine 114-41** tacks stockings, and is also used for tacking paper tickets on clothing to distinguish lot, color, size, etc., while in process of manufacture. This machine makes a triangular tack with fourteen stitches, the base of the tack being  $\frac{5}{8}$  inch across, and the apex  $\frac{3}{8}$  inch from the base. Equipped with a clamp which leaves end of thread, at completion of operation, projecting from the top of the material for convenience in removing the tack.

## To Set Up the Machine

Machines of Class 114- are set with the face plate nearest the operator as shown in Fig. 2.

A hinged base plate is furnished with each machine. Fasten this plate to the top of the table with the hinged portion of the plate flush with back edge of the front table board.

The machine should then be firmly fastened to the hinged base plate by means of four screws.

A belt hole should be bored in the table directly below the machine driving pulley, and the belt guide (A, Fig. 3) fastened to the underside of the table as shown in Fig. 3 on the following page. The machine belt should then be passed around the driving pulley of the machine, around the two belt guide pulleys and around the large pulley on the driving shaft below.

Two treadles are furnished with each machine, one for operating the clamp and one for starting the machine.

The treadles should be fastened to the floor as shown in Fig. 2, and the pitmans connected to the inside edge of each treadle.

A hole should be bored in the table for the chain to connect the left treadle with the lever (F, Fig. 5) on page 8, for operating the clamp.

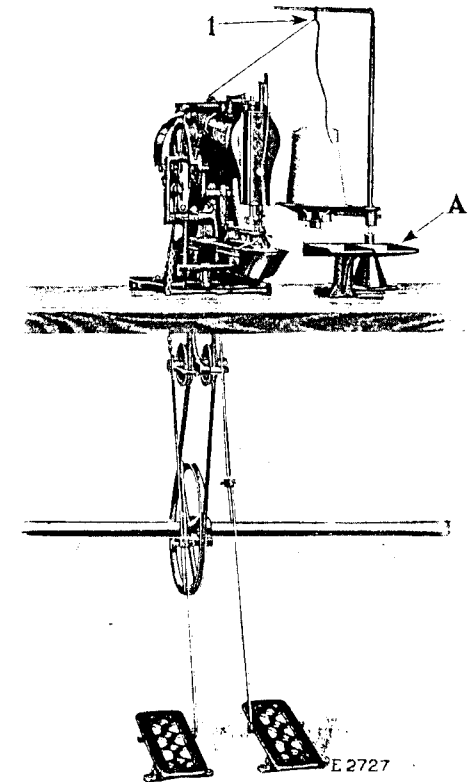


FIG. 2  
MACHINE OF CLASS 114- SET UP  
ON POWER TABLE

## FRONT EDGE OF TABLE

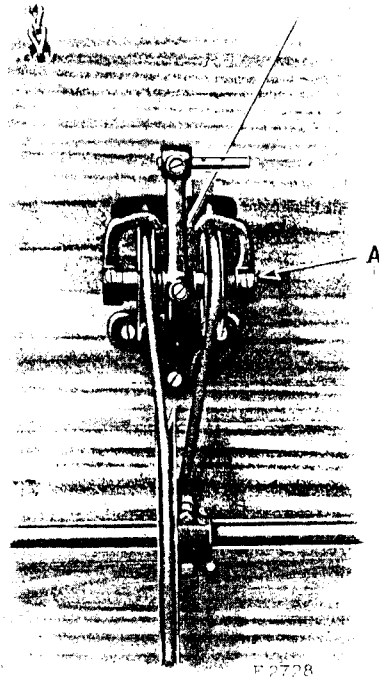


FIG. 3. UNDERSIDE OF POWER TABLE  
SHOWING BELT GUIDE

The pitman connecting the right hand treadle with the starting lever (B, Fig. 4) should be passed through the belt hole in the table as shown in Fig. 3, at right.

The button tray (A, Fig. 2) should be fastened to the top of the table in the position most convenient for the operator.

**NOTICE TO OPERATOR**

**NEVER REST FOOT ON STARTING TREADLE.** As soon as machine is "tripped" this treadle must be completely released in order to operate efficiently. Failure to observe this caution may result in severe damage to machine.

**Speed**

The maximum speed recommended for Machines of Class 114- is 1500 stitches per minute, except Machines 114-31 and 114-36, for which the maximum speed is 1000 stitches per minute. When the machine is in operation, the driving pulley on the machine should always turn over toward the right, as indicated by the arrow in Fig. 4.

**NOTE:** When Machines of Class 114- are to be driven at a speed of 1300 stitches per minute or less, take out the screw (K3, Fig. 4) and remove the brake lever (L3, Fig. 4) and brake spring (M3, Fig. 4).

**To Oil the Machine**

To insure easy running and prevent unnecessary wear of the machine, the parts which are in movable contact should be regularly oiled at the places shown by arrows in Figs. 4, 5, 6 and 7.

Use "TYPE B" or "TYPE D" OIL, sold only by Singer Sewing Machine Company. For description of these oils, see inside of front cover.

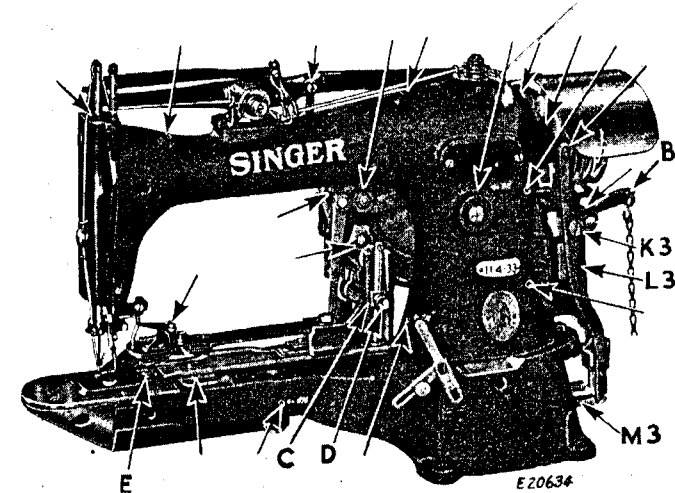


FIG. 4. OILING POINTS AT THE RIGHT OF THE MACHINE  
ALSO ADJUSTMENTS ON THE MACHINE

- B. Lever for Starting the Machine.
- C. Sliding Block for Regulating Throw of Clamp Lengthwise the Machine.
- D. Thumb Screw for Holding Sliding Block (C) in Position.
- E. Nut for Holding Feed Plate in Position.
- K3. Brake Lever Hinge Screw.
- L3. Brake Lever.
- M3. Brake Spring.

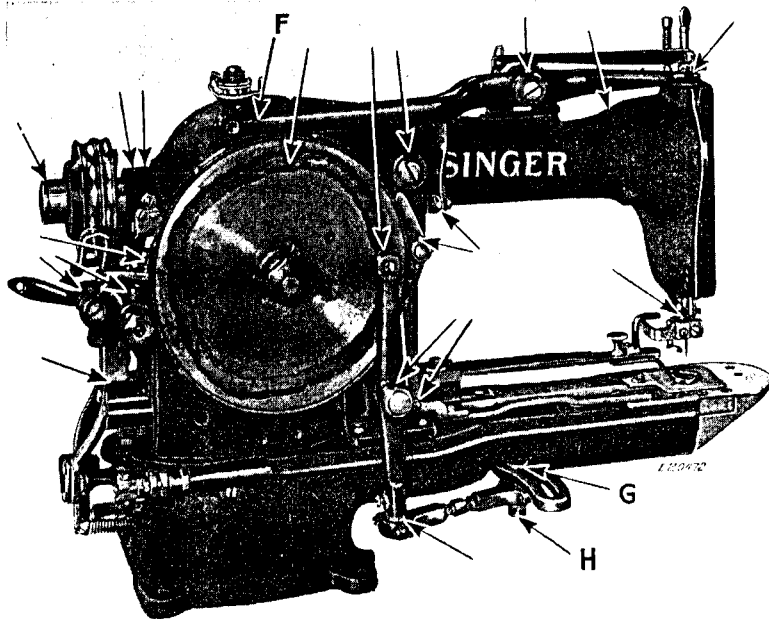


FIG. 5. OILING POINTS AT THE LEFT OF THE MACHINE  
ALSO ADJUSTMENTS ON THE MACHINE

- F. Lever for Raising the Clamp.
- G. Stud for Regulating Throw of Clamp Across the Machine.
- H. Hexagon Nut for Holding Stud (G) in Position.

