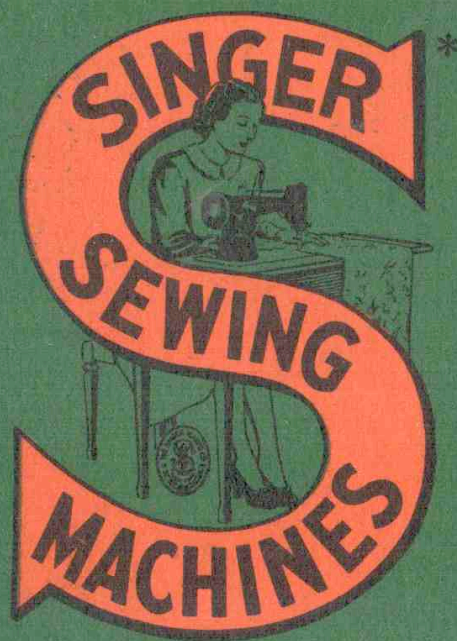


Form 20109  
Rev. (351)

INSTRUCTIONS  
FOR USING AND ADJUSTING  
**SINGER**  
SEWING MACHINES  
31-19 AND 31-47



THE SINGER MANUFACTURING COMPANY

Printed in U. S. A.



# USE ONLY **SINGER**\* OILS and LUBRICANTS

*They insure freedom from lubricating trouble and  
give longer life to sewing equipment*

---

*The following are the correct lubricants for this machine:*

**TYPE B** — MANUFACTURING MACHINE OIL, HEAVY  
GRADE

*When a stainless oil is desired, use:*

**TYPE D** — MANUFACTURING MACHINE OIL, STAIN-  
LESS, HEAVY GRADE

---

## OTHER **SINGER** LUBRICANTS

**TYPE E** — STAINLESS THREAD LUBRICANT

For lubricating the needle thread of sewing machines for stitching fabrics or leather where a stainless thread lubricant is required.

**TYPE F** — MOTOR OIL

For oil lubricated motors and plain bearings in power tables and transmitters.

**NOTE:** All of the above oils are available in 1 quart, 1 gallon and 5 gallon cans or in 55 gallon drums.

### GEAR LUBRICANT

This specially prepared grease is recommended for gear lubrication on manufacturing sewing machines.

### BALL BEARING LUBRICANT

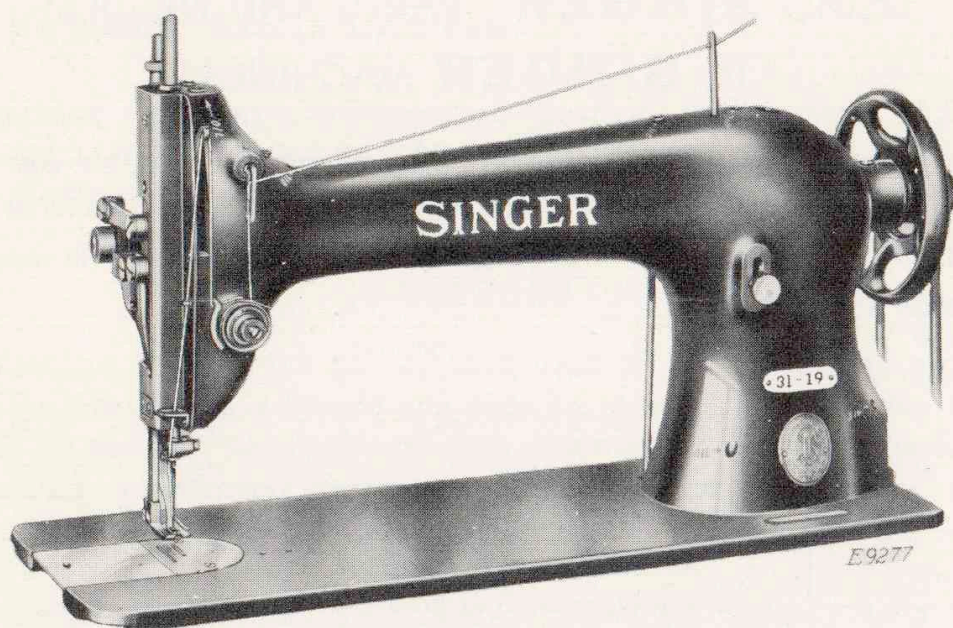
This pure grease is specially designed for the lubrication of ball bearings and ball thrust bearings of motors and electric transmitters, ball bearing hangers of power tables, etc. **Furnished in 1 lb. and 4 lb. tins.**

---



20109

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



Machine 31-19

31-19 and 31-47

---

\* A TRADE MARK OF  
THE SINGER MANUFACTURING COMPANY

## TO ALL WHOM IT MAY CONCERN:

The improper placing or renewal of the Trade Mark "SINGER" or any other of the Trade Marks of The Singer Manufacturing Company (all of which are duly Registered Trade Marks) 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.

