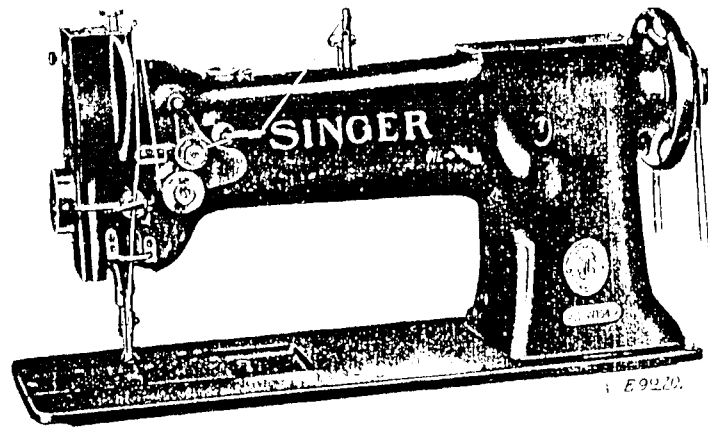


**SINGER**  
**111W104**

2232w

INSTRUCTIONS  
FOR USING AND ADJUSTING  
SINGER SEWING MACHINE



111w104

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THE SINGER MANUFACTURING CO.

To all whom it may concern:

The placing or renewal of the name "Singer" (Reg. U. S. Pat. Off.) or any of the trade marks of The Singer Manufacturing Company 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.

#### Purchasing of Parts and Needles

Supplies of parts and needles for Singer machines can be purchased at any Singer Shop for the Manufacturing Trade or ordered by mail. If orders are sent by mail, money or a post office order covering their value, including postage, should be enclosed and the order will then be promptly filled and forwarded by mail or express.

#### DESCRIPTION

Machine 111w104 is fitted with a compound feed and alternating pressers, has vibrating presser bar mechanism and pressure spring to insure positive feed at high speed, which especially adapt it for stitching canvas and leather gloves, upholstery, auto trimming, imitation leather goods, awnings, etc. It has one needle and a belt driven rotary sewing hook and makes the lock stitch.

#### Speed

Maximum speed recommended for Machine 111w104 — up to 3000 stitches per minute, depending on the thickness and kind of material to be sewn. The machine should be run slower than the maximum speed until the parts which are in movable contact have become glazed by their action upon each other. When the machine is in operation, the balance wheel should always turn over toward the operator.

#### Needles

Needles for Machine 111w104 are of Class and Variety 135x16 or 135x17. 135x16 are made in sizes 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 and 24. 135x17 are made in sizes 12, 14, 16, 18, 20, 22 and 24.

The size of the needle to be used should be determined by the size of the thread which must pass freely through the eye of the needle. If rough or uneven thread is used, or if it passes with difficulty through the eye of the needle, the successful use of the machine will be interfered with.

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. 14, 135x16 Needles."

The best results will be obtained in using the needles furnished by the Singer Sewing Machine Company.

### Thread

Use left twist thread for the needle. Either left or right twist thread may be used for the bobbin.

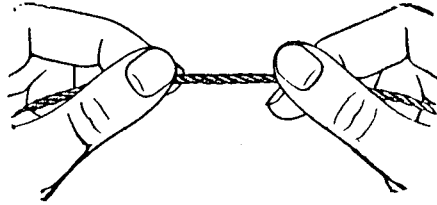


Fig. 2. How to Determine the Twist

Hold the thread as shown above. Turn the thread over toward you between the thumb and forefinger of the right hand; if left twist, the strands will wind tighter; if right twist, the strands will unwind.

### The Relative Sizes of Needles and Thread

The following sizes of needles and thread are recommended:

Sizes of Needles	Cotton	Silk
12	70, 80	OO, O
14	60, 70	O, A
16	40 to 60	A, B
18	30 to 40	B, C
20	24, 30	D, E

### To Set the Needle

Turn the balance wheel over toward you until the needle bar moves up to its highest point; loosen the set screw in the needle bar and put the needle up into the bar as far as it will go, with its long groove toward the left, the eye of the needle being directly in line with the machine bed, then tighten the set screw.