Take out the screw at the upper end of the face plate, remove the face plate and oil the places shown in Fig. 6.

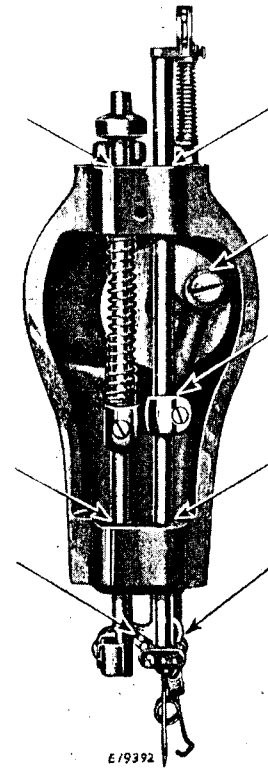


FIG. 6. OILING POINTS  
AT END OF MACHINE

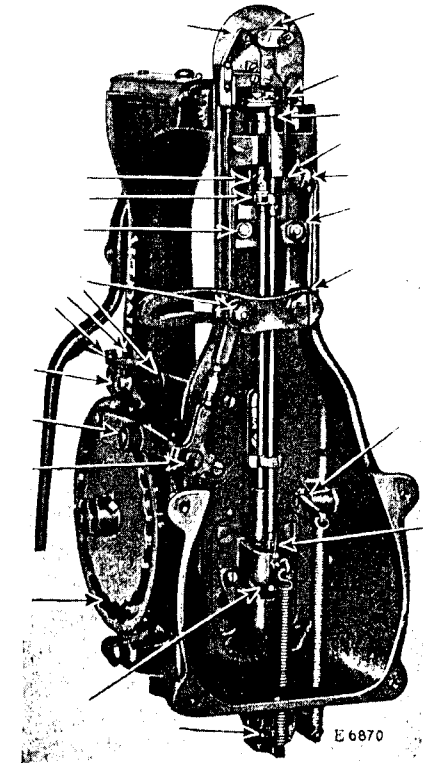


FIG. 7 OILING POINTS IN THE BED  
OF THE MACHINE

To reach the parts underneath the bed of the machine, take out the two front screws in the machine base. Then turn the machine back on its hinges and pull out the cover on the underside of the cylinder. The places to be oiled are indicated by arrows in Fig. 7.

### Needles

Needles for Machines of Class 114- are of the Class and Variety stated in the following table:

MACHINES	CLASS AND VARIETY NUMBERS OF NEEDLES	SIZES OF NEEDLES
114-28 114-29 114-32 114-33 114-34 114-35 114-37 114-38	108 x 1	Cloth, Stub Point Clearance above Eye Nickel Finish Sizes 14, 16, 17, 18, 19, 21 and 22
114-27 114-31 114-39 114-40 114-41	108 x 3	Cloth, Straight Blade Sharp Point Clearance above Eye Nickel Finish Sizes 10, 14, 16, 18 and 19
114-30	16 x 237	Cloth, High Lift Trimmer Short Stub Point Clearance above Eye Nickel Finish Sizes 18, 19, 21, 22 and 23
114-36	16 x 243	Cloth, Short Shank Stub Point Clearance above Eye Sizes 19 and 22

The size of the needle to be used should be determined by the size of the thread, which must pass freely through the needle eye. Do not use rough or uneven thread or thread which passes with difficulty through the needle eye, as such thread interferes with the successful use of the machine.

Orders for needles must specify the *quantity* required, the *size* number; also the *class* and *variety* numbers separated by the letter x.

The following is an example of an intelligible order:

"100 No. 16, 108 x 1 Needles."

The best stitching results will be obtained when using the needles sold by Singer Sewing Machine Company.

### To Set the Needle

Loosen the set screw in the lower end of the needle bar and put the needle up into the bar as far as it will go, with its long groove toward you and the eye of the needle directly in line with the arm of the machine, then tighten the set screw.

### To Thread the Needle

(SEE FIGS. 2 AND 8)

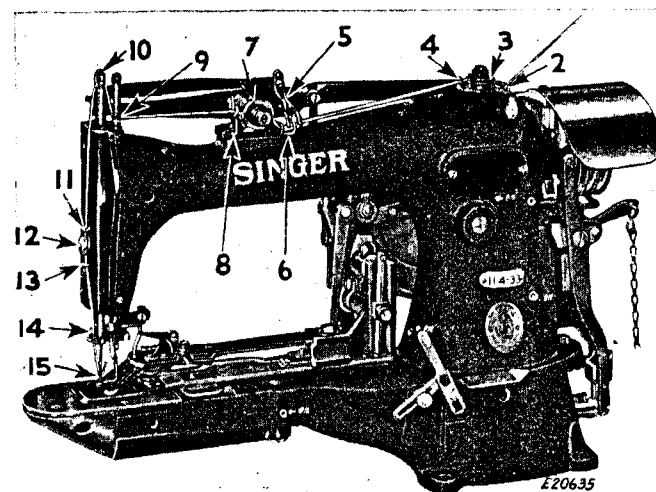


FIG. 8. THREADING THE NEEDLE

Pass the thread from the spool on the thread unwinder into the wire guide (1, Fig. 2, page 5) at the top of the unwinder, from left to right through the first hole in the guide (2, Fig. 8) from right to left through the second hole in the guide (2), then around the left and between the thread nipper discs (3), into the slot (4), over and through the first loop of the thread pull-off (5), under the first loop of the wire guide (6), over and through the second loop of the thread pull-off (5), under the second loop of the wire guide (6), over and between the tension discs (7), through the eyelet (8), through the slot (9), under the thread controller spring, toward you over the thread take-up roller (10) at the top of the needle bar, down into the thread guide (11) at the front of the face plate, around the left side into the thread retainer (12), down through the thread guide (13), through the needle bar thread retainer (14) and from you through the eye of the needle (15). Draw about two inches of thread through the eye of the needle with which to commence sewing.

### To Adjust the Button Clamp for Different Sizes of Buttons

To adjust the button clamp (P, Fig. 9) for the size of button to be sewn on, loosen the screw (K, Fig. 9) and raise the button

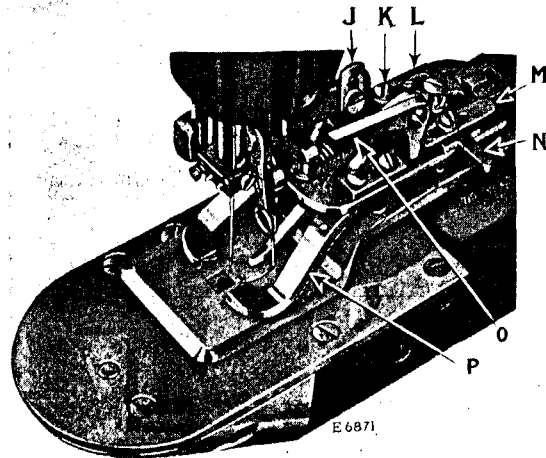


FIG. 9. ADJUSTMENTS ON BUTTON CLAMP

clamp. Then open the clamp by means of the lever (N, Fig. 9) and insert the button in the clamp, pushing it back as far as it will go. When the button is correctly placed into position in the clamp, release the lever (N) and move the stop plate (L, Fig. 9) back until it rests against the button clamp spreader lever (N), then securely tighten the screw (K) to retain the adjustment.

