

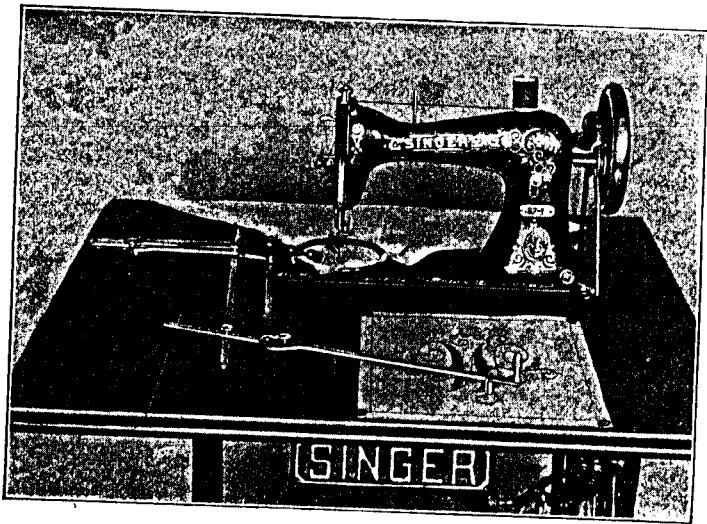
SINGER

87-1

INSTRUCTIONS

FOR USING

SINGER SEWING MACHINE



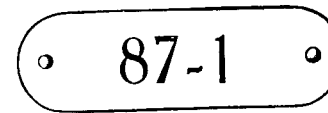
No. 87-1

FOR EMBROIDERING AND FAMILY SEWING

THE SINGER MANUFACTURING CO.

MACHINE NO. 87-1

The specific designation of each Singer Sewing Machine consists of two numbers, separated by a hyphen or letter and stamped upon a number plate, which is attached to the machine, usually upon the arm.



The number before the hyphen or letter designates the *Class* to which the machine belongs, and the number after, the *Variety* of the machine in its Class.

When supplies for a machine are to be ordered and there is any uncertainty as to the correct numbers of needles or parts, the Class and Variety numbers of the machine, as shown on the number plate, should be given to ensure a correct understanding of the order.

DESCRIPTION

Machine No. 87-1 is intended for embroidery work in over-cast stitches, making initials, monograms, wreaths, bouquets or other designs; the fabric is fastened in a hoop that is attached to a pantograph, by means of which the pattern is followed stitch by stitch, and the design reduced in size from one-third to one-eighth that of the pattern, but retaining its exact proportions. The machine is also supplied with parts necessary to change it into a regular sewing machine for household use.

INSTRUCTIONS FOR OILING the machine, setting and threading the needle, taking out, winding and replacing the bobbin, regulating the tensions, etc., will be found with instructions for regular sewing on page 11.

THE PANTOGRAPH

When fastening the pantograph to the machine table, the piece having stamped upon it No. 49524 must be so placed that the countersunk hole that is nearest one end is at the left of and toward the machine; holes for the two wood screws that fasten this piece are already in the table top, and the piece should be screwed down firmly.

If the pivot thumb screws of the pantograph are used in holes numbered 3 or 4, fasten piece No. 49525 to the two holes in No. 49524 that are farthest to the left and use the large hoop; but if holes 5, 6, 7 or 8 are to be used, fasten it to the two holes nearest the machine and use the small hoop. If at any time the large hoop is again to be used the position of No. 49525 must be changed toward the left.