### To Remove the Bobbin

Draw out the slide plate in the bed of the machine. Insert the finger nail of the forefinger under the latch (C, Fig. 3), raise the latch and lift out the bobbin.

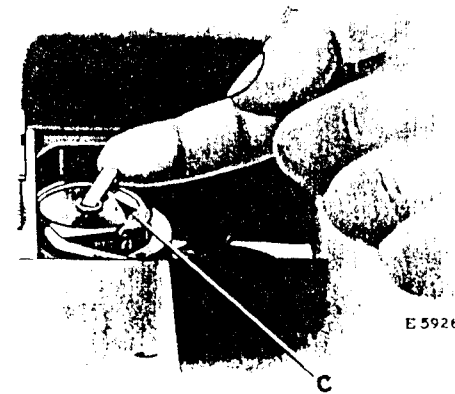


Fig. 3. Removing the Bobbin

### To Wind the Bobbin (See Fig. 4)

Fasten the bobbin winder to the table with its driving pulley in front of the machine belt, so that the pulley will drop away from the belt when sufficient thread has been wound upon the bobbin.

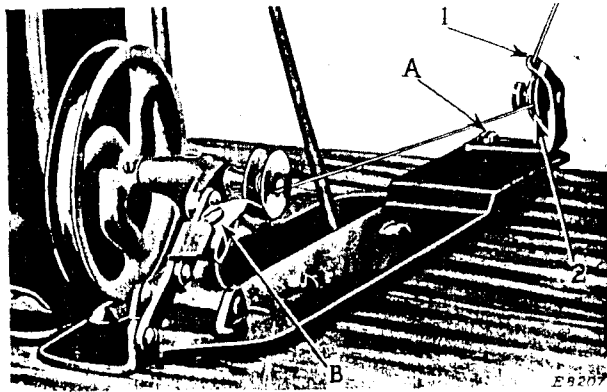


Fig. 4. Winding the Bobbin

Place the bobbin on the bobbin winder spindle and push it on as far as it will go.

Pass the thread down through the thread guide (1) in the tension bracket, around the back and between the tension discs (2). Then wind the end of the thread around the bobbin a few times, push the bobbin winder pulley over against the machine belt and start the machine.

When sufficient thread has been wound upon the bobbin, the bobbin winder will stop automatically.

If the thread does not wind evenly on the bobbin, loosen the screw (A) in the tension bracket and move the bracket to the right or left as may be required, then tighten the screw.

The amount of thread wound on the bobbin is regulated by the screw (B). To wind more thread on the bobbin, turn the screw (B) inwardly. To wind less thread on the bobbin, turn this screw outwardly.

Bobbins can be wound while the machine is stitching.

### To Replace the Bobbin and Thread the Bobbin Case

Hold the bobbin between the thumb and forefinger of the right hand, the thread drawing on the bottom from left to right

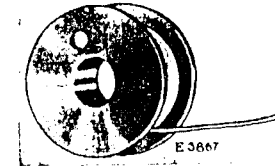


Fig. 5. Direction of Thread on Bobbin

as shown in Fig. 5, and place it on the centre stud of the bobbin case, then push down the latch (C, Fig. 6). Draw the thread into the slot (1, Fig. 6) and under the back of the projection (2, Fig. 6), leaving a loose end of thread about two inches long above the slide. When closing the slide plate, leave just enough space for the thread to pass through.

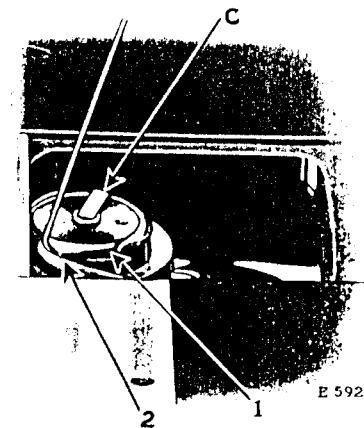


Fig. 6. Bobbin Case Threaded

## Upper Threading

(See Fig. 7)

Pass the thread from the unwinder from back to front through the lower hole (1) in the pin on top of the machine and from right

