

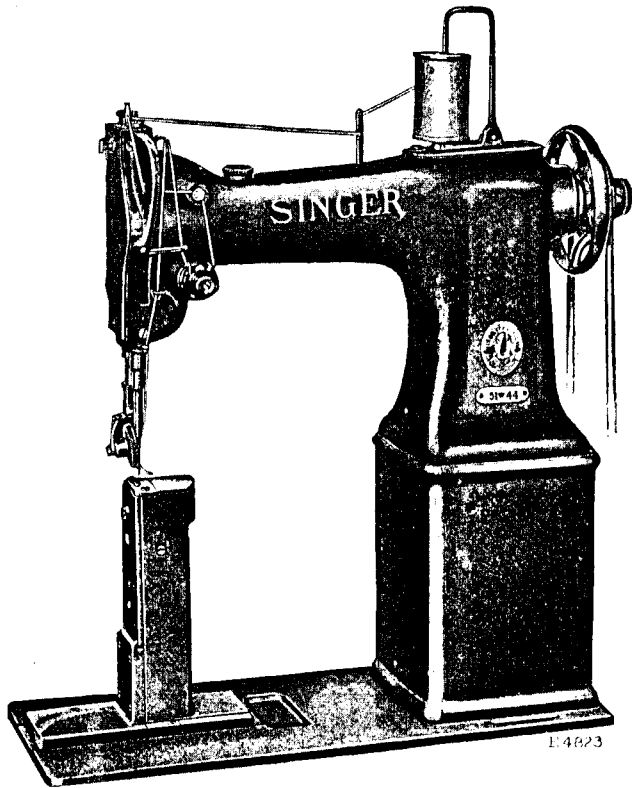
**SINGER**  
**51W44**

1896 w

# INSTRUCTIONS

FOR USING

# SINGER SEWING MACHINE



51w44

THE SINGER MANUFACTURING CO.

### **Purchasing of Parts and Needles**

Supplies for parts and needles for Singer machines can be purchased at any Singer shop 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 51 w 44 has a post bed and makes the lock stitch, and is intended for general stitching in the manufacture of shoes, including vamping, stitching on back stays, stitching in gores, etc. It has one needle and a rotary hook and a mechanical opener.

#### **Speed**

The maximum speed recommended for Machine 51 w 44 is 3000 stitches per minute. The machine 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. When the machine is in operation, the balance wheel should always turn over toward the operator.

#### **Needles**

Needles for Machine 51 w 44 are of Class and Variety 128 x 4 (narrow wedge point) and are made in sizes 11, 12 and 13.

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 an x.

The following is an example of an intelligible order:

“100 No. 12, 128 x 4 Needles.”

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

### To Oil the Machine

To ensure easy running and prevent unnecessary wear of the machine, the parts which are in movable contact require oiling, and when the machine is in continuous use, it should be oiled at least twice a day.

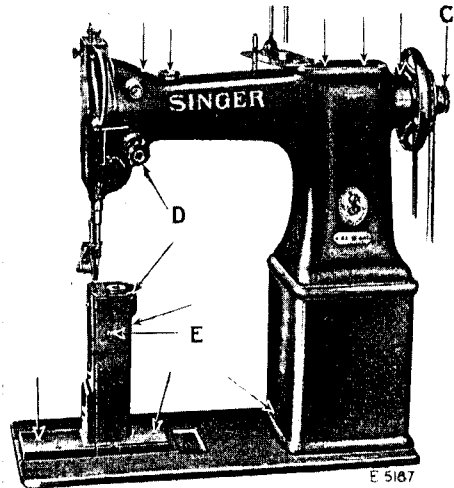


FIG. 2. OILING POINTS AT THE FRONT OF THE MACHINE

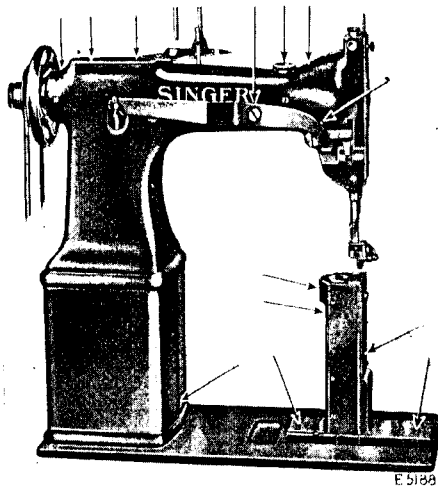


FIG. 3. OILING POINTS AT THE BACK OF THE MACHINE

Oil should be applied at the places designated by arrows as shown in Figs. 2, 3, 4 and 5. Swing back the cover which is on