The button clamp opening lever pieces (J and M, Fig. 9) should be adjusted so that they come into contact with the button clamp opening lever (O, Fig. 9) to open the button clamp when the button clamp is raised.

### To Change the Feed Plate

**Machines 114-28, 114-29, 114-32, 114-34 and 114-38** are equipped with feed plate 124747 for two-hole and bar buttons and feed plate 62297 for four-hole buttons.

**Machines 114-33, 114-35 and 114-37** are equipped with feed plate 124683 for two-hole and bar buttons and feed plate 62297 for four-hole buttons.

**Machine 114-30** is equipped with three feed plates as follows:

- Feed Plate 124875,  $\frac{3}{32}$  inch hole, for small size buttons.
- Feed Plate 124867,  $\frac{5}{16}$  inch hole, for medium size buttons.
- Feed Plate 124837,  $\frac{3}{8}$  inch hole, for large size buttons.

Care must be taken to select the correct feed plate for the size of button to be sewn on. If the hole in the feed plate used is too large for the button being sewn on, the material is liable to be pushed into the hole by the button or the needle, causing the machine to skip stitches.

To change the feed plate, remove the nut (E, Fig. 13, page 18), lift off the feed plate and put the desired feed plate in its place, being careful to have the four position pins enter the holes in the feed plate, then securely tighten the nut (E).

### Sizes of Buttons which can be Sewn on by Machines 114-28, 114-29 or 114-38

Fig. 10 shows the range of buttons which can be handled by Machines 114-28, 114-29 or 114-38. The maximum length of

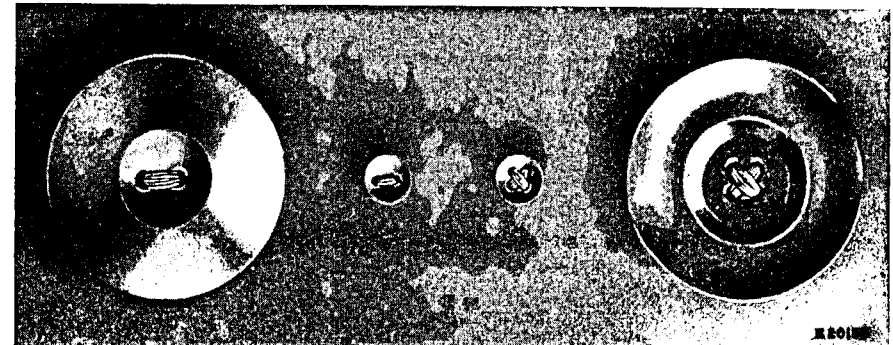


FIG. 10. BUTTONS SEWN ON BY MACHINE 114-28, WITH FOURTEEN STITCHES  
THESE BUTTONS CAN ALSO BE SEWN ON BY MACHINE 114-29,  
WITH TWENTY-ONE STITCHES, AND ON MACHINE  
114-38 WITH SIXTEEN STITCHES  
(BUTTONS FULL SIZE)

stitch made is  $\frac{5}{32}$  inch, so that four-hole buttons in which the holes for the stitches are in excess of  $\frac{5}{32}$  inch from centre to centre cannot be handled on any of these machines, nor can two-hole buttons in which the holes are more than  $\frac{5}{32}$  inch apart from centre to centre. The minimum length of stitch made is  $\frac{5}{64}$  inch, so that four-hole buttons in which the holes for the stitches are less than  $\frac{5}{64}$  inch from centre to centre cannot be handled on any of these machines, nor can two-hole buttons in which the holes are less than  $\frac{5}{64}$  inch apart from centre to centre.



Sizes of Buttons which can be Sewn on by  
Machine 114-30

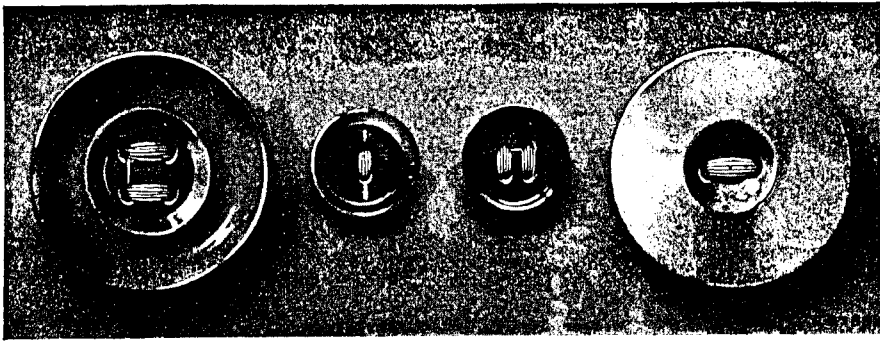


FIG. 11. BUTTONS SEWN ON BY MACHINE 114-30, WITH TWENTY-ONE STITCHES  
(BUTTONS FULL SIZE)

Fig. 11 shows the range of buttons which can be handled by Machine 114-30. The maximum length of stitch made is  $\frac{9}{32}$  inch, so that four-hole buttons in which the holes for the stitches are in excess of  $\frac{9}{32}$  inch from centre to centre cannot be handled on the machine, nor can two-hole buttons in which the holes are more than  $\frac{9}{32}$  inch apart from centre to centre. The minimum length of stitch made is  $\frac{1}{8}$  inch, so that four-hole buttons in which the holes for the stitches are less than  $\frac{1}{8}$  inch from centre to centre cannot be handled on machine, nor can two-hole buttons in which the holes are less than  $\frac{1}{8}$  inch apart from centre to centre.

Sizes of Buttons which can be Sewn on by  
Machines 114-32, 114-33, 114-34, 114-35 or 114-37

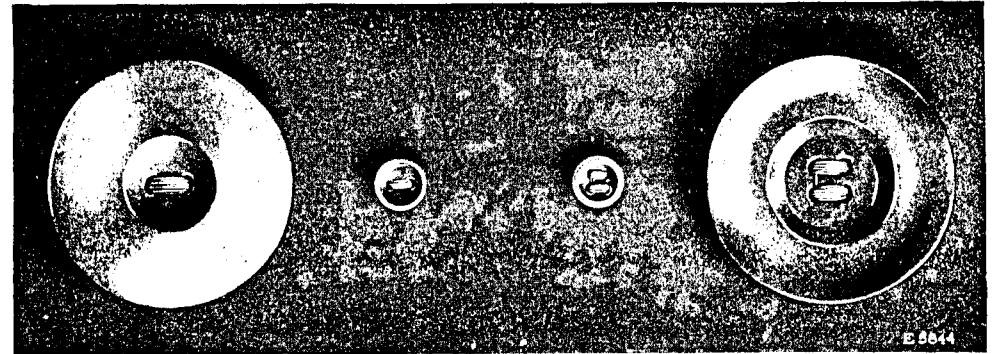


FIG. 12. BUTTONS SEWN ON BY MACHINE 114-32 WITH FOURTEEN STITCHES  
OR BY MACHINE 114-34, WITH TWENTY-ONE STITCHES THE BARS  
OF STITCHES BEING MADE ACROSS THE CYLINDER

THESE BUTTONS CAN ALSO BE SEWN ON BY MACHINE 114-33, WITH FOURTEEN  
STITCHES, OR BY MACHINE 114-35, WITH TWENTY-ONE STITCHES, OR BY  
MACHINE 114-37, WITH SIXTEEN STITCHES THE BARS OF STITCHES  
BEING MADE LENGTHWISE OF THE CYLINDER  
(BUTTONS FULL SIZE)

Fig. 12 shows the range of buttons which can be handled by any one of Machines 114-32, 114-33, 114-34, 114-35 or 114-37. The maximum length of stitch made is  $\frac{3}{16}$  inch, so that buttons in which the holes for the stitches are in excess of  $\frac{3}{16}$  inch from centre to centre cannot be handled on any of these machines. The minimum length of stitch made is  $\frac{5}{64}$  inch, so that buttons in which the holes for the stitches are less than  $\frac{5}{64}$  inch from centre to centre cannot be handled on any of these machines.