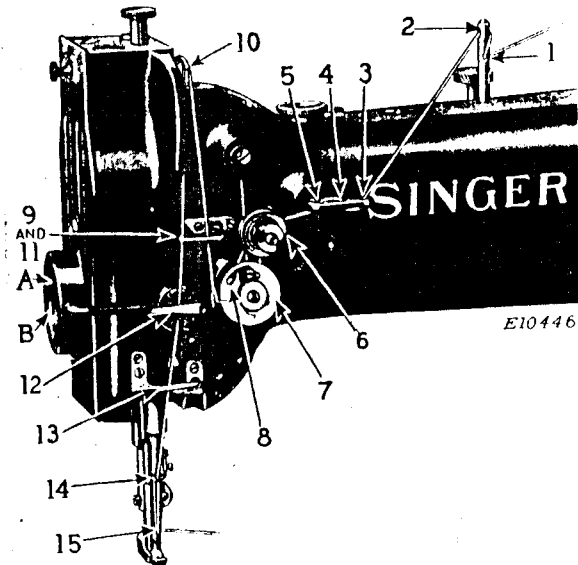


Fig. 7. Upper Threading

to left through the upper hole (2) in the pin, down through the hole (3), up through the hole (4) and down through the hole (5) in the thread guide at the front of the machine, over from right to left between the tension discs (6), down, under from right to left around the thread controller (7), up into the fork (8) in the thread controller disc against the pressure of the wire controller spring, up through the thread guide (9), from right to left through the hole (10) in the thread take-up lever, down through the thread guide (11), between the felt pad and felt pad retainer finger (12) and through the thread guide (13), through the thread guide (14) at the bottom of the needle bar and from left to right through the eye of the needle (15).

## To Prepare for Sewing

With the left hand hold the end of the needle thread, leaving it slack from the hand to the needle. Turn the balance wheel over toward you until the needle moves down and up again to its highest point, thus catching the bobbin thread; draw up the needle thread and the bobbin thread will come up with it through the hole in the feed dog. Lay the threads back under the presser feet and close the slide.

## To Commence Sewing

Place the material beneath the presser foot, lower the presser feet and commence to sew, turning the balance wheel over toward you.

## To Remove the Work

Have the thread take-up lever at the highest point, raise the presser feet, draw the work back and cut the threads close to the goods. Lay the ends of the threads back under the presser feet.

## Tensions

The needle and bobbin threads should be locked in the centre of the thickness of the material, thus:



Fig. 8. Perfect Stitch

If the tension on the needle thread is too tight, or if that on the bobbin thread is too loose, the needle thread will lie straight along the upper surface of the material, thus:



Fig. 9. Tight Needle Thread Tension

If the tension on the bobbin thread is too tight, or if that on the needle thread is too loose, the bobbin thread will lie straight along the under side of the material, thus:



Fig. 10. Loose Needle Thread Tension

### To Regulate the Tensions

The tension on the needle thread is regulated by the thumb nut (R, Fig. 16) at the front of the tension discs on the front of the machine. To increase the tension, turn this thumb nut over to the right. To decrease the tension, turn this thumb nut over to the left.

The tension on the bobbin thread is regulated by means of the screw nearest the centre of the tension spring on the outside of the bobbin case. To increase the tension, turn this screw over to the right. To decrease the tension, turn this screw over to the left.

### To Regulate the Length of Stitch

The length of stitch is regulated by the thumb screw (A, Fig. 11) at the right of the balance wheel.

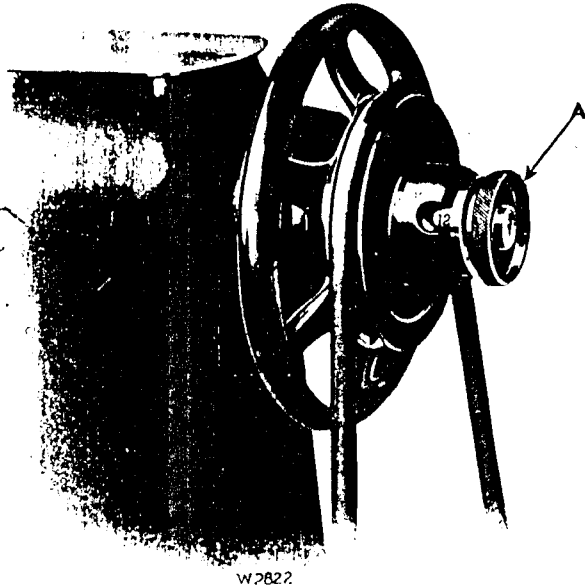


Fig. 11. Stitch Regulator

There is a notch in the hub of the balance wheel, as shown in Fig. 11, and the number appearing in the notch shows the number of stitches to the inch that the machine is ready to make.