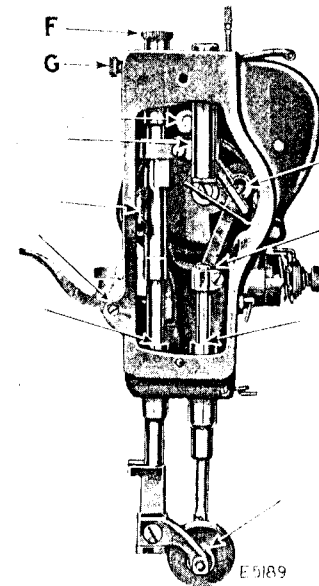


FIG. 4. END VIEW OF MACHINE, SHOWING OILING POINTS

the top of the machine at the right, and oil the bearings and connections which are thus uncovered, then replace the cover. Loosen the thumb screw near the upper end of the face plate, pull out the lower end of the face plate and turn the plate upward, and fasten by tightening the thumb screw. Oil the wicks and bearings as shown in Fig. 4, then replace the face plate.

Turn the machine back on its hinges and apply oil at the places shown in Fig. 5, then bring the machine forward into place.

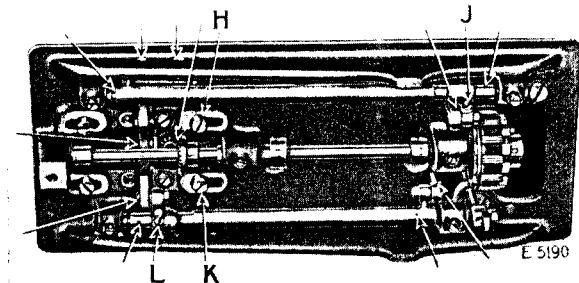


FIG. 5. OILING POINTS IN THE BASE OF THE MACHINE

### Thread

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

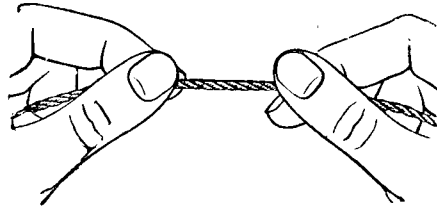


FIG. 6. HOW TO DETERMINE THE TWIST

Hold the thread as shown above. Then 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.

### Relative Sizes of Needles and Thread

The following sizes of needles and thread are recommended:

SIZES OF NEEDLES	COTTON	SILK
11	90, 100	00
12	80, 90	0
13	70, 80	A

### To Remove the Bobbin

Draw out the slide plate on the top of the post. Turn the balance wheel over toward you until the needle bar moves up

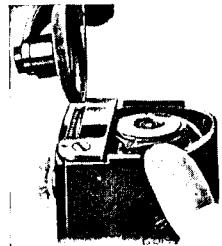


FIG. 7. TAKING OUT THE BOBBIN

to its highest point. Place the thumb or finger under the projection on the side of the bobbin case cap, as shown in Fig. 7, then lift the cap and remove the bobbin.

### To Wind the Bobbin

(SEE FIG. 8)

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.

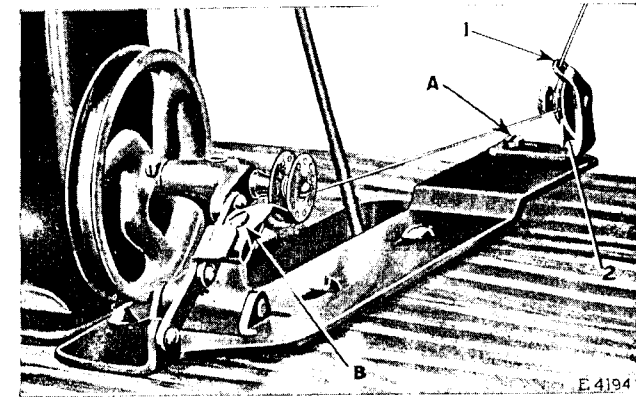


FIG. 8. WINDING THE BOBBIN

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 the screw outwardly.