---

### THE IMPORTANCE OF USING **SINGER**\* PARTS AND NEEDLES IN **SINGER** MACHINES

The successful operation of SINGER machines can only be assured if SINGER parts and needles are used. Supplies are available at all SINGER Shops for the Manufacturing Trade, and mail orders will receive prompt attention.

SINGER Needles should be used  
in SINGER Machines.  
These Needles and their Containers  
are marked with the  
Company's Trade Mark "SIMANCO.\*" 1

Needles in Containers marked  
"FOR SINGER MACHINES"  
are NOT **SINGER** made needles. 2



## DESCRIPTION

Machine 31-19 has one needle and an oscillating shuttle and makes the lock stitch. It is adapted for sewing enameled or plain fabrics and light weight leather, and is successfully used in the manufacture of shoes, mattresses, blankets, awnings, school bags, braces, articles made of enameled cloth, etc.

The machine is especially designed for stitching fabrics of varying thicknesses, as it is fitted with alternating pressers which consist of a vibrating and a lifting presser working in combination. In operation, the pressers alternately press down on the material, the vibrating presser working in unison with the feed, so that the feeding of fabrics of uneven thicknesses is perfectly accomplished, with no slipping of the two or more plies of material which are being sewn. The clearance under the presser foot is  $11/32$  inch.

Machine 31-47 has a presser foot clearance of  $3/8$  inch. Otherwise it is similar to Machine 31-19. This additional clearance permits it to sew medium and heavy clothing as well as leather and enameled cloth.

## NEEDLES

Needles for Machine 31-19, when used on the power table, are of Class and Variety 16 x 87 and are made in sizes 9, 11, 13, 14, 16, 18, 19, 21, 22 and 23; when used on foot power stand, needles are of Class and Variety 16 x 73 and are made in sizes 7, 8, 9, 10, 11, 13, 14, 16, 18, 19, 21, 22 and 23.

Needles for Machine 31-47 are of Class and Variety 16 x 113 and are made in sizes 9, 10, 11, 12, 14, 16, 17, 18, 19, 21, 22, 23 and 24.

The size of the needle to be used should be determined by the size of thread which must pass freely through the eye of the needle. Rough or uneven thread, or thread which passes with difficulty through the eye of the needle will interfere with the successful use of the machine.

Orders for needles must specify the QUANTITY required, the SIZE, and the CLASS and VARIETY numbers separated by the letter x.

The following is an example of an intelligible order:

"100 No. 19, 16 X 87 Needles."

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

## To Oil the Machine

To insure easy running and prevent unnecessary wear of the parts which are in movable contact, the machine requires oiling and when in continuous use, it should be oiled at least twice each day. Use "TYPE B" or "TYPE D" OIL, sold only by Singer Sewing Machine Company. For description of these oils, see inside front cover.

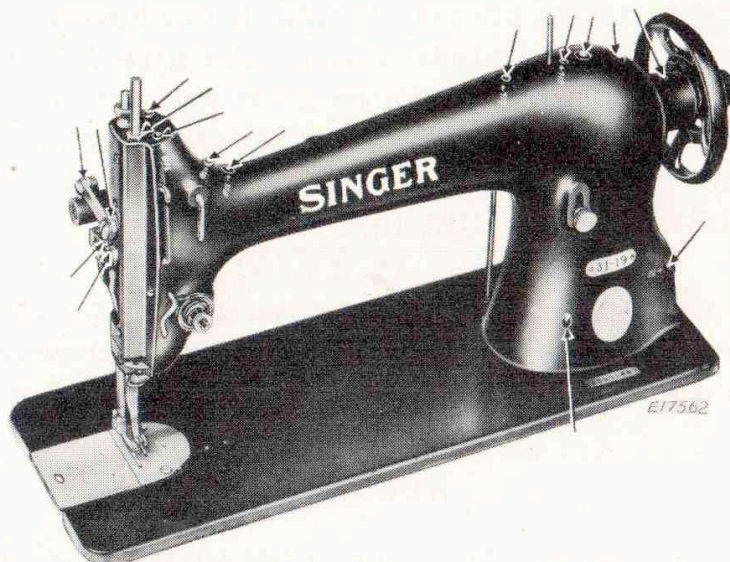


Fig. 2. Oiling Points at the Front of the Machine

Oil should be applied to all oil holes marked "Oil" and to all oiling places indicated by unlettered arrows in Figures 2, 3, 4 and 4A.