To lengthen the stitch, turn the thumb screw (A) over toward you. To shorten the stitch, turn this thumb screw over from you.

### To Regulate the Pressure on Material

To increase the pressure, turn the thumb screw (E, Fig. 14) at the back of the machine. The pressure may then be changed by turning the stitch regulator (DD) for shorter stitches, but operators cannot make a longer stitch than that limited by the above adjustment.

To change the relative lift of the presser foot, loosen the screw (G, Fig. 14) at the back of the machine and move the presser bar upwardly or downwardly as required. Then securely tighten the screw (G).

### To Time the Sewing Hook

Set the feed regulating spindle head to indicate eight to the inch.

Remove the bushing; lift the belt up through the arm cap hole turn it as far as possible and draw it out through the space normally occupied by the bushing.

Owing to the fact that the sewing hook is timed to the

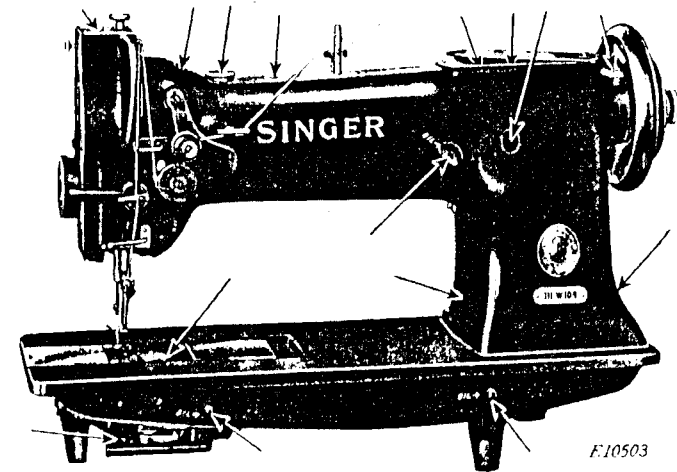


Fig. 12. Front of Machine Showing Oiling Points

Turn the machine back on its hinges and apply oil at the places designated by arrows as shown in Fig. 15, and all other

