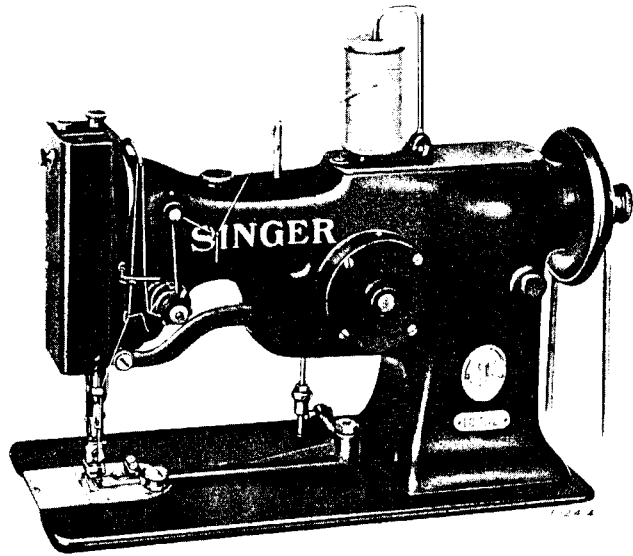


SINGER
107W2,W11

INSTRUCTIONS
FOR USING
SINGER*
SEWING MACHINES



107w2 AND 107w11
FOR
CLOSING HEEL SEAMS OF SHOES

* A TRADE MARK OF

THE SINGER MANUFACTURING CO.

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

Machines 107 w 2 (hinged presser foot) and **107 w 11** (roller presser) are rotary motion, high speed, lock stitch sewing machines, capable of overseaming, zigzag or straightaway stitching, at the will of the operator.

The rotary system of construction is extended to driving the needle bar frame pitman, thus assuring durability at higher speed than it is possible to drive other overseaming zigzag machines.

These machines are designed for closing, at high speed, the heel seams of shoes, with straightaway and zigzag lock stitches whether the seams are to be finished with or without back stays; in fact, they are all-round closing machines.

Closing Seams for Back Stay Finish

The straightaway stitches makes an exceptionally tight seam, and the zigzag stitches pass over a guide (thread drawing) to give the seam proper elasticity, which allows the quarters to spread apart with the edges abutting, making a soft flat seam for the back stay to cover.

Closing with Straightaway Stitches

The machines normally make tightly drawn, straightaway stitches with which many heel seams are closed their entire length. Such seams are not usually covered with a back stay.

Closing with Zigzag Stitches only

The heel seams of Oxfords and other light, low shoes are closed with zigzag stitching, preparatory to being covered by a back stay. For this work an adjustment can be made to keep the machines making zigzag stitches, without effort on the part of the operator.

Speed

The maximum speed recommended for Machines 107 w 2 and 107 w 11 is 2100 stitches per minute. Run the machine slower than this at first and after the parts have become thoroughly glazed by their action, increase the speed to the maximum stated.

Needles and Thread

Needles for Machines 107 w 2 and 107 w 11 are of Class and Varieties 135 x 6 (narrow wedge points), 135 x 8 (in points other than narrow wedge), and 135 x 10 (narrow cross point). Needles 135 x 6 and 135 x 8 are furnished in sizes 10, 11, 12, 13, 14, 15, 16, 18, 20, 22, 23 and 24. Needles 135 x 10 are furnished in sizes 12, 14, 16 and 18.

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*, also the *class* and *variety* numbers separated by x. In the Class and Variety of needle of which various styles of points are made, the order should specify the style of point required.

The following are details of an intelligible order:

“100 No. 12—135 x 8 Spear Point Needles.”

“100 No. 16—135 x 10 Needles.”

Relative Sizes of Needles and Thread

NEEDLES FOR LEATHER WORK			FOR CLOTH WORK	
SIZE NUMBERS OF NEEDLES	COTTON THREAD	SILK THREAD	COTTON THREAD	SILK THREAD
10	70	OO and O	100 to 150	OOO to OO
11	60	A	90 “ 100	OO
12	50	B	80 “ 90	O
13	40	C	70 “ 80	A
14	36	D	60 “ 70	A
15	30	D	50 “ 60	B
16	30	E	40 “ 50	C
18	24	—	30 “ 40	C

Twist, Linen and Cotton Thread and Needles

Do not use poor thread or needles. Any good thread will work well, but you must not expect to make a smooth even

stitch with poor rough thread, nor can you expect a machine to work well with a cheap grade of needles made in imitation of ours. It is our interest to maintain the reputation of the machine and therefore we always supply the best. Persons living at a distance from a SINGER shop can send by mail, enclosing the money, and orders will be filled and forwarded promptly.

In using slack twist or uneven silk, should it be frayed or roughened, the needle is too fine or too sharp, or has a hooked point, make by striking the throat plate. A hook may be easily honed off a needle.