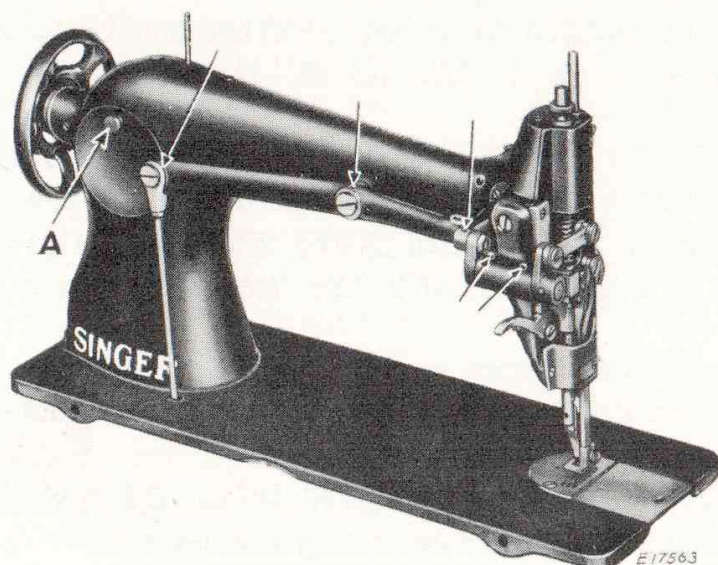


Fig. 3. Oiling Points at the Rear of the Machine



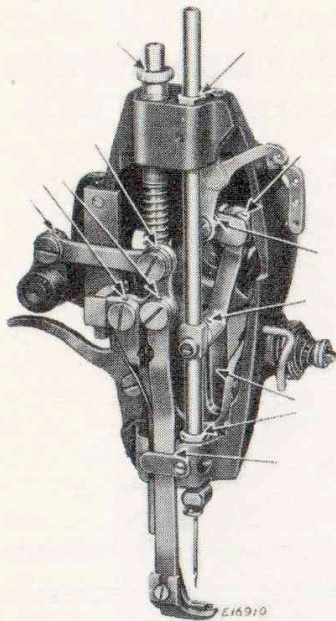


Fig. 4. Oiling Points at  
End of Machine.

Loosen the thumb screw (A, Fig. 3) in the round cover plate at the back of the machine, turn the cover plate up and oil the bearings which are thus exposed, then replace the cover.

Remove the face plate and oil all the oiling points shown in Fig. 4. Turn the machine back on its hinges and apply oil to all parts which are in movable contact, as shown in Fig. 4A.

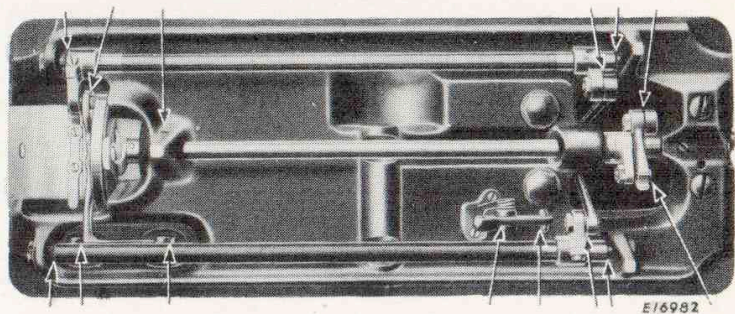


Fig. 4A. Oiling Points at Base of Machine

## To Insure Perfect Action of the Machine

The machine pulley must always turn over toward the operator. Do not run the machine with the presser feet resting on the feed, without material under the presser feet.

Do not run the machine when both bobbin case and needle are threaded, unless there is material under the presser feet.

Do not try to aid the machine by pulling the fabric, lest you bend the needle; the machine feeds the work without assistance.

Keep the slide over the bobbin case closed when the machine is in operation.

## Speed

The maximum speed recommended for these machines is 2000 stitches per minute. The machines should be run slower than the maximum speed at first, until the parts which are in movable contact have become glazed by their action upon each other.