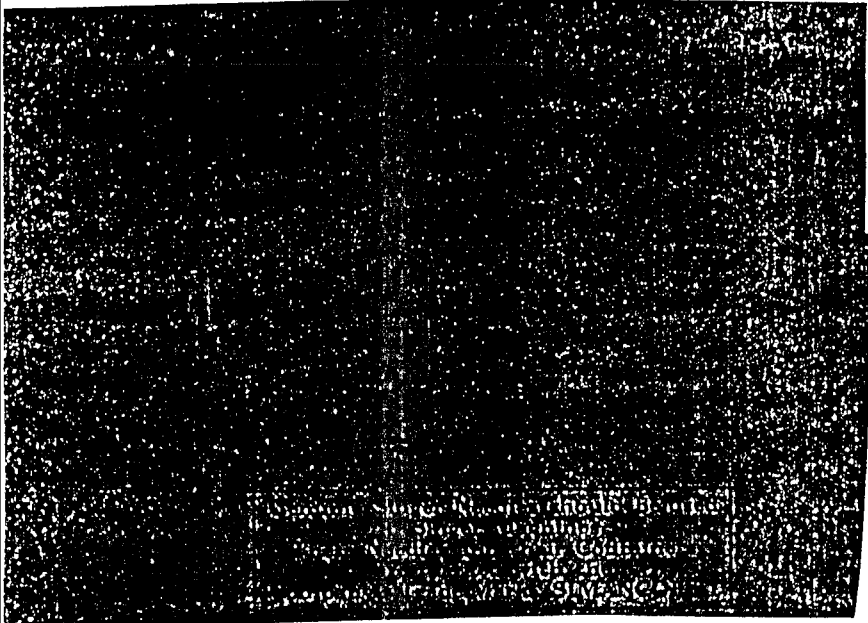


Fig. 13  
End View of Machine Showing Oiling Points

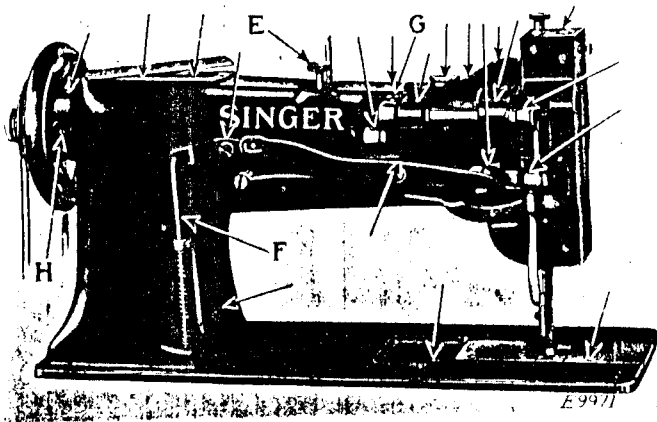


Fig. 14. Rear View of Machine Showing Oiling Points and Adjustments

places where there are parts in movable contact, then bring the machine forward into place.

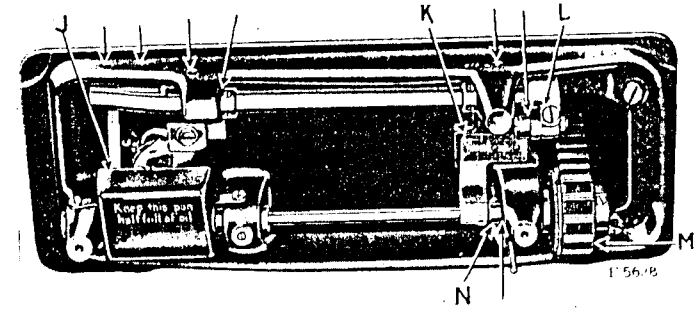


Fig. 15. Base of Machine, Showing Oiling Points

Oil the bobbin case bearing in the sewing hook race each time a bobbin is replaced.

When the machine is received from the factory, half fill the oil pan (J, Fig. 15) with Singer Manufacturing Sewing Machine Oil. This oil should be changed at least once each week to ensure proper lubrication. Oil should also be applied at the top of the hook saddle from whence it will drop into the oil pan to lubricate the gears and shaft.

#### To Adjust the Thread Lubricator

When replenishing the lubricant supply, fill the reservoir (A, Fig. 7) to about  $\frac{1}{8}$  inch below the filler hole (B, Fig. 7).

The amount of lubrication of the thread is controlled by raising or lowering the felt pad holder (12, Fig. 7) above or below the level of the lubricant. For more lubricant, lower the felt pad holder. For less lubricant, raise the felt pad holder.

To ensure satisfactory results, Singer Thread Lubricant should be used in the thread lubricator which is attached to the face plate.



# INSTRUCTIONS FOR ADJUSTERS AND MACHINISTS

## Thread Controller

The function of the thread controller spring is to hold back the slack of the needle thread until the eye of the needle nearly reaches the goods in its descent, as without this controlling action of the spring, the slack thread or silk (more especially silk) will sometimes be penetrated by the point of the needle as the needle is descending.

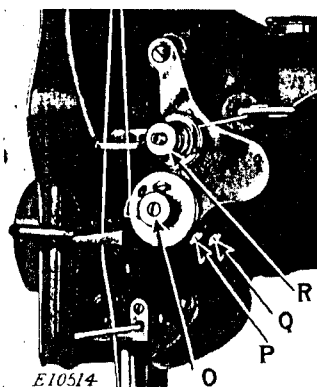


Fig. 16. Adjustment of Thread Controller

For more controller action on the thread, loosen the stop screw (P, Fig. 16) at the right of the tension and set the stop lower, and for less action set the stop higher.