For ordinary work use the same size of thread on the bobbin as in the needle.

Always use soft finished thread on the bobbin.

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

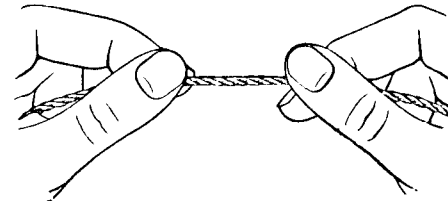


Fig. 2. How to Determine the Twist

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.

To Oil the Machine

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

The large hole near the front on top of the arm head is for screw driver use.

Oil the needle bar frame hinge stud at the top of the arm head, oil the take-up lever hinge stud through the hole back of the screw driver hole, oil the arm shaft bushing (front) and conduits through the oil packing (wick) thumb screw, and oil the arm shaft bushing (back) through the hole near the balance wheel. Move the arm cap aside and oil the feed driving and

lifting connections, also oil the needle bar frame pitman eccentric by passing the spout of the oil can down between the small gear (spiral) on the arm shaft and the arm.

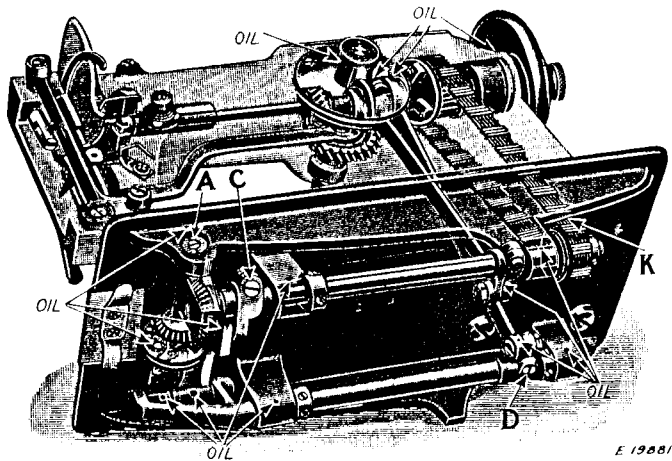


Fig. 3
Transparent View of 107 w 2 or 107 w 11 Machine
Showing the Places to Oil

Oil the front bearing of the needle vibrator cam shaft through the needle vibrator cam shaft bearing cover on front of the arm, and oil the back bearing through the hole at the back of the arm. Oil the needle vibrator crank shaft bearing (front) through the large hole in front of the arm and oil the shaft bearing (back) and wherever there is friction at the back of the arm.

Oil the hook driving bevel pinion shaft bearing (back) through the hole near the inside front corner at the base of the arm. Oil the needle bar frame pitman eccentric stud connecting with the needle bar frame at the underside of the arm head.

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

Remove the face plate and oil the needle and presser bars, the needle bar connecting stud swivel, the lower and upper holes in the needle bar connecting link, the groove that the link slides in, and wherever there is friction.

Tip the machine back and oil the feed bar slide block and all of the oil holes.

When a machine has been neglected or becomes gummed, it should be soaked well with benzine and run for a short time, keeping all parts flooded with oil, until it runs freely, then wipe thoroughly to remove all old oil and dirt and oil as before directed.

Never run the machine with the presser foot down, except when sewing, as it will scratch the presser foot and dull the feed dog.

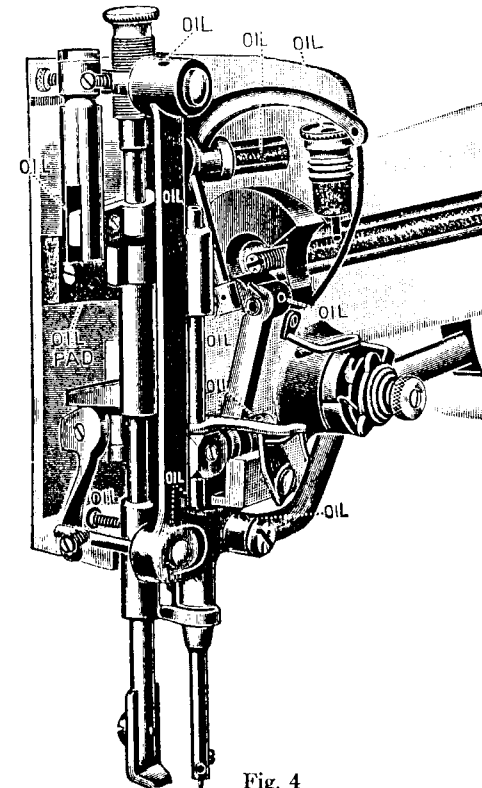


Fig. 4

Oil Conduits

Fig. 4 shows that the shaft and studs are hollow and filled with oil wicking, also the conduits for conducting the oil from the shaft through the needle bar crank to the needle bar driving and the take-up driving studs. The centrifugal force works the oil from the shaft to the bearing and through the conduits and studs. There is a conduit from the top of the arm to the stationary take-up stud.