Bobbins can be wound while the machine is stitching.

### To Thread the Bobbin Case Cap

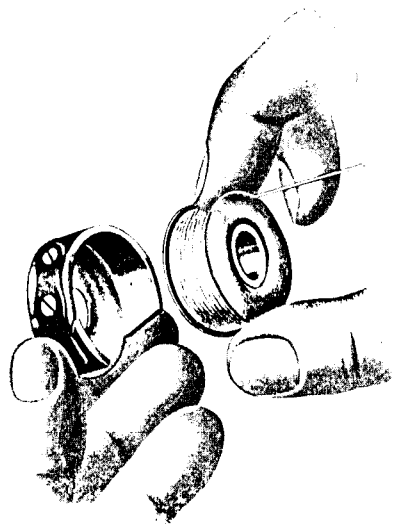


FIG. 9

With the left hand hold the bobbin case cap as illustrated (see Fig. 9), and place the bobbin into it.

Hold the bobbin between the thumb and forefinger of the right hand, the thread leading over from the left toward the right.

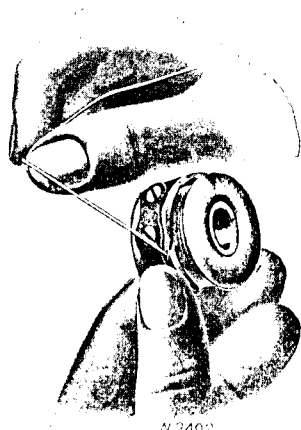


FIG. 10

Then pull the thread into the slot in the edge of the bobbin case cap (see Fig. 10), and under the tension spring as shown in Fig. 11.

To ensure the correct tension, draw the thread under the tension spring once or twice; this will remove any lint which may become lodged under the spring.

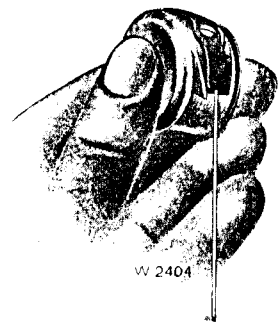


FIG. 11

### To Replace the Bobbin Case Cap

After threading, take the bobbin case cap in the right hand, holding the bobbin in the cap with the forefinger, and place it

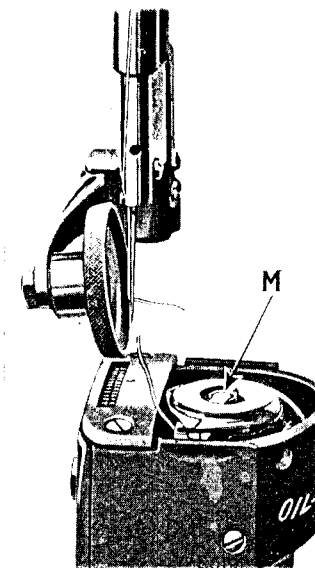


FIG. 12. BOBBIN CASE CAP THREADED AND REPLACED

on the centre stud of the bobbin case base, then push down the latch (M, Fig. 12), having the thread at the left of the projection as shown in Fig. 12, and replace the slide plate.

### 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 lower end of the needle bar and put the needle up into the 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 set screw.