### To Regulate the Movement of the Button Clamp Lengthwise of the Machine Bed

The throw or amount of movement of the button clamp lengthwise of the bed of the machine is regulated by means of the sliding block which is fastened into position by the thumb screw (D, Fig. 12A) in the upright slot of the feed regulator. This sliding block cannot be seen in Fig. 12A, but the upright slideway or slot housing is shown at (B4) and the top of the feed regulator post, to which the sliding block is fastened, is shown at (C4). The sliding block is shown at (C, Fig. 4, page 7).

To increase the throw or movement of the button clamp lengthwise of the cylinder bed, loosen the thumb screw (D) and move the sliding block downward.

To decrease the lengthwise movement of the clamp, move the sliding block upward.

When the sliding block is at its highest position in the upright slot (B4) there will be no movement of the clamp lengthwise of the machine bed.

Make sure that when the needle descends it will centre in each hole in the button. After the required movement of the clamp is obtained, tighten the thumb screw (D).

### To Regulate the Movement of the Button Clamp Across the Machine Bed

The throw or amount of movement of the button clamp across the machine bed is regulated by means of the movable stud (G, Fig. 12A) which is fastened into position by the hexagon nut (H) in the slot at the left and under the bed of the machine. To increase the crosswise movement of the clamp, loosen hexagon nut (H) and move stud (G) to the right in the slot; or to the left

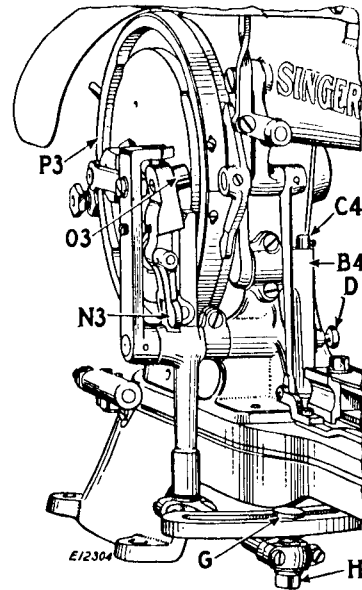


FIG. 12A  
TO REGULATE THE MOVEMENT  
OF THE BUTTON CLAMP

to decrease the movement. Make sure that, when the needle descends, it centres in each of the holes in the button. When the required movement of the clamp is obtained, securely tighten the hexagon nut (H).

### To Adjust Machines 114-28, 114-29, 114-30, 114-32, 114-34 and 114-38 for Sewing Two-Hole, or Four-Hole, or Bar Buttons.

**For Two-Hole or Bar Buttons.** Loosen thumb screw (D, Fig. 4) in the sliding block (C, Fig. 4) in the upright slot at the extreme rear of the clamp arm, and move the sliding block up to its highest position in the slot, then tighten the thumb screw. Then adjust the movement of the clamp across the bed of the machine, as instructed on page 16, to bring the needle to the centre of each of the holes in the button.

**For Four-Hole Buttons,** adjust the movement of the clamp across the bed of the machine, as well as lengthwise of the bed of the machine, as instructed on page 16, to bring the needle to the centre of each of the holes in the button.

### To Adjust Machines 114-33, 114-35 and 114-37 For Sewing Two-Hole, or Four-Hole, or Bar Buttons

In these machines, adjustment for Two-Hole, or Four-Hole, or Bar Buttons is made by means of the lever (N3, Fig. 12A) at the left of the machine.

**For Two-Hole or Bar Buttons,** turn the lever (N3) to the left and down as far as it will go. This removes the roller (O3) from the rollerway in the cam (P3), thus placing the feed-across movement in neutral. This position of the lever (N3) is shown in Fig. 12A. The movement of the clamp lengthwise of the bed is then adjusted, as instructed on page 16, to bring the needle to the centre of each hole in the button.

**For Four-Hole Buttons,** turn the lever (N3) up as far as it will go, in a clockwise direction. This places the roller (O3) in the rollerway in the cam (P3) for operation of the feed-across mechanism. The movement of the clamp across, as well as lengthwise of the bed of the machine, is then adjusted as instructed on page 16, to bring the needle to the centre of each hole in the button.

### To Regulate the Tension on the Thread

The tension on the thread should be as tight as possible without breaking the thread. To increase this tension, turn the thumb nut at the right of the tension discs (W2, Fig. 27, page 32) over from you. To decrease the tension, turn this thumb nut over toward you.

## INSTRUCTIONS FOR ADJUSTERS AND MACHINISTS

When it is necessary to remove the throat plate from the Class 114 Machines, be guided by the following instructions:

### To Remove and Replace the Throat Plate

**Machines 114-28, 114-29, 114-30, 114-32, 114-34 and 114-38.**

Remove the needle. Remove the feed plate nut (E, Fig. 13). Raise the clamp and remove the feed plate (Q3). Remove screw (R3) in the front end of the thread nipper lower connection (S3) and raise the front end of the connection (S3) from the stud on the thread nipper blade carrier (J3, Fig. 18), thus uncovering the throat plate screw (T3). Remove screw (T3) as well as the other three throat plate screws (U3). Remove the two

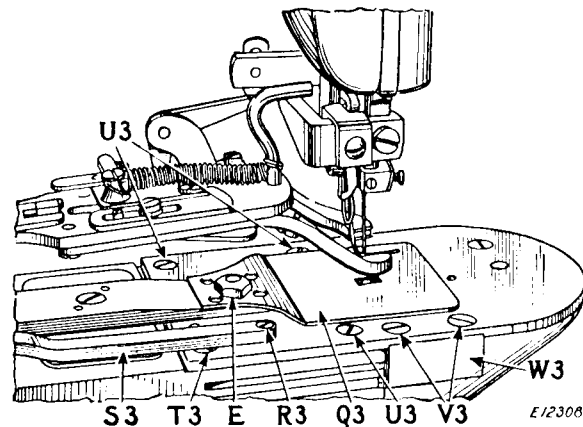


FIG. 13. TO REMOVE THROAT PLATE  
(TOP VIEW)

Screws (V3) which fasten the thread cutter (lower) pull-off bar guide and knife-holder (W3, Fig. 14) to the throat plate. Remove the two front screws in the machine base, turn the machine back on its hinges and withdraw the cover from the underside of the cylinder bed. Incline the throat plate to the right, as shown in Fig. 14, to disengage the pin (X3) of the thread (lower) pull-off holder from the fork (Y3) of the thread (lower) pull-off holder connection (X2), then complete the withdrawal of the throat plate, **making certain that the hook of the thread breaker or puller (H3) is entirely above, or back of, the loop finger (M2) as shown in Fig. 14, so that the throat plate can be completely removed without the hook (H3) catching onto the loop finger (M2).**

If, when the throat plate is removed, the lower automatic thread nipper (J3, Fig. 18) becomes disengaged from its pivot on the throat plate, be sure to replace it on the pivot.