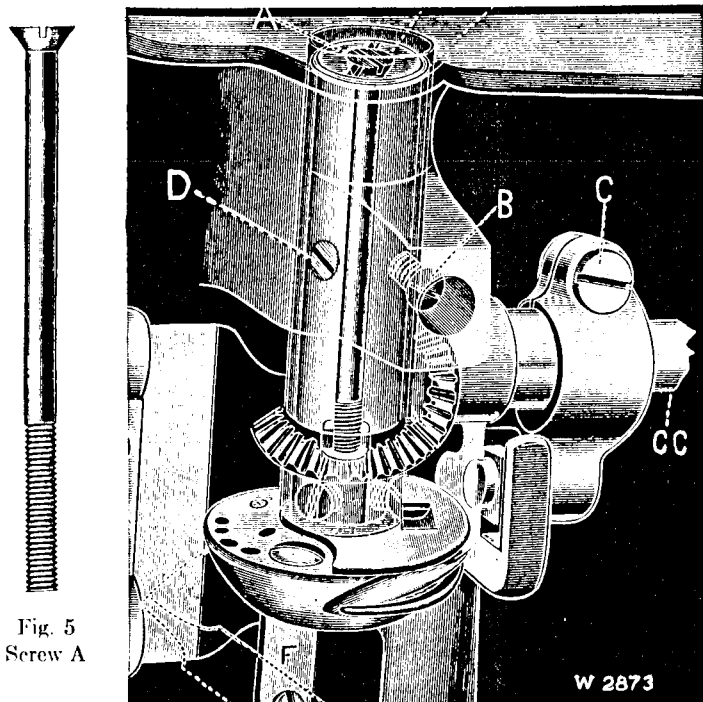


Fig. 6

Transparent view showing how the hook and its shaft (which runs in a bushing) are held together by screw (A, Fig. 6), also showing the feed bar slide block and its crank with the hook driving bevel pinion shaft extending out to the right at (CC).

To Set the Needle

Push the needle up in the needle bar as far as it will go, with the long groove to the front, and secure it firmly with the set screw.

It may be necessary to turn the needle slightly to the right or left for some threads, if stitches are missed.

Operators are liable to use needles which are too fine. Better results usually follow the use of a needle of a larger size.

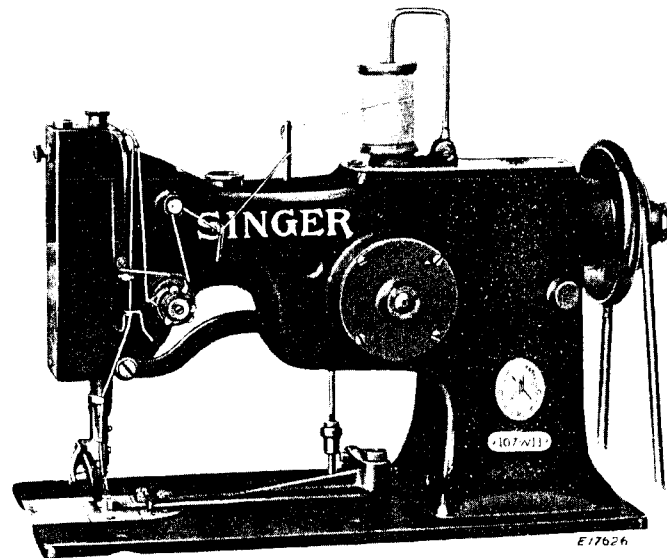


Fig. 7. Machine 107 w 11

To Thread the Needle

Lead the thread from the spool through the various guides, tension, take-up, down and from front to back through the eye of the needle.

As the thread is passed around between the tension discs draw it up and to the right until it passes into the fork above the thread controller.

Feed Regulator

The figures on the feed regulating spindle head at the right of the balance wheel, showing through the notch in the balance wheel, indicate the number of stitches to the inch which the machine should make. Turn the spindle head until the figures representing the desired number of stitches to the inch appear in the notch.