### To Thread the Needle

(SEE FIG. 13)

Pass the thread from the unwinder or from the spool on the machine from right to left through the upper hole (1) in the pin

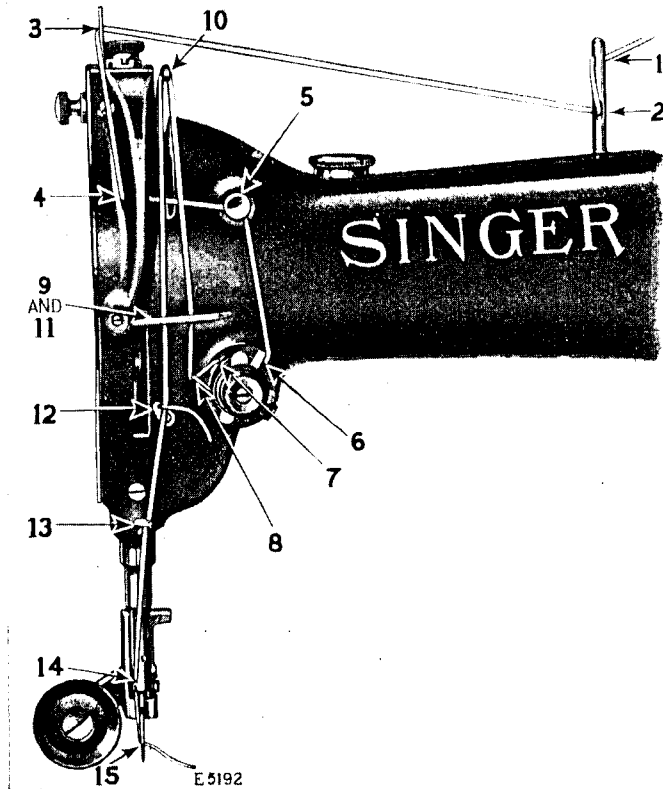


FIG. 13. THREADING THE NEEDLE

on top of the machine, and from front to back through the lower hole (2) in the pin, to the left through the thread guide (3), down and from left to right through the hole (4), over the top into the thread retainer (5), down, under from right to left between the tension discs (6), up into the fork (7) above the tension discs, into the hook of the wire controller spring (8), up through the wire guide (9), up and from right to left through the hole (10) in the end of the thread take-up lever, down through the wire guide (11), through the wire guides (12 and 13), through the hole (14) in the lower end of the needle bar, and from left to right through the eye of the needle (15). Draw about three inches of thread through the eye of the needle.

### 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 throat plate. Lay both threads back under the roller presser.

### To Commence Sewing

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

### Tensions

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



FIG. 14. 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. 15. 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. 16. LOOSE NEEDLE THREAD TENSION

### To Regulate the Tensions

The tension on the needle thread is regulated by the thumb nut (D, Fig. 2, page 4) at the front of the tension discs on the front of the arm of the machine. To increase the tension, turn this thumb nut over to the right. To decrease the tension, turn the 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 cap.

### To Regulate the Pressure of the Roller Presser on the Material

The pressure of the roller presser on the material is regulated by the thumb screw (F, Fig. 4, page 5) at the top of the machine. To increase the pressure, loosen the lock screw (G, Fig. 4) and turn the thumb screw (F) over to the right or downwardly. To decrease the pressure, turn the thumb screw (F) over to the left or upwardly. When the desired pressure of the roller on the material is obtained, securely tighten the lock screw (G).

### To Remove the Work

Let the thread take-up lever rest at its highest point, raise the roller presser, draw the work back and cut the threads close to the goods.

### To Regulate the Length of Stitch

The length of stitch is regulated by the thumb screw (C, Fig. 2, page 4) at the right of the balance wheel.

There is a notch in the hub of the balance wheel 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 (C) over toward you. To shorten the stitch, turn this thumb screw over from you.

## 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 reaches the goods in its descent.

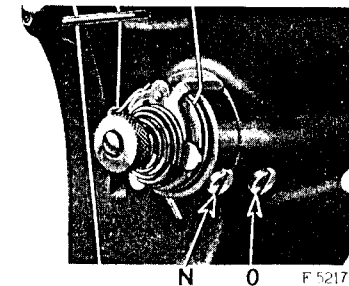


FIG. 17. ADJUSTMENTS ON THREAD CONTROLLER

For more controller action on the thread, loosen the stop screw (N, Fig. 17) at the right of the tension and set the stop lower, and for less action set the stop higher, then tighten the stop screw (N).