## To Determine the Twist of the Thread

Left twist thread should be used in the needle. Either right or left twist thread can be used in the bobbin. To determine the twist,

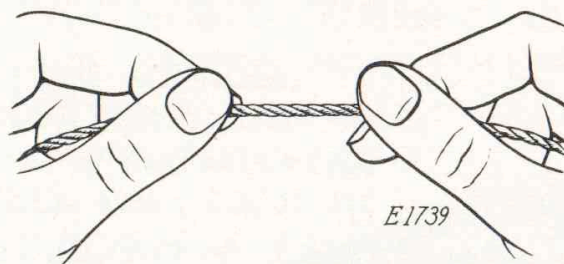


Fig. 5. Determining the Twist

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.

## To Remove the Bobbin

Turn the machine pulley over toward you until the needle moves up to its highest position. Draw out the slide in the bed of the machine, reach down with the thumb and forefinger of the left hand, open the

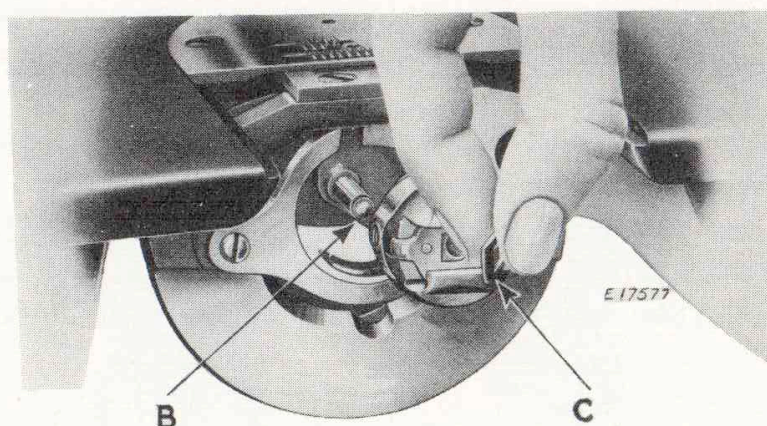


Fig. 6. Removing the Bobbin

bobbin case latch (C, Fig. 6) and lift out the bobbin case. While the latch remains open the bobbin is retained in the bobbin case. Release the latch. Turn the open end of the bobbin case downwardly and the bobbin will fall out.



## To Wind the Bobbin

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.

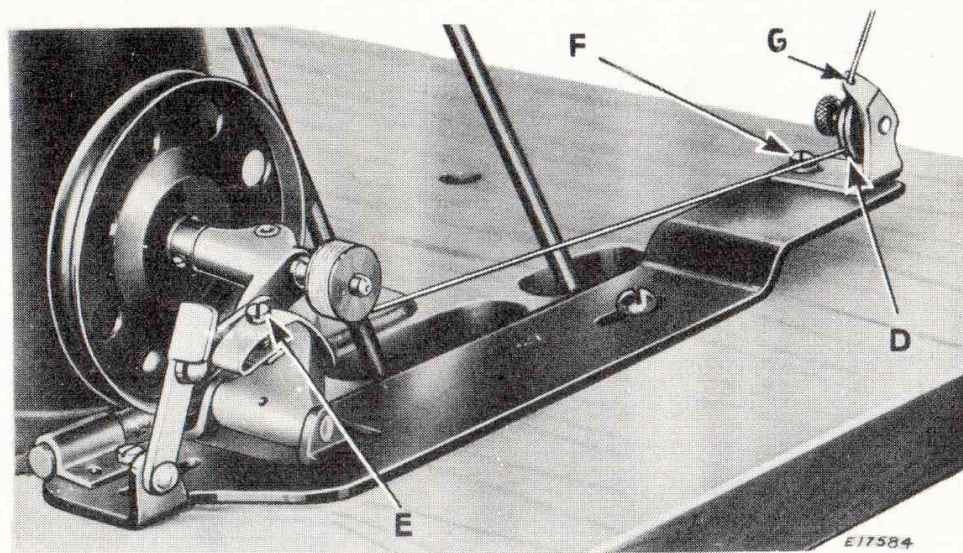


Fig. 7. Winding the Bobbin

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 (G) in the tension bracket, around the back and between the tension discs (D). 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 (F) in the tension bracket and move the bracket to the right or left, as may be required, then tighten screw.

The amount of thread wound upon the bobbin is regulated by the screw (E). To wind more thread on the bobbin, turn the screw (E) clockwise. To wind less thread on the bobbin, turn this screw counterclockwise.

Bobbins can be wound while the machine is stitching.