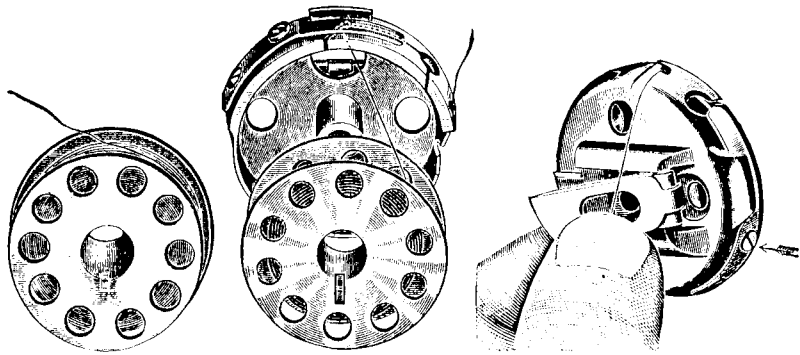


Fig. 8
Bobbin

Fig. 9
Thread the Bobbin Case Shows how to hold the Bobbin Case Cap as shown

Fig. 10
Case Cap after threading it, until placed in the Hook

To Remove the Bobbin

Lift the bobbin case latch (Fig. 10) and draw the bobbin case out from you, turn its open end down and release the latch and the bobbin will drop out.

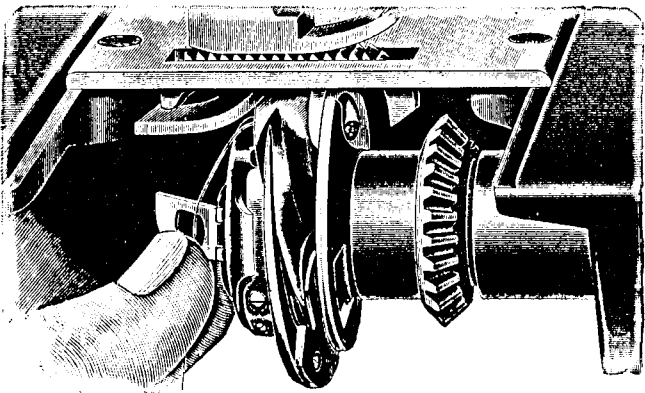


Fig. 11

To Thread the Bobbin Case and Replace it in the Hook

Turn the open end upwards, drop the bobbin into it with the thread unwinding as shown (Fig. 9) and raise the bobbin case latch, then draw the thread into the slot under the spring, down into the next slot and up through the delivery eye; then draw it down between the thumb and latch (Fig. 10) and so hold it until pushed into the hook (Fig. 11).

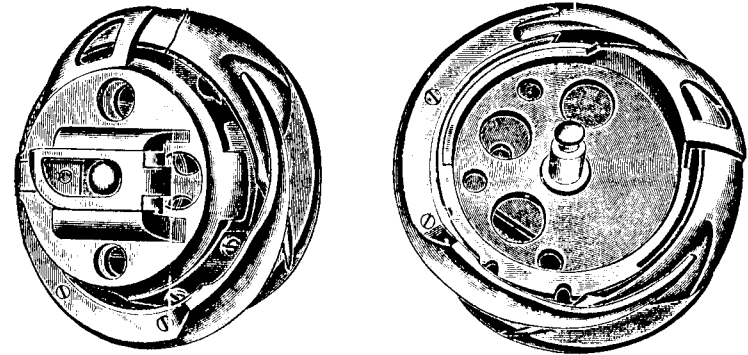


Fig. 12
Hook and Bobbin Case complete

Fig. 13
Hook and Bobbin Case Base

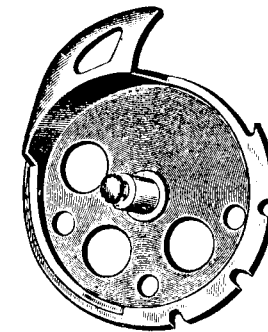


Fig. 14
Bobbin Case Base

Keep the inside of the bobbin case clean and the stud in the centre of the bobbin case slightly oiled.

To Regulate the Tensions

Regulate the upper tension by turning the tension thumb nut on the arm (Fig. 7) inwardly to tighten, and outwardly to loosen the tension.

Bobbin Case Tension

Regulate the tension on the lower thread by turning the bobbin case tension regulating screw in the centre of the tension spring slightly (Fig. 9).

To Wind the Bobbin

(See Fig. 15)

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.

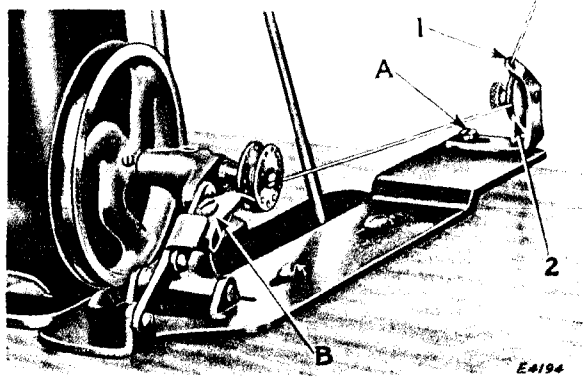


Fig. 15. Winding the Bobbin

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 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.