To strengthen the action of the controller spring on the thread, loosen the tension stud screw (Q, Fig. 16) at the right of the stop screw and turn the tension stud (O, Fig. 16) slightly to the left with a screwdriver, or to lighten its action turn to the right and retighten the tension stud screw.

## To Set the Needle Bar

See that the needle is up in the bar as far as it will go. There are two lines across the needle bar about two inches above the lower end. When the needle bar is at its lowest position, the upper mark should be just visible at the end of the needle bar frame.

In case the needle bar is not correctly set, loosen the needle bar connecting stud pinch screw (E, Fig. 13) and place the needle bar in correct position as directed above, then retighten the screw (E).

**To Set a Needle Bar Which Has no Mark.** Set the stitch regulator to indicate 8 stitches to the inch, then set the needle bar so that when it rises  $\frac{3}{8}$  inch from its lowest position, the point of the sewing hook will be at the centre of the needle and about  $\frac{1}{8}$  inch above the eye.

## Relative Positions of Vibrating Presser Bar and Lifting Presser Bar

The distance between the vibrating presser bar and lifting presser bar, after turning the feed regulating spindle head so that there is no feed movement of the needle bar, should be  $\frac{3}{8}$  inch, as shown in Fig. 13.

If the distance between the vibrating presser bar and the lifting presser bar is more or less than  $\frac{3}{8}$  inch, insert a screwdriver in the hole (F, Fig. 14) at the rear of the machine and loosen the screw therein. While this screw is loose, the needle bar frame can be moved forward or backward, as may be required, until the distance between the vibrating presser bar and lifting presser bar is  $\frac{3}{8}$  inch. A piece of metal  $\frac{3}{8}$  inch wide may be used to determine the correct distance. When making this adjustment be sure to see that the feed regulating spindle head is set so that there is no feeding movement of the needle bar. When the adjustment has been made, securely tighten the screw at F.

### To Adjust the Relative Height of Lift of the Vibrating and Lifting Pressers

The amount of lift of the vibrating and lifting presser feet should be regulated according to the thickness of the material being sewn. The feet should lift just high enough to clear the material. As a rule, the vibrating and lifting pressers should lift an equal height, but some grades of work may require that they lift an unequal height. To change the relative lift of the presser feet, loosen the screw (G, Fig. 14) at the back of the machine and move the presser bar upwardly or downwardly as required, then securely tighten the screw (G).

### To Time the Sewing Hook

Set the feed regulating spindle head to indicate eight stitches to the inch.

Remove the throat plate and turn the balance wheel over toward you until the lower mark across the needle bar is just visible at the end of the needle bar frame on the upward stroke of the needle bar. If the needle bar and sewing hook are correctly timed, the point of the hook will be at the centre of the needle and about  $\frac{1}{16}$  inch above the eye.

In case the sewing hook is not correctly timed, turn the balance wheel over toward you until the needle bar has descended to its lowest point and has risen until the lower timing mark across the needle bar is just visible at the end of the needle bar frame.

Loosen the two screws in the lower belt pulley (M, Fig. 15) and turn the sewing hook until the point of the hook is at the centre of the needle, after which securely tighten the two screws in the belt pulley, leaving just enough play in the shaft for lubricating purposes.

### To Set the Sewing Hook to or from the Needle

To prevent the point of the hook from dividing the strands of the thread, it should run as close to the needle (within the scarf) as possible.