## To Thread the Bobbin Case

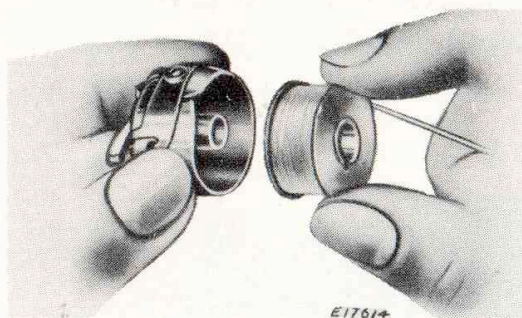


Fig. 8.

With the left hand, hold the bobbin case as shown in Fig. 8, the slot in the edge being near the top. Then place the bobbin into the bobbin case.

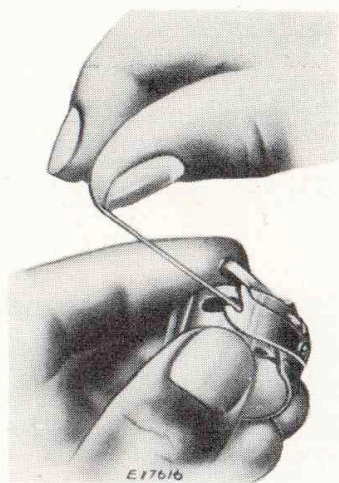


Fig. 10.

Hold the bobbin between the thumb and forefinger of the right hand, as shown in Fig. 8, the thread drawing on the top from the left toward the right.

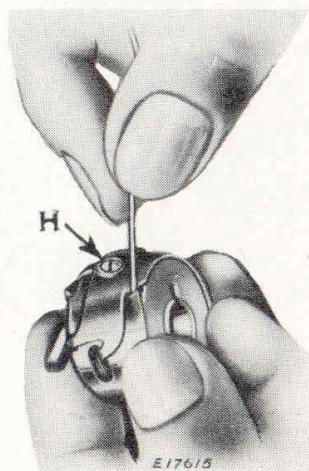


Fig. 9.

Then pull the thread into the slot in the edge of the bobbin case, as shown in Fig. 9; draw the thread under the tension spring and into the delivery eye at the end of the tension spring, as shown in Fig. 10.

## To Replace the Bobbin Case

After threading, take the bobbin case by the latch, holding it between the thumb and forefinger of the left hand. Place the bobbin case on the center stud (B, Fig. 6) of the shuttle body, with the position finger opposite the notch at the top of the shuttle race. Release the latch and press the bobbin case back until the latch catches the groove near the end of the stud. Allow about two inches of thread to hang free.



## To Set the Needle

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

## Upper Threading

Pass the thread from the unwinder (or from the spool) from right to left through the hole in the top of the spool pin (1, Fig. 11), through the three eyelets in the thread retainer (2), as shown, down between the tension discs (3), into the thread take-up spring (4), under the guide (5), through the eyelet in the take-up lever (6), down through eyelets (7 and 8) on the face plate, through the guide (9) on the needle bar, then from left to right through the eye (10) of the needle.