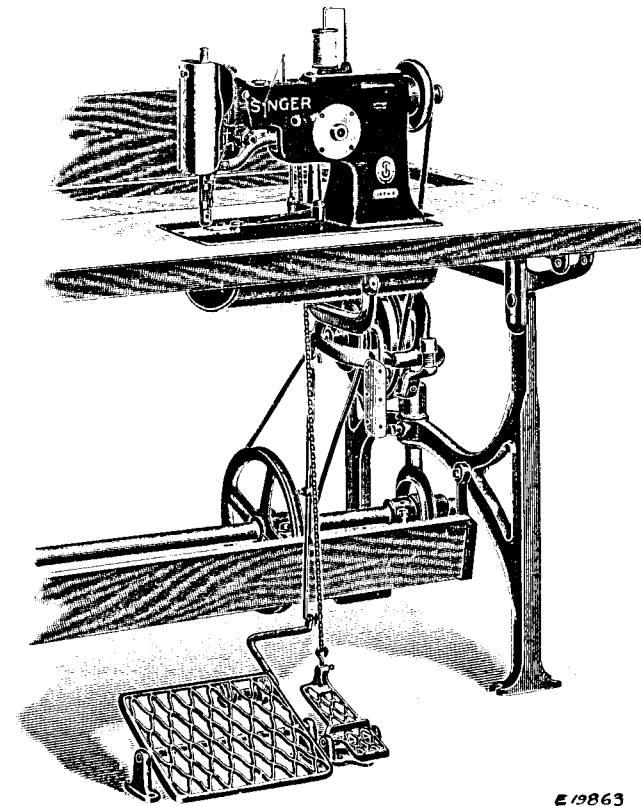


Fig. 16. Machine set up, ready for operation

Ready for Heel Seam Closing Operations

The change from straightaway to zigzag stitching and vice versa can be made instantly at the will of the operator.

Foot pressure on the small treadle switches the needle bar into zigzag motion and moves the guide, attached to the long lever, on the bed of the machine, forward into position for the zigzag stitches to form over it, measuring the thread placed in the seam to the exact amount required. Releasing the foot pressure switches the needle bar back for straightaway stitching and returns the guide to inoperative position.

To Commence Sewing

With the left hand take hold of the needle thread (leaving it slack between the hand and the needle), turn the balance

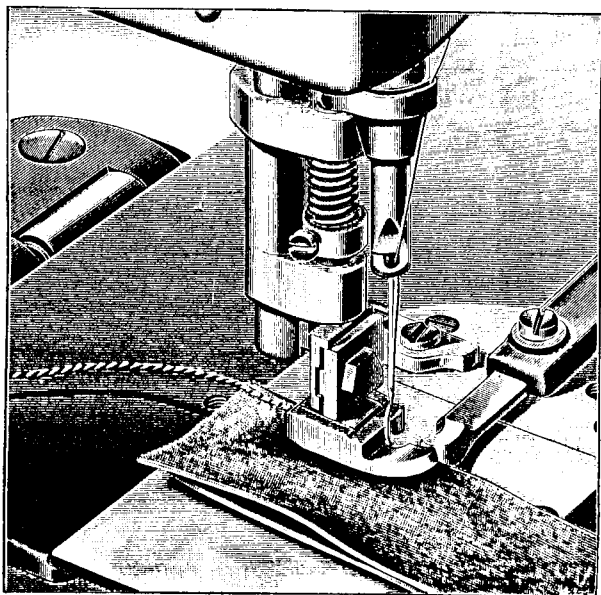


Fig. 17

wheel toward you until the needle moves down and the take-up lever rises to its highest point, thus catching the bobbin thread; draw up the needle thread and the bobbin thread with it through the needle hole in the throat plate and lay both threads back across the feed dog, lower the presser foot or roller presser upon them, "chain off" for about an inch (Fig. 17) to keep the seam tight, then insert the leathers and close the heel seam.

Do not pull or push the work. The machine moves it. If it does not, the stitch is too short, or the feed is too low or too high, or the pressure on the presser foot or roller presser is either too heavy or too light.

The pressure on the presser foot or roller presser is increased by turning down or decreased by turning up the presser bar thumb screw, which is above the presser bar.

To Turn a Corner

Stop the machine while the needle is rising, but before it is out of the material, raise the presser foot or roller presser and turn the corner, using the needle as a pivot.

To Remove the Work

Turn the machine by the balance wheel until the take-up lever is at its highest point. Raise the presser lifter and draw the work from you. If the threads do not draw out easily, the take-up lever is not in the right position, as directed. If the machine is stopped as directed, the needle will not be unthreaded in starting to sew, even if only a short end is left through the needle.