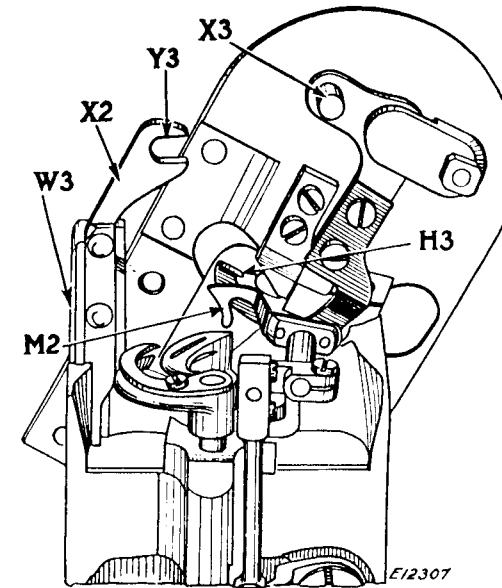


FIG. 14. THROAT PLATE PARTLY REMOVED

To replace the throat plate, reverse the operations for removal, **making sure that the hook (H3) passes above, or in back of, the finger (M2), and that the pin (X3) is in the fork (Y3).**

Insert and tighten the screws (T3), (U3) and (V3) shown in Fig. 13. Replace the feed plate (Q3, Fig. 13) and tighten the nut (E).

Attach the front end of the connection (S3) to the thread nipper blade carrier (J3, Fig. 18) by means

of screw (R3, Fig. 13). Replace the cover on the underside of the cylinder bed, and replace the needle.

**Machines 114-27, 114-39 and 114-41.** The removal of the throat plate from these machines is accomplished in practically the same manner as above and on page 18. Fig. 14 will serve to illustrate the underside of the throat plate for these machines, except that the appearance of the thread breaker or puller (H3) and the loop finger (M2) is somewhat different than as shown in Fig. 14. **The same caution that the hook (H3) pass above, or in back of, the finger (M2) must be observed.** Otherwise the removal and replacement are identical.

**Machines 114-31, 114-33, 114-35, 114-36, 114-37 and 114-40.** The removal and replacement of the throat plate from these machines is accomplished in the same manner as for the machines mentioned above and on page 18, except that, there being no finger (M2), there is no necessity for the caution emphasized on page 18.

### The First Stitch Must be Correctly Made

The successful stitching operation of Machines of Class 114 depends largely upon the making of the first stitch. If this stitch is skipped, or pulls out after being made, the whole operation will be more or less a failure and, in most cases, make it necessary to do the work over. This will also, in button sewing, often cause an end of the thread or loose loop to show on the top side of the button. To avoid this trouble, it is necessary to give careful attention to the timing of the looper with the needle, and also to see that the thread nipper (lower) (J3, Fig. 18, page 23) on the underside of the throat plate functions properly.

Also make sure that the button clamp holds the button and material down on the feed plate as firmly as possible, to prevent the material rising with the needle. If the material moves up or down with the needle, the formation of the needle loop will be affected, and if excessive, will prevent the formation of the loop, causing skipped stitches. This is particularly true when making the first and second stitches in button sewing. After one or more stitches are made this is not so liable to happen, as the button and material are fastened together by these stitches which prevent the material from rising with the needle. Any condition of machine or material that will prevent the formation of the first stitch must be given the closest attention, or the machine will not operate satisfactorily.

### To Set the Needle Bar at Correct Height

When the needle bar is at the lowest point of its stroke, the distance from the top of the arm casting to the top of the screw which fastens the thread take-up (F, Fig. 15) to the needle bar should be approximately  $\frac{1}{4}$  inch, as indicated at (E) in Fig. 15. The upper part of the thread take-up (F) is not included in this measurement.

In case it is necessary to raise or lower the needle bar, loosen the set screw (D) which fastens the needle bar in position in the

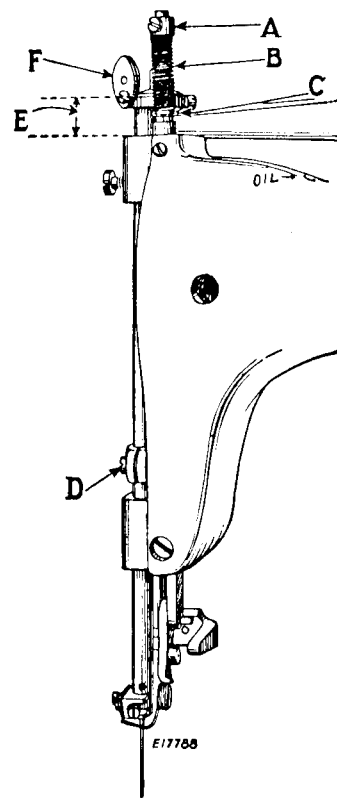


FIG. 15

needle bar connecting stud. After loosening the set screw, move the needle bar up or down in the needle bar connecting stud until it is at the desired height, then securely tighten the set screw (D).

### To Time the Looper

See that the needle bar is set as instructed on page 20 and above, then turn the machine driving pulley until the needle bar moves down to its lowest position. When the needle bar is in this position, the distance from the point of the looper to the centre of the needle should be  $\frac{5}{32}$  inch. If this distance is not  $\frac{5}{32}$  inch, loosen the two set screws in the looper shaft coupling (U, Fig. 17, page 22) and turn the shaft and looper until the looper is set at the required position as instructed above, then securely tighten the two set screws in the looper shaft coupling (U, Fig. 17).

Now turn the machine driving pulley in the direction in which

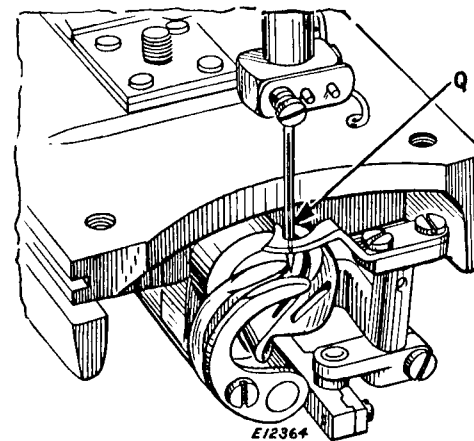


FIG. 16

it rotates until the point of the looper reaches the centre of the needle as shown at (Q) in Fig. 16. With the looper in this position, the needle bar should have risen about  $\frac{1}{8}$  inch, and the top of the needle eye should be about  $\frac{3}{32}$  inch below the point of the looper as shown in Fig. 16.

Thread the machine and place a button in the clamp and a piece of material under the clamp, then lower the clamp. By turning the machine driving pulley by hand, and at the same time

watching the formation of the loop and how the point of the looper enters it, it is easy to determine whether the needle bar should be raised or lowered, or the looper timed earlier or later to get the loop where it is at its best.

For some threads it may be necessary to set the needle bar and time the looper differently than as required by others, owing to the difference in finish, twist, elasticity, etc. This is also true of the different materials to be sewn.

### To Adjust the Needle Guards

Before adjusting either of the needle guards in the machine, see that the needle is straight and that there is no work in the machine. The purpose of the needle guard (X, Fig. 17) is to prevent the needle striking the point of the looper when deflected by imperfect buttons or from other causes. The needle guard is operated by the small cam (V, Fig. 17) on the looper shaft and can be timed by loosening the two set screws in the cam (V) and turning the cam as required, after which securely tighten the two set screws. The needle guard should be timed so that when the point of the looper is even with the far side of the needle, in taking the needle loop, the guard should start to swing away from the looper.

The position of the needle guard with relation to the looper is controlled by the needle guard shaft crank (R, Fig. 17) and spring (T, Fig. 17), which holds the roller on the crank against the cam. The tension on this spring should be sufficient to hold the roller against the cam at all times; but not enough to make the machine run hard. The tension on this spring can be regulated by turning the knurled collar (S, Fig. 17) on the shaft.

The needle guard should be set so that when the needle is at its lowest position, the distance from the point of the needle guard to centre of needle will be  $\frac{1}{8}$  inch, and the needle guard will just touch the rear side of the needle. The needle guard can be set to this position by moving it on or off its shaft, as required.

The purpose of the stationary needle guard, which is screwed to the underside of the throat plate, as shown at (F3, Fig. 18), is to prevent the needle from being sprung away from the looper. This needle guard should be adjusted so that it just touches the front side of the needle when the needle is at its lowest position.