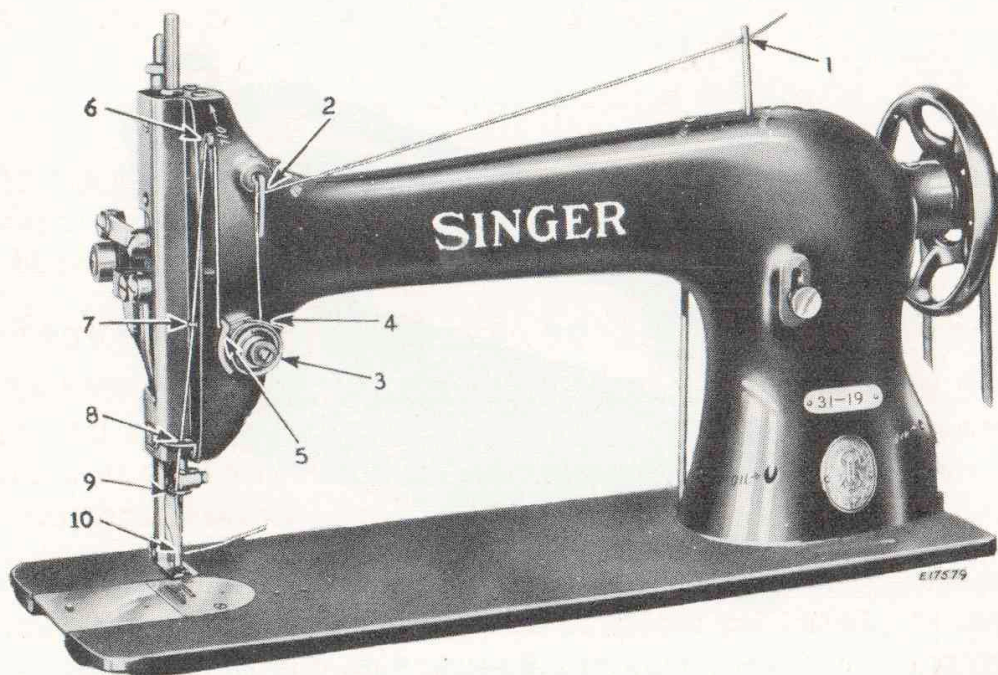


Fig. 11. Upper Threading

Draw about two inches of thread through the eye of the needle with which to commence sewing.



With the left hand hold the end of the needle thread, leaving it slack from the hand to the needle, turn the machine pulley over toward you until the needle moves down and up again to its highest position, thus catching the bobbin thread; draw up the needle thread and the bobbin thread will come up with it through the hole in the throat plate. Lay the threads back under the presser feet.

### To Commence Sewing

Place the material beneath the presser feet, lower the presser feet and commence to sew, turning the machine pulley over toward you.

### To Remove the Work

Let the thread take-up lever rest at its highest position, raise the presser feet and draw the work back and cut the threads close to the material.

### To Regulate the Pressure on the Material

The pressure on the material is regulated by the thumb screw (J, Fig. 12). To increase the pressure, turn this thumb screw over to the right. To decrease the pressure, turn this thumb screw over to the left.

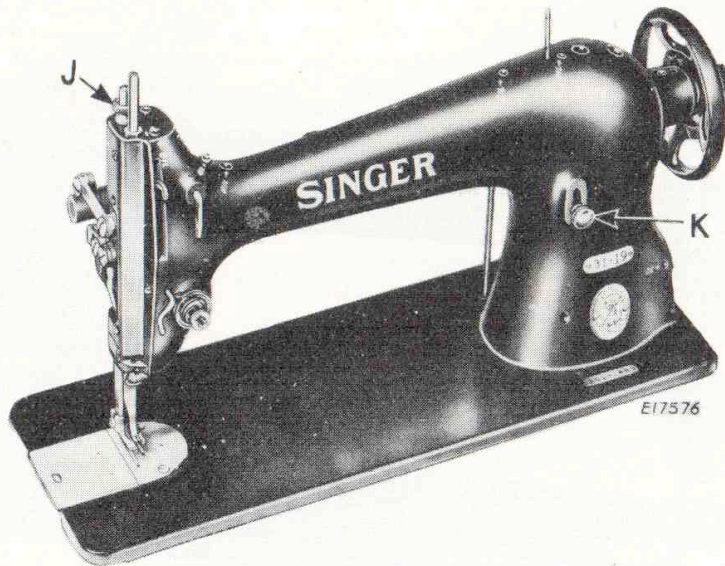


Fig. 12. Regulating Pressure on Material and Regulating Length of Stitch

### To Regulate the Length of the Stitch

The length of stitch is regulated by the thumb screw (K, Fig. 12) in the slot on the front of the upright part of the arm. To lengthen the stitch, loosen this thumb screw and move it downwardly. To shorten the stitch, loosen this thumb screw and move it upwardly. When the desired length of stitch has been obtained, tighten the thumb screw (K).



## Tensions

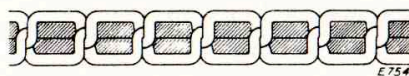


Fig. 13. Perfect Stitch

For ordinary stitching, the needle and bobbin threads should be locked in the center of the thickness of the material, as shown in Fig. 13.

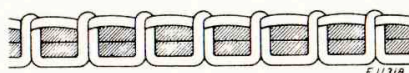


Fig. 14. Tight Needle Thread Tension

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, as shown in Fig. 14.

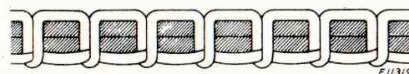


Fig. 15. Loose Needle Thread Tension

If the tension on the needle thread is too loose, or if that on the bobbin thread is too tight, the needle thread will lie straight along the under surface of the material, as shown in Fig. 15.

### To Regulate the Tension on the Bobbin Thread

The tension on the bobbin thread is regulated by the screw (H, Fig. 9) which holds the tension spring to the bobbin case. To increase the tension, turn this screw clockwise. To decrease the tension, turn this screw counterclockwise.

When once properly adjusted, it is seldom necessary to change the tension on the bobbin thread, as a correct stitch can usually be obtained by varying the tension on the needle thread.