For convenience in taking out the work, the tension of the upper thread is released by raising the presser foot or roller presser with the lifter; but is not released by thick goods or seams passing under the presser foot or roller presser. Do not try to adjust the upper tension when the presser lifter is up as the tension is then loose.

Causes of the machine not working properly will usually be found in the tension not being correctly adjusted, or its discs may be clogged with lint or knots of thread, or the thread may be too coarse or too fine for the needle, or the needle and thread too coarse or too fine for the throat plate, or the needle bent or blunt. See that a straight needle is pushed up in the needle bar as far as it should go; any particle of lint or dirt which prevents it from going up can be removed through the cross hole in the needle bar.

Knee Lifter

The knee lifter is used for raising the presser foot or the roller presser by knee pressure against the knee plate, leaving both hands free to manipulate the work. If the knee lifter does not raise the presser foot or roller presser satisfactorily, adjust the rod in the rock lever which connects with the rod in the arm of the machine to lift the presser foot or roller presser.

INSTRUCTIONS
FOR
ADJUSTERS AND MACHINISTS

Thread Controller

The function of the thread controller spring is to hold back the slack of the upper thread until the eye of the needle nearly reaches the goods in its descent.

For more controller action on the thread, loosen the stop screw 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 at the right of the stop screw and turn the tension stud slightly to the left with a screw driver, or to lighten its action turn to the right and retighten the tension stud screw.

Feed

To take up lost motion of the feed driving and lifting connections.—Adjust their hinge and pinch screw.

To prevent the feed dog from striking at either end of the slots in the throat plate.—Loosen screw (D, Fig. 3) and move the feed dog forward or backward until the longest stitch can be taken without the feed dog striking the throat plate and retighten the screw.

To Raise or Lower the Feed Dog

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

Remove the throat plate; clean the lint and dirt 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 (C, Fig. 6) and raise or lower the feed dog as desired and retighten the screw.

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

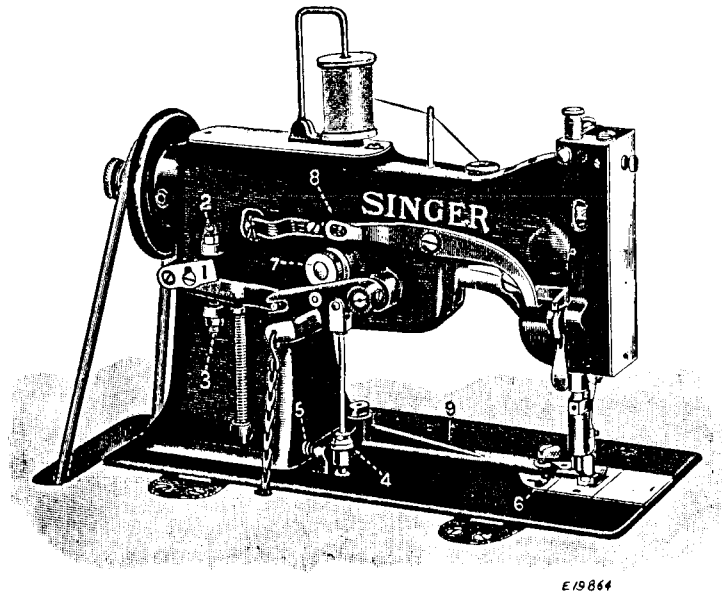


Fig. 18. 107 w 2 Machine (back view)
Showing the arrangement of the switch levers for instantaneous change from straightaway to zigzag stitching and vice versa

Reference Figures Explained

- | | |
|---|---|
| <p>1—Needle vibrator switch return lever adjusting plate, when set as shown in Fig. 18 the machine makes zigzag stitches only.</p> <p>2—Needle vibrator switch return lever stop screw, for keeping the straightaway stitches in perfect alignment. This adjustment will rarely, if ever, be required and should be very slight if made.</p> <p>3—Needle vibrator switch return lever stop screw, to limit the extreme width of bight, which should always be $\frac{3}{8}$ inch. This adjustment must not be attempted unless absolutely necessary to restore the extreme $\frac{3}{8}$ inch bight.</p> <p>4—Guide lever switch connection cam and check nut, to regu-</p> | <p>late the movement of the guide lever.</p> <p>5—Guide lever spring.</p> <p>6—Guide stop block to limit the forward movement of the guide, over which there should be two stitches in process of formation to give the seam proper elasticity. The guide should not extend under the presser foot far enough to pinch the thread. There should be enough clearance between the guide and presser foot to allow the stitches to "chain-off" between heel seams.</p> <p>7—Needle vibrator cam shaft collar, for continuous straightaway stitching.</p> <p>8—Knee lifter connection levers.</p> <p>9—Guide lever.</p> |
|---|---|

Needle and Needle Bar

Time adjustments can be tested or made only when the needle bar frame is held stationary for straightaway stitching.