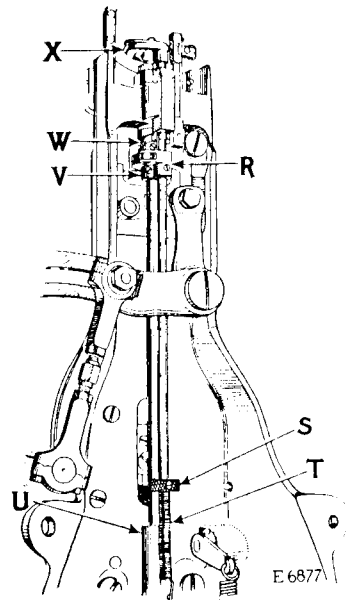


FIG. 17

Owing to the smallness of the needle loop made in Machines of Class 114-, it is necessary that the looper point pass as close as possible to the needle, but without actually rubbing against it. The looper can be moved in or out, as required, after loosening the set screw which holds it in position. When the looper is correctly set, securely tighten the set screw.

### To Adjust the Thread Controller

The thread controller (B, Fig. 15, page 20) is intended to relieve any undue strain on the thread which may be caused when setting the stitch or by variation in the thickness of buttons or material, or by other conditions. It also helps to prevent the end of the thread from being pulled out of the under thread nipper (J3, Fig. 18) too soon at the start of the sewing operation. The tension on the thread controller spring (B, Fig. 15) should be just sufficient to insure the spring working in accordance with the speed at which the machine is driven. After the end of the thread has been caught by the thread nipper (J3, Fig. 18) and the looper has taken the second needle loop and starts to draw the thread, the tension on the thread controller spring (B) should allow the thread controller sleeve (C, Fig. 15) to be raised about  $\frac{3}{16}$  inch by the strain on the thread before the thread begins to slip through the thread nipper (J3). The tension on the thread controller spring (B) is regulated by loosening the set screw in the collar (A, Fig. 15) and moving this collar up or down as required, after which the set screw should be securely tightened.

### To Adjust the Lower Automatic Thread Nipper

The function of the lower automatic thread nipper, located on the underside of the throat plate, as shown at (J3, Fig. 18) is to catch the end of the thread after the looper has drawn it down through the goods and throat plate, on the first stroke of the needle at the beginning of each operation, and to hold the thread securely enough to prevent its being drawn out of the goods by the needle on its second descent, or by the looper when taking the second loop. The thread nipper should hold the end

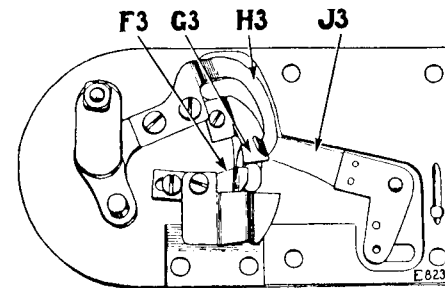


FIG. 18

of the thread just firmly enough to prevent its being drawn out of the goods, and no more. If the pressure of the thread nipper is too great, the thread will break as soon as the looper begins to

draw the thread after taking the second loop from the needle. After the looper has taken the second loop and the needle point is about out of the goods, the looper will require thread and at this point it should be able to draw thread from the nipper. The pressure of the nipper should, therefore, not be enough to prevent this taking place. When the needle bar about reaches the highest point of its second stroke, the nipper should start moving back and release the end of the thread entirely.

The pressure of the thread nipper can be regulated by removing the throat plate (see instructions on pages 18 and 19) and nipper, and bending the nipper blade (J3, Fig. 18) until it holds the thread as required.

The timing of the operation of the thread nipper is controlled by the nipper cams (B3, Fig. 19) fastened to the rim of the feed

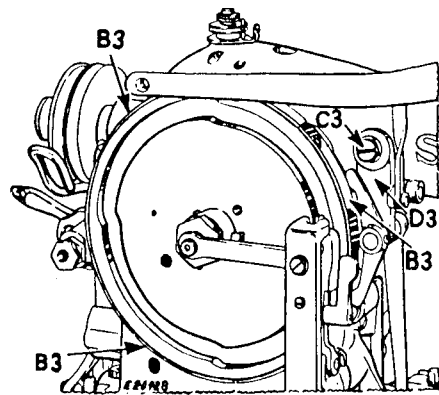


FIG. 19

cam by means of two screws in each cam. After loosening these screws, the cams can be moved to make the nipper operate earlier or later, as required.

It is necessary, in observing the effect of moving one of these cams, to make certain which one was moved and when it comes into operation again, because on some of these machines, the cam operates at every second group of

stitches, while on others the cam operates at every third group of stitches. The thread nipper (lower) shaft bracket (D3, Fig. 19) is adjustably connected to the machine arm and can be moved, after loosening the screw (C3), to take up any excess motion between the thread nipper lever and the cam. When setting this bracket, be sure that it is not set to cause binding, as the mechanism must work freely.

In machines equipped with a button clamp locking device, make certain that the moving of bracket (D3) does not cause this device to bind or make end play in the shaft. If it does, loosen the two pinch screws (H2, Fig. 26, page 31) in the button clamp locking device latch (G2, Fig. 26) and adjust this latch, as required, then tighten the pinch screws (H2). The latch (G2) should be set so that when the button clamp is down on the goods, the stop cam interlocking rod case (K2, Fig. 26) can just pass it when the starting lever (J2, Fig. 26) is depressed.

### To Adjust the Thread Pull-off

The thread pull-off (R2, Fig. 27, page 32) controls the amount of thread which is held in the automatic thread nipper located in the underside of the throat plate. It should be adjusted to pull off only as much thread as will be required to leave an end long enough for the nipper to hold. If the end of the thread held in the nipper is too long, loosen the screw and lower the thread pull-off (R2), thus pulling off less thread. If the end of the thread held in the nipper is too short, raise the thread pull-off, thus pulling off more thread. When the thread pull-off has been adjusted to the required position securely tighten its set screw.

For some threads, it may be necessary to set the thread pull-off differently from that required by others, owing to the differences in finish, twist, elasticity, etc.

As the amount of thread drawn off by the thread pull-off (R2) is controlled by the treadle, it is obvious that the operator must always raise the button clamp to the highest point.

### To Time the Upper Automatic Thread Nipper

The upper automatic thread nipper (V2, Fig. 20) should be timed so that it starts to open when the needle bar is about  $\frac{3}{8}$  inch from the highest position of its upward stroke for light work such as sewing buttons on shirts, etc., while for heavier work, the thread nipper (V2) should start to open slightly sooner.

To time the thread nipper (V2), loosen the two set screws (W2) in the cam on

the arm shaft inside the machine and turn the cam downward (toward you) for earlier opening of thread nipper (V2), or turn

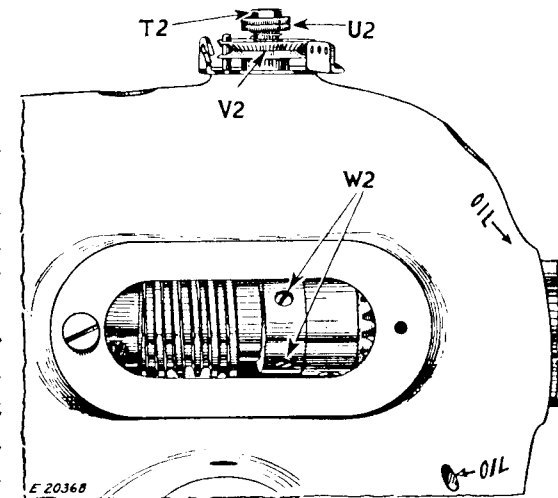


FIG. 20

the cam upward (away from you) for later opening, after which securely tighten the two set screws (V2). The upper automatic thread nipper discs (W2) should be adjusted to open only enough to permit the thread to be pulled through. To increase the opening of the nipper discs, loosen lock nut (T2, Fig. 20) and turn thumb nut (U2, Fig. 20) around to the right, or downward. To decrease the opening, turn thumb nut (U2) around to the left or upward. When the nipper discs open enough, securely tighten lock nut (T2).