### To Regulate the Tension on the Needle Thread

The tension on the needle thread should be regulated only when the presser feet are down. After lowering the presser feet, turn the thumb nut (V, Fig. 19) at the front of the tension discs, clockwise to increase the tension, or counterclockwise to decrease the tension on the needle thread.



1. The first part of the paper discusses the importance of the study and the objectives of the research. It also provides a brief overview of the literature review and the methodology used in the study.

2. The second part of the paper discusses the results of the study and the findings. It also provides a detailed analysis of the data and the conclusions drawn from the study.

3. The third part of the paper discusses the implications of the study and the recommendations for future research. It also provides a summary of the key findings and the overall conclusions of the study.

4. The fourth part of the paper discusses the limitations of the study and the areas for further research. It also provides a summary of the key findings and the overall conclusions of the study.

5. The fifth part of the paper discusses the conclusions of the study and the overall findings. It also provides a summary of the key findings and the overall conclusions of the study.

6. The sixth part of the paper discusses the conclusions of the study and the overall findings. It also provides a summary of the key findings and the overall conclusions of the study.



## INSTRUCTIONS FOR ADJUSTERS AND MECHANICS

### To Time the Needle with the Shuttle

See that the needle is pushed up into the needle bar as far as it will go.

Turn the machine pulley over toward you until the point of the shuttle reaches the center of the needle on the upward stroke of the needle bar.

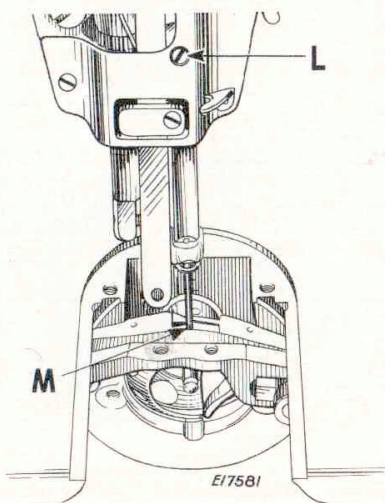


Fig. 16. Timing the Needle

When the shuttle is in this position, the needle bar should have risen  $1/10$  inch and the top of the eye of the needle should be  $1/16$  inch below the point of the shuttle, as shown at (M, Fig. 16).

If the eye of the needle is not the correct distance below the point of the shuttle, loosen the screw (L, Fig. 16) in the needle bar connecting stud and move the needle bar up or down as may be required, then securely tighten screw (L).



## To Remove and Replace the Shuttle Race

Turn the balance wheel over toward you until the needle bar reaches its highest point.

Turn the machine pulley over toward you until the needle bar reaches its highest point.

When replacing the shuttle race, have the needle bar at its highest point and turn the shuttle in the race so that it correctly engages the shuttle driver, then securely fasten the shuttle race in position by means of the two screws (N and O).

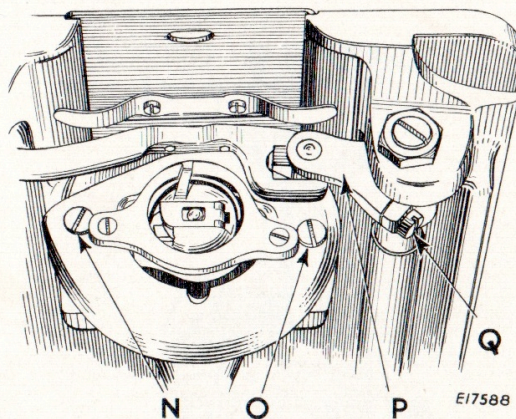


Fig. 17. Adjusting the Feed Dog

## To Raise or Lower the Feed Dog

The feed lifting rock shaft crank (P, Fig. 17) should be set so that when it raises the feed bar to its highest point, slightly less than the full depth of the teeth of the feed dog project through the slots in the throat plate. To raise or lower the feed dog, loosen the clamping screw (Q, Fig. 17) and move the feed lifting rock shaft (P) until the feed dog is set at the required height, then securely tighten the clamping screw (Q).



## To Time the Feeding Mechanism

The feeding mechanism should be timed so that the feed dog finishes its feeding movement (away from the operator) when the thread take-up lever (6, Fig. 11) is at its highest point. The feed dog should always finish its feeding movement before the needle reaches the goods on its downward stroke.