To See if the Needle Bar Frame is Correctly Timed

For straightaway stitching the needle should run as close to the left edge of the slot in the throat plate as it would if the needle hole were round instead of slotted.

The needle bar on its upward movement should start to vibrate when the point of the needle is about $\frac{3}{8}$ inch above the throat plate, and the vibration should terminate when the needle has reached approximately the same position on its downward movement.

To Time the Movement of the Needle Bar Frame

If a straight needle does not run at the left edge of the slot in the throat plate, adjust the eccentric at the lower end of the needle bar frame, which connects it with the pitman. If the eccentric has been removed, when replacing it be careful to have the bulge downward.

If the vibration is not correctly timed, move the needle vibrator driving gear pinion on the arm shaft to the left or right.

To See if the Needle Bar is Set Correctly

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

The needle bar which is in the machine when shipped from the factory has upon it (about 2 inches from the bottom) two lines $\frac{3}{32}$ inch apart. When the needle bar is at its lowest position, the upper mark should be just visible at the end of the needle bar frame.

To Set the Needle Bar in Correct Time

Loosen the needle bar connecting stud pinch screw and place the needle bar in the proper position as directed above, then retighten the screw.

To Set a Needle Bar which Has no Mark

Set the needle bar so that when it raises $\frac{3}{32}$ inch from its lowest position the point of the hook will be at the centre of the needle and about $\frac{1}{16}$ inch above the eye.

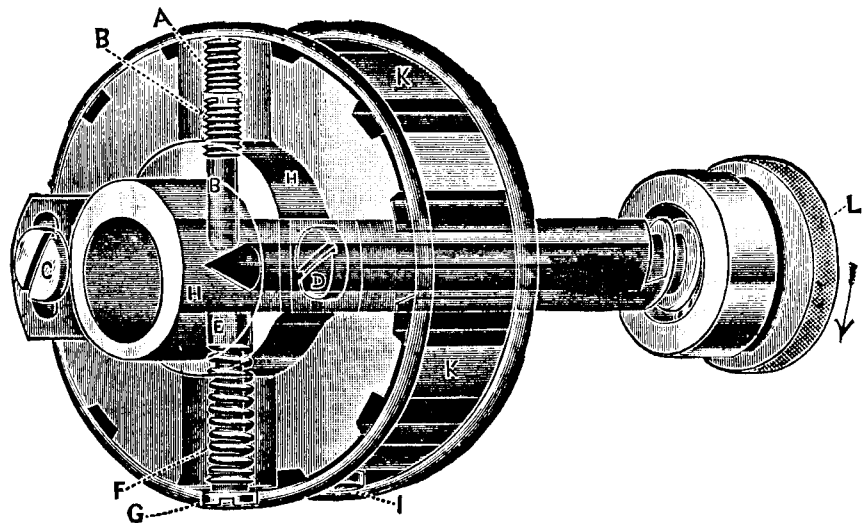


Fig. 19

Transparent view through the arm shaft connection belt pulley and shaft, showing the feed regulating spindle and feed driving eccentric regulating screw (B) which comes in contact with the cone of the spindle to gauge the length of stitch.

The figures on the feed regulating spindle head, showing through the notch in the balance wheel, indicate the number of stitches to the inch which should be made. If more or less stitches are made, adjust as follows: Remove screw (A, 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 (B) until eight stitches to the inch is the result and replace check screw (A) firmly, making the master adjustment, which controls the other numbers of stitches as indicated.

To Set the feed regulator so that a stitch longer than the one desired cannot be made.—Turn spindle head (L, Fig. 19) in the direction indicated by the arrow and make the longest stitch possible; remove check screw (A) and turn screw (B)

down until the machine places the desired number of stitches to the inch, then turn screw (A) down tightly on screw (B), as a check. The stitch may then be changed by turning spindle head (L) for a shorter stitch, but operators cannot make longer stitches than the limit that screw (B) is set to produce.

To Remove the Needle Vibrator Cam Shaft

Remove the needle vibrator cam shaft bearing and cover in front of the arm, loosen the position and set screws in the parts attached to the shaft in the arm, remove the needle vibrator cam shaft collar at the back of the arm and draw out the shaft.

When replacing these parts be careful that the large washer is in place between the gear and arm, that the position screws are set firmly against the flat spots on the shaft, and that the set screws are at the right of the position screws when the shaft has been returned to its place.

Hook (Sewing)

See Figs. 3 and 6

The hook driving bevel pinion shaft, driven by arm shaft connection belt (K, Fig. 3) runs through the feed lifting rock shaft, which is provided with bearings for the shaft.

To See if the Hook is Correctly Timed

Remove the throat plate and turn the balance wheel towards you until the lower mark across the needle bar as it is going up, is just visible at the end of the needle bar frame; now, if the needle bar and hook are in correct time the point of the hook will be at the centre of the needle and about $\frac{1}{16}$ inch above its eye.