To strengthen the action of the controller spring on the thread, loosen the tension stud screw (O, Fig. 17) at the right of the stop screw and turn the tension stud slightly to the left with a screwdriver, or to lighten its action turn to the right and tighten the tension stud screw (O).

### To Raise or Lower the Feed Dog

Tip the machine back and turn the balance wheel toward you until the feed dog is at its highest position. Loosen the pinch screw (L, Fig. 5, page 5) in the feed bar slide block crank on the feed lifting rock shaft and move the crank up or down until the feed dog is at the desired height, then retighten the pinch screw (L).

If the feed dog strikes the throat plate, loosen the pinch screw (J, Fig. 5) of the feed driving connection crank at the right hand end of the rock shaft, then set the feed dog so that it will not strike when the longest stitch is taken, and retighten the pinch screw (J).



### Roller Presser

The roller should be set close enough to the needle to steady it and prevent it from staggering, and far enough back to prevent the leather from stretching.

### To Set the Needle Bar

The needle bar which is in the machine, when shipped from the factory, has upon it (about two inches from the bottom) two lines  $\frac{3}{32}$  in. apart. When the needle bar is at its lowest point, set it so that its highest mark is even with the under side of the arm head.

**To Set a New Needle Bar Which Has no Mark.** Set the needle bar so that when it rises  $\frac{3}{32}$  inch from its lowest position, the point of the hook will be at the centre of the needle and about  $\frac{1}{8}$  inch above the eye.

To change a machine fitted with the 128 X to use a 126 X needle it is necessary to set the needle bar  $\frac{3}{16}$  inch higher, as the 126 X is  $\frac{3}{16}$  inch longer than the 128 X needle.

### Needle Guard

The needle guard which is part of the hook washer should stand out far enough to prevent the point of the hook from striking the needle, but not far enough to prevent the point of the hook from catching the loop. Bend the needle guard slightly to adjust it.

### To Time the Hook

**To See if the Hook is in Correct Time.** Remove the slide and throat plate and turn the balance wheel toward you until the needle bar has passed its lowest position and risen so that the lower mark on it is even with the underside of the arm head. If in correct time the point of the hook will be at the centre of the needle and  $\frac{1}{16}$  inch above the eye; if not, loosen the screws in the bevel gear on the shaft under the hook and turn the gear forward or backward slightly until the hook is in time as instructed above, then retighten the screws. On very heavy work it may be necessary to set the needle bar a little lower and the hook slightly slower than the above rule.

### To Adjust the Sewing Hook

The sewing hook can be moved to or from the needle by loosening the screw (E, Fig. 2, page 4) at the front of hook post and the two screws (H and K, Fig. 5, page 5) underneath the bed of the machine and moving the hook post to the right or left as may be necessary to bring the hook into proper relation with the needle. When the sewing hook is correctly adjusted, firmly tighten the three screws (E, H and K).

### To Remove the Hook from the Machine

Remove the hook gib screw at the heel of the hook and move the gib aside to allow the base of the bobbin case to be

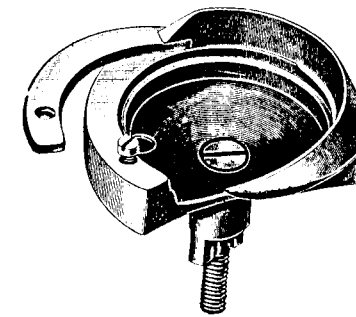


FIG. 18

taken out, after which remove the screw, shown in Fig. 18, from the centre of the hook. Tapping the hook slightly on the bottom of its rim will force it from its socket. Do not try to pry it out, as prying may bend the shank of the hook. In replacing the hook, be sure that the prongs of the shank properly enter the slot at the bottom of the socket, otherwise the hook will be out of time.

### To Remove the Belt from Within the Arm

Slide the arm shaft connection belt off the lower pulley, remove the feed regulating spindle and balance wheel from the end of the arm shaft, loosen the arm shaft bushing (back) screw at the back of the arm and remove the bushing, lift the belt up through the arm cap hole as far as possible and draw it out through the space where the bushing was.

In replacing the belt see that the hook (sewing) and needle are in correct time before running the belt on the lower pulley, and verify the correctness of the timing before commencing to sew.