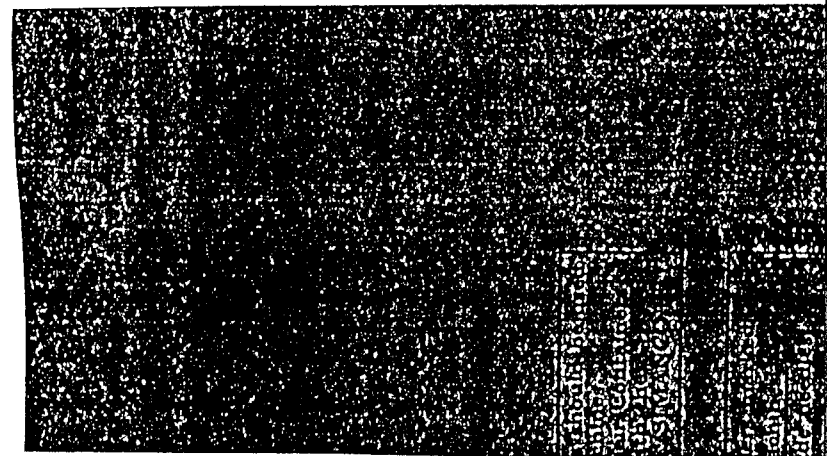


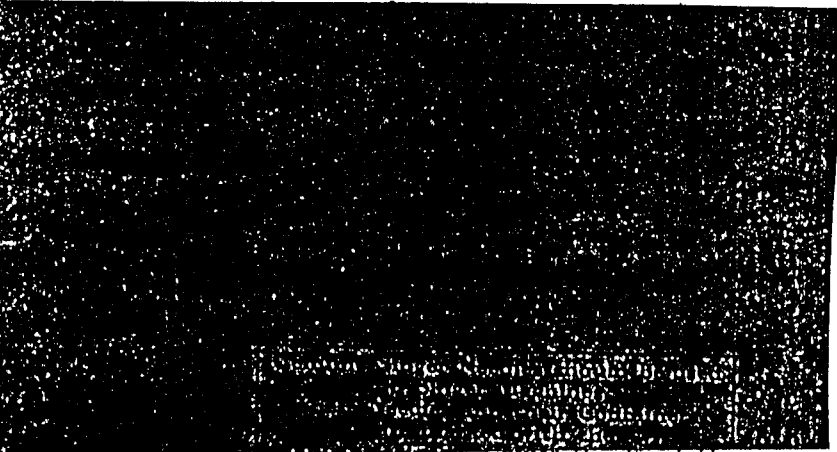
Fig. 17. Adjustment of Hook Saddle

Turn the balance wheel over toward you until the point of the sewing hook is at the centre of the needle. Loosen the two screws (R, Fig. 17) underneath the bed of the machine and move the hook saddle to the right or left, as may be required, until the point of the hook is as close to the needle as possible without striking it, then securely tighten the two screws (R).

The needle guard washer (AA, Fig. 18) which is attached to the bottom of the sewing hook, should be sprung until it prevents the needle from striking the hook in case the needle is deflected towards the hook.

### To Remove the Sewing Hook from the Machine

Remove the throat plate, feed dog and the bobbin case opening lever. Then take out the two screws from the hook shaft gear (S, Fig. 17) and lift out the sewing hook.



To Raise or Lower the Feed Dog

Usually when the feed dog is at its highest position, it should show a full tooth above the throat plate.

Remove the throat plate; clean the lint and dust from between the feed points and replace the throat plate; tip the machine back and turn the balance wheel towards you until the feed dog is at its highest position; loosen screw (T, Fig. 17) in the feed lifting cam fork on the feed bar and raise or lower the feed dog, as may be required, and retighten the screw (T).

When raising or lowering the feed dog, be careful that its underside does not drop low enough to strike the sewing hook.

The feed dog should be set so that when the needle is down it should be slightly in front of the centre (toward the operator) of the needle hole. In case the needle does not enter the hole in the feed dog correctly, loosen the pinch screw (L, Fig. 15) and adjust the feed dog as required, then securely tighten the pinch screw (L).

### Adjustment of Feed Regulating Spindle Head

The figures on the feed regulating spindle head (DD, Fig. 19), showing through the notch in the balance wheel, indicate the