To Time the Hook

Loosen the hook driving bevel pinion shaft belt pulley set screws and turn the balance wheel towards you until the needle bar goes to its lowest position and upward until the lower mark across the needle bar is just visible at the end of the needle bar frame, then stop turning and hold the wheel firmly. With the left hand, turn the hook until the point is at the centre of the needle— $\frac{1}{16}$ inch above its eye—see that the end play to the shaft is nearly eliminated, then retighten the pulley screws.

To Remove the Hook

Switch bobbin case stop (F, Fig. 6) to the position shown by the dotted lines; remove screw (A) and then remove the hook.

To Set the Hook To or From the Needle

The point of the hook should come as close as possible to the needle without touching it.

Loosen the two screws (B and D, Fig. 6) also the two set screws in the hook shaft gear, and move the hook to the desired position and retighten the B and D screws, then reset the hook shaft gear and retighten set screws.

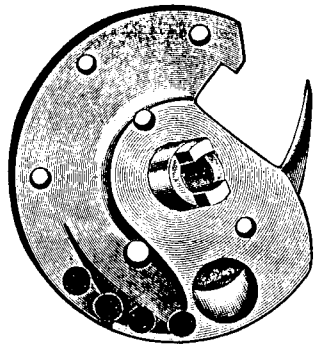


Fig. 20
Hook (only) Rear View.

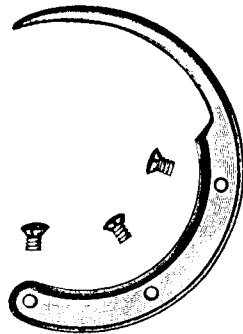


Fig. 21
Hook Gib Removed.
The screws enter from the
back of the Hook

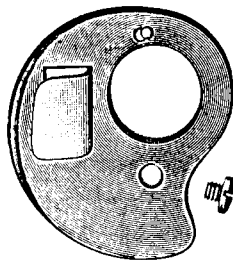


Fig. 22
Hook Washer with Needle Guard

To Remove the Belt from Within the Arm

Slide the arm shaft connection belt (K, Fig. 3) off the lower pulley, and remove the balance wheel; loosen the arm shaft ball bearing bushing (back) set 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 formerly occupied by the bushing.

When replacing the belt see that the sewing hook 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.

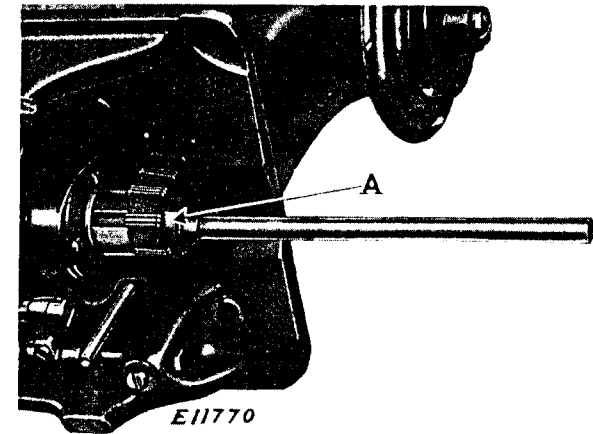


Fig. 23. Putting Belt on Lower Pulley with
Belt Replacer 244005

To facilitate the replacing of the belt on the lower pulley, use belt replacer 244005 (A, Fig. 23). Rest the replacer in the loop of the belt and slide it over the hub of the pulley, as shown in Fig. 23, having the notches in the replacer engage the two set screws in the hub of the pulley. Turn the balance wheel toward you until the belt is fully over the pulley, then remove the replacer.

Note: As belt replacer 244005 will serve for several machines, it is not regularly furnished with the machine, and must be ordered separately.

To Remove the Arm Shaft

Remove screws (B and I, Fig. 19) and compression screw (G); loosen the set screw in the belt pulley also loosen the screw and remove the position screw from the feed lifting eccentric and from the needle bar crank; loosen the set screws from the needle bar frame driving gear pinion (on the arm shaft) and draw the shaft out from the balance wheel end of the machine.

To Replace the Arm Shaft and Connections

Return the shaft to its place through the belt pulley, the feed lifting eccentric, the shaft gear, friction washer and needle bar crank, return the position screws to the belt pulley, feed lifting eccentric and needle bar crank, and into their position holes in the shaft; tighten the set screw of each and replace the balance wheel, leaving the least possible end play to the shaft.

To Remove the Arm Shaft Bushing (Front)

After removing the needle bar crank remove the bushing position screw from the back of the arm, insert a brass rod through the arm cap hole and drive the bushing out.