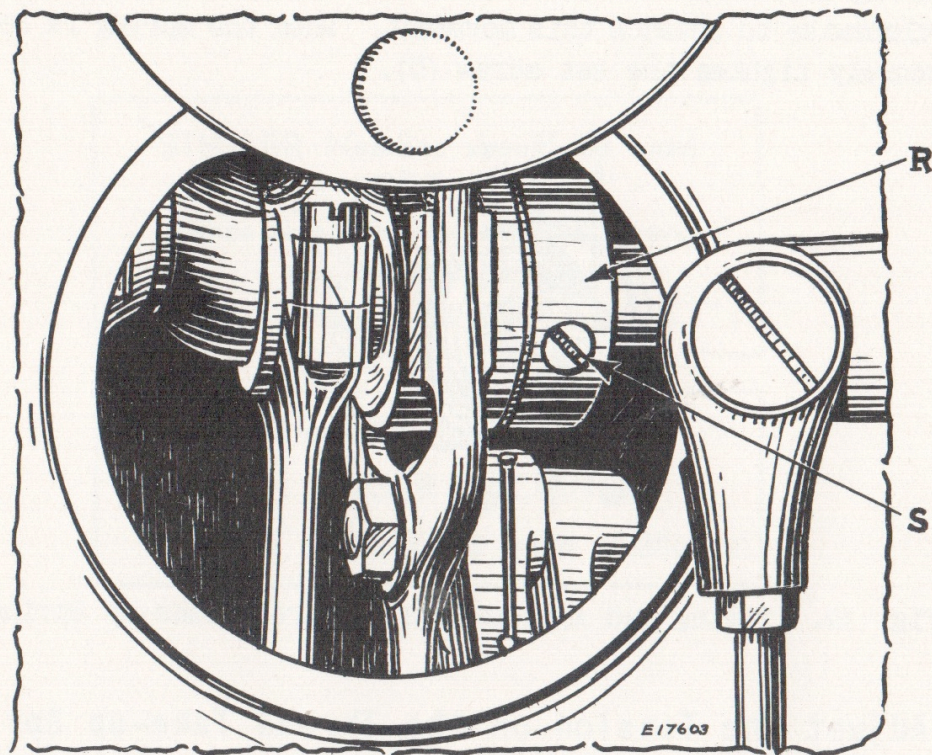


Fig. 18. Showing the Timing of the Feeding Mechanism

When it is necessary to time the feeding mechanism, move the stitch regulator (K, Fig. 12) down to its lowest point for the longest stitch and turn up the round cover plate at the back of the machine. Loosen the feed eccentric screw (S, Fig. 18) and turn the feed eccentric (R, Fig. 18) until the feed dog is correctly timed as described above, then securely tighten the set screw (S).



## To Time the Thread Take-up Spring

The thread take-up spring (T, Fig. 19) should be set so that when the eye of the needle reaches the material on the downward stroke of the needle bar, the spring will be through acting and will rest against the stop on the thread take-up spring regulator.

If the thread take-up spring is not correctly set, loosen the set screw (U, Fig. 19) in the arm of the machine, and turn the tension screw stud (W, Fig. 19) clockwise to retard the movement of the spring, or counterclockwise to advance this movement. When the spring is correctly set, securely tighten the set screw (U).

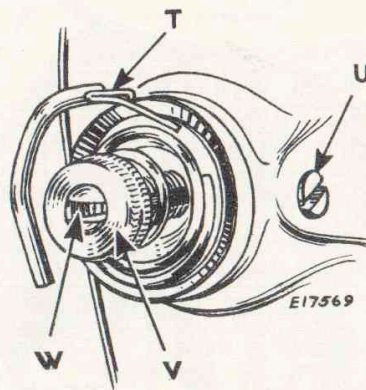


Fig. 19. Timing and Adjustments of Thread Take-up Spring

## To Adjust the Tension on the Thread Take-up Spring

The tension on the thread take-up spring should be just sufficient to take-up the slack of the needle thread until the eye of the needle reaches the material on its downward stroke.

To increase the tension on thread take-up spring (T), loosen the tension screw stud (W) and force the take-up spring from the recess in regulator, moving it clockwise between the regulator and the tension discs until the required tension is obtained, then securely tighten the tension screw stud (W) and force the spring back into its normal position in the regulator recess. To decrease the tension, force the spring counterclockwise between the regulator and the tension discs.

SINGER Needles should be used  
in SINGER Machines.  
These Needles and their Containers  
are marked with the  
Company's Trade Mark "SIMANCO.\*" 1

Needles in Containers marked  
"FOR SINGER MACHINES"  
are NOT **SINGER** made needles. 2





This Trade Mark is on the Arm of  
Every SINGER Sewing Machine