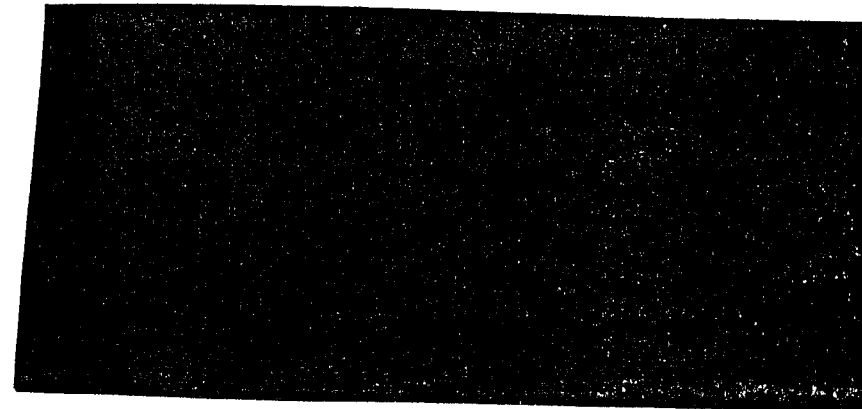


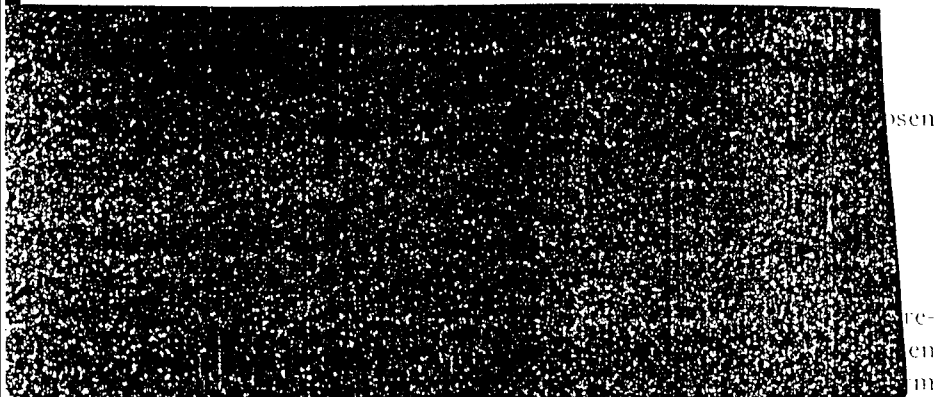
Fig. 19. "X-Ray" View of Feed Driving Eccentric Regulating Bracket and Shaft, Showing the Feed Regulating Spindle and Adjusting Screw (CC) Which Comes in Contact with the Cone of the Spindle to Gauge the Length of Stitch

number of stitches to the inch which should be made. If more or less stitches are made, adjust as follows: Remove screw (BB, Fig. 19), set the indicator at 8 and the feed dog at its highest point, a full tooth showing above the throat plate, then adjust screw (CC, Fig. 19) until eight stitches to the inch is the result and replace check screw (BB) firmly.

By making this adjustment with the stitch indicator set at 8 stitches, the full range of the stitch regulator is automatically taken care of so that the number appearing in the notch in the balance wheel will always indicate the correct number of stitches to the inch that the machine is ready to make.

**To Set the Feed Regulator so that a Stitch Longer Than the One Desired Cannot be Made.** Turn the spindle head (DD, Fig. 19) as far as possible in the direction indicated by the arrow in Fig. 19; remove check screw (BB) and adjust screw

(CC) until the machine makes the desired number of stitches to the inch, then turn screw (BB) down tightly on screw (CC) as a check. The stitches may then be changed by turning the stitch regulator (DD) for shorter stitches, but operators cannot make a longer stitch than that limited by the above adjustment.



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and remove the bushing; hit the belt up through the arm cap hole as far as possible and draw it out through the space normally occupied by the bushing.

Owing to the fact that the sewing hook makes two revolutions to one revolution of the arm shaft, and that the feed lifting eccentric is on the hook shaft, it is possible to have the sewing hook correctly timed without having the feed correctly timed. To overcome this, the plate (K, Fig. 15) is attached to the underside of the bed of the machine. This plate is marked with an arrow at its lower end and directly alongside of the plate is the collar (N, Fig. 15) mounted on the hook shaft, which is also marked with an arrow. When replacing the belt, replace the arm shaft bushing and securely fasten it in position by the screw (H, Fig. 14) at the back of the machine; replace the feed regulating spindle head and the balance wheel, and place the belt on the upper pulley, and then turn the balance wheel over toward you until the thread take-up lever is at its highest point. Then turn the hook shaft with the fingers until the two arrows, one on plate "K" and the other on collar "N", are directly in line. Now, without disturbing either the arm shaft or the hook shaft, slip the belt over the lower pulley (M, Fig. 15). The feed will then be correctly timed with the needle bar.