#### Adjustment of Face Plate Thread Nipper

The tension spring in the face plate thread nipper (A2, Fig. 21) should be only strong enough to overcome the tension of the needle bar thread retainer (B2) to keep the thread taut between the needle and the work.

#### Adjustment of Needle Bar Thread Retainer

The needle bar thread retainer (B2, Fig. 21) should be adjusted to produce a very light tension on the thread.

#### To Adjust the Thread Wiper Wire

The thread wiper wire (Y2, Fig. 21) should be set so that it stands at the right of the needle when the machine is sewing. There should be a clearance of  $\frac{5}{16}$  inch between the needle and the eyelet of the thread wiper wire. When the clamp is raised, the thread

wiper wire (Y2) should move to the left and draw the end of the thread out of the goods, and then return to its normal position when the clamp is lowered.

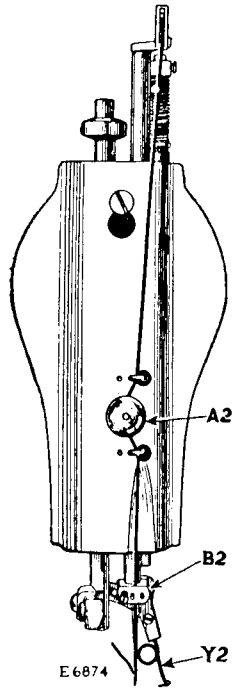


FIG. 21

#### To Time and Adjust the Thread Loop Finger

The thread loop finger (M2, Fig. 22) carries the needle thread loop to the rear and to the left of the needle so that the needle can pass the loop on the outside regardless of the direction of feed. The positioning of the loop in this manner insures that the next loop formed will be entered by the looper and carried through the previous loop and that the loop cannot be twisted when the work is fed either toward or away from the operator.

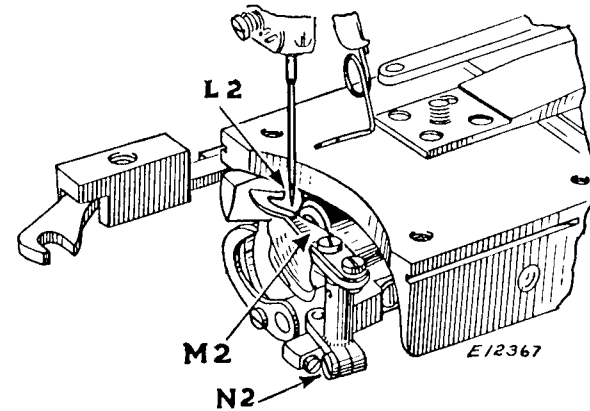


FIG. 22

The loop finger (M2, Fig. 22) must be timed so that it starts its movement toward the rear of the machine when the needle commences its downward stroke. In case the loop finger is not correctly timed, loosen the two set screws in the cam (W, Fig. 17, page 22) on the looper shaft and turn this cam over to the right or left, as may be required, until the correct timing is obtained, then securely tighten the two set screws in the cam.

The loop finger in Machine 114-38 is timed so that it starts its movement toward the rear of the machine when the needle bar, on its upward stroke, reaches a point within  $\frac{3}{32}$  inch from the top of its stroke.

The loop finger should be set so that when the point of the needle has reached the level of the loop finger on the downward stroke of the needle bar, there will be a clearance of  $\frac{1}{16}$  inch between the point of the needle and the point of the loop finger as shown at L2, in Fig. 22.

When the needle bar is at its lowest position, there should be a clearance of not less than  $\frac{1}{32}$  inch between the needle and the point of the loop finger as shown at O2, in Fig. 23.

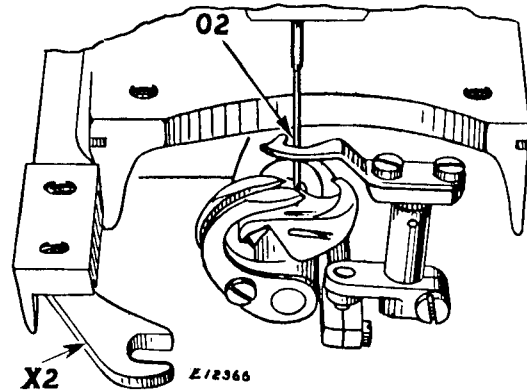


FIG. 23

If the loop finger is not correctly set as instructed above, loosen the screw (N2, Fig. 22) and turn the loop finger until it is set as required, then securely tighten the screw (N2).

**To Adjust the Thread Cutting Mechanism on  
Machines 114-28, 114-29, 114-30, 114-32, 114-33, 114-34,  
114-35, 114-36, 114-37 and 114-38**

The thread breaker or puller (H3, Fig. 18) automatically draws the thread against the cutting edge of the knife (G3, Fig. 18) at completion of sewing on of the button, causing the thread to be cut close to the stitches on the underside of the fabric.

The thread breaker or puller (H3, Fig. 18) has no cutting edge. **Therefore, the thread breaker must never be sharpened.** The edge which comes in contact with the thread should be rounded and smooth.

If the knife (G3, Fig. 18) fails to cut the thread, the upper automatic thread nipper (V2, Fig. 20), at the top of the machine, may be opening too far. See instructions on pages 25 and 26 for adjustment of the upper automatic thread nipper.

Failure of the knife (G3) to cut the thread may also be due to improper adjustment of tension (W2, Fig. 27), knife (G3), face plate thread nipper (A2, Fig. 21), needle bar thread retainer (B2, Fig. 21), or the thread breaker (H3) may not be timed early enough. The knife (G3) may be dull, in which case remove it and sharpen its cutting edge. See page 26 for adjustment of the face plate thread nipper and needle bar thread retainer.

The tension (W2, Fig. 27) should be adjusted to produce sufficient tension on the thread to prevent thread from being drawn through the tension discs when the thread breaker (H3) draws the thread against the knife.

The thread breaker or puller (H3) can be timed earlier by loosening the two screws (E3, Fig. 24) in the thread breaker bar check (H4, Fig. 24) and moving the connection (X2, Fig. 23) toward the operator, after which securely tighten the two screws (E3).

**CAUTION—Do not advance the connection (X2) far enough to cause the thread breaker or puller (H3) to interfere with the loop of thread on the looper.**

When it becomes necessary to time the thread breaker or puller (H3, Figs. 18 and 25) it might also be necessary to limit

the amount of movement of the thread breaker bar (M4, Fig. 24) which actuates the thread breaker or puller (H3, Fig. 18). The movement or overthrow of the thread breaker or puller (H3) is controlled by regulating the tension of the coil spring on the thread breaker bar check plunger (D4) to limit the movement of the thread breaker bar check (H4). The coil

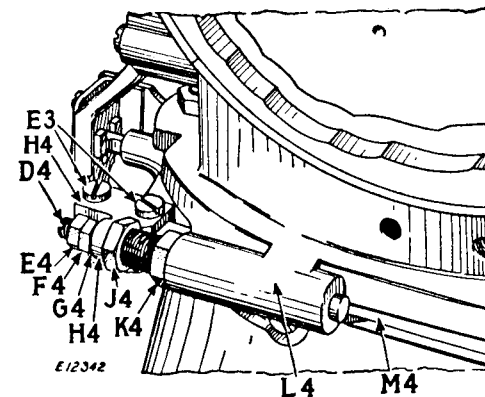


FIG. 24

TO REGULATE OVERTHROW OF THREAD BREAKER BAR

spring on the thread breaker bar check plunger (D4) is not visible in Fig. 24, as it is inside the thread breaker bar check plunger case (L4).

To increase the tension of this coil spring, loosen lock nut (K4) and turn the thread breaker bar check regulating screw (J4) to the right (away from the machine arm), or turn the regulating screw (J4) to the left (toward the machine arm) to decrease the tension of the coil spring. When the required tension is obtained, tighten the lock nut (K4).



If the space at (G4, Fig. 24), between the nut (F4) and the bar check (H4) is too narrow, the movement or overthrow will be too limited and will prevent the machine from "tripping" and coming to the stopped position. The space at (G4) should be  $\frac{1}{32}$  inch. With a screwdriver in the slot at (D4), set the nuts (E4) and (F4) to provide this space of  $\frac{1}{32}$  inch, and make sure that the lock nut (E4) is securely tightened against the nut (F4).

### To Adjust the Thread-Cutting Mechanism on Machines 114-27, 114-39 and 114-41

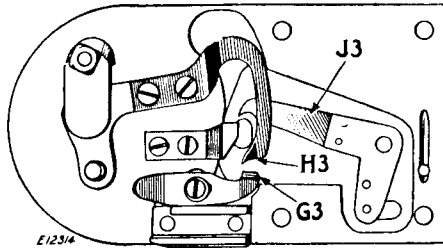


Fig. 25

In these machines the function of the thread breaker or puller (H3, Fig. 25), in drawing the thread against the cutting edge of the knife (G3, Fig. 25) is the same as in Machines 114-28, 114-29, 114-30, 114-32, 114-33, 114-34, 114-35, 114-36, 114-37 and 14-38, except that in Machines 114-27, 114-39 and 114-41 the thread breaker or puller

(H3) moves downward (in Fig. 25), that is, to the left when the throat plate is in the machine, instead of upward (in Fig. 18), that is, to the right with the throat plate in the machine. In all other respects the adjustment is as instructed at the bottom of page 28, entire page 29, and top of this page.

### To Adjust the Thread-Cutting Mechanism on Machines 114-31 and 114-40

In these machines the knife is actuated by the overthrow of the thread breaker bar (M4, Fig. 24) when it comes to a stop at the finish of the stitching operation. One adjustment is for setting the knife so that the cutting portion will enter the needle loop on the looper and cut the back strand of thread when the overthrow takes place. This adjustment is made by loosening

the two set screws which fasten the knife in its holder, and sliding the knife in or out of the holder as may be required, after which securely tighten the two set screws.

Another adjustment is to position the knife, when it is out of operation, so that it will not interfere with the needle or looper. Loosen the two set screws (E3, Fig. 24) in the thread breaker bar check (H4, Fig. 24) and move the knife to the desired position, after which securely tighten the two screws (E3, Fig. 24). Keep the knife sharp. In all other respects, the adjustment is the same as on page 29 and the top of page 30.

### To Adjust the Clamp Locking Device

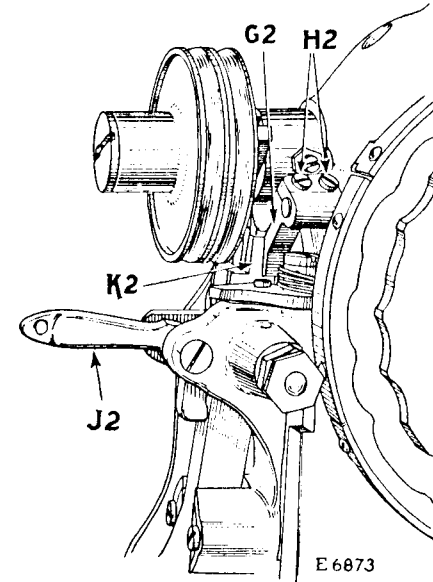


Fig. 26

This device prevents the clamp from being raised before machine is automatically stopped. It is correctly set when the machine leaves the factory. In case adjustment is necessary, the correct setting can be determined as follows:

Clamplocking device latch (G2) should be set so that when the clamp is lowered on the goods, the stop cam interlocking rod case (K2) can just pass the latch when starting lever (J2) is pressed down. Loosen the two pinch screws (H2) and adjust latch to required position, then tighten screws (H2).

### To Adjust the Machine Driving Pulley Brake

Owing to the increased speed of these machines, they are fitted with a brake as shown at S2, Fig. 27. This brake is automatically

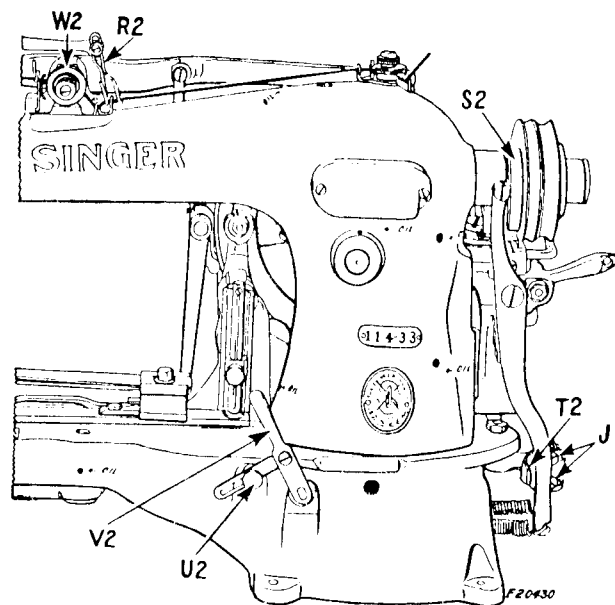


FIG. 27

pressed against the side of the driving pulley at the beginning of its last revolution, thereby relieving the strain on the stop motion mechanism when the stop cam interlocking rod drops into the notch in the stop cam on the driving pulley to stop the machine.

When the machines are being driven at their maximum speed of 1500 stitches per minute, more pressure on the driving pulley brake (S2) will be required than when the machines are operated at slower speeds. (See note on page 6). There should only be enough pressure on the brake to permit the stop cam interlocking rod to enter the notch in the stop cam and to allow sufficient overthrow of the driving pulley to release the brake. To increase the pressure on the brake, loosen the thumb screw (U2, Fig. 27) and push back the lever (V2) at the right of the bed until the required pressure is obtained. To decrease the pressure, pull the lever (V2) forward. When the required pressure on the brake is obtained, securely tighten the thumb screw (U2).

In case the brake is set up too tightly against the driving pulley, loosen the two screws (J, Fig. 27) which holds the block (T2) in position and move this block toward the rear of the machine, as required. To set the brake closer to the driving pulley, move the block toward the head end of the machine. When the brake is correctly set, securely tighten the screws (J) which hold the block (T2) in position.

### HINTS

1. If the machine breaks thread, it may be caused by incorrect timing of the thread loop finger (M2, Fig. 22, page 27). It is very important that this thread loop finger be accurately timed as instructed on pages 27 and 28, or the machine will not sew satisfactorily.

2. If the machine leaves too long an end of thread at the finish of the sewing, it may be due to the lower thread nipper (J3, Figs. 18 and 25, pages 23 and 30) holding the first end of the thread too tightly when the looper is taking the second loop. The thread nipper should be adjusted so that its pressure on the thread is sufficient to prevent the end of the thread from being drawn out of the goods, yet light enough to permit the looper to draw the thread from the nipper instead of through the tension discs (W2, Fig. 27, page 32) when the looper is taking the second loop. The end of the thread held by the nipper should not exceed  $\frac{1}{4}$  inch in length.

3. When sewing large buttons on heavy materials, it may be necessary to raise slightly the thread pull-off wire (R2, Fig. 27) so as to pull off more thread. Further instructions covering the adjustment of the thread pull-off wire (R2) are given on page 25.