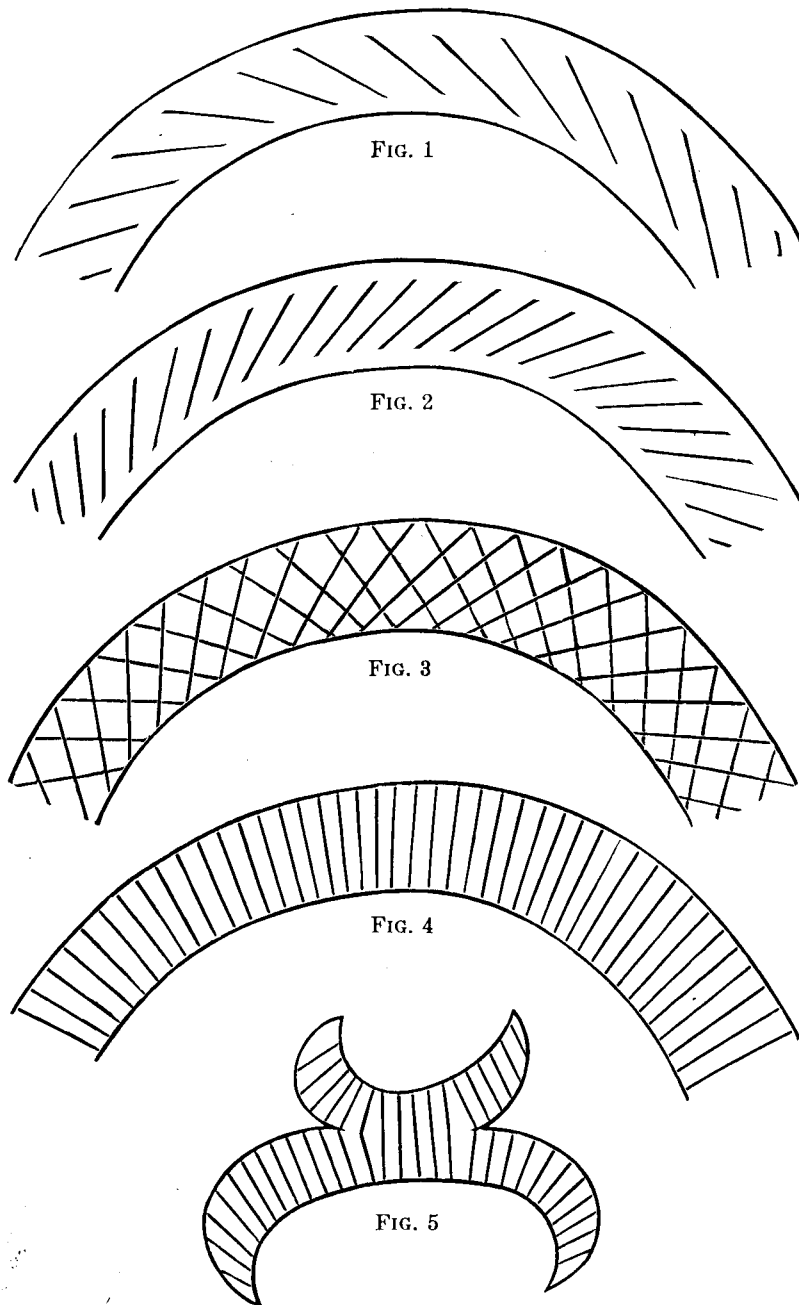
The pantograph is provided with a handle, and a pointer with which to follow the outer lines and cross hatchings of a pattern, also a hoop to hold the fabric under the needle. The different arms of the pantograph are stamped with the numbers 3, 4, 5, 6, 7 and 8; if the four pivot thumb screws are set in No. 3 the hoop will move in every direction just one-third as far as the pointer is moved on the pattern and the finished design will be one-third as large as the pattern; if the thumb screws are set in No. 5 the design will be one-fifth the size, and the proportionate reduction will be the same if set on any other number.

It is important that the same number on the pantograph should be used at each of the four points, otherwise the monogram produced will be distorted.

When changing the pantograph for making a larger or smaller monogram from a pattern of the same size or for any other purpose, only the four pivot thumb screws are to be adjusted to the different number; the small pivot screws that do not rise above the surface of the levers must not be disturbed.

PATTERNS

Patterns for the work are to be fastened to the table in front, or a little to the right of the operator, they must be drawn in double lines and hatched with cross lines as shown in Fig. 4, the distance between all lines being in the same proportion as those between the complete pattern and the monogram or other figure



DIAGRAMS OF PADDING AND COVERING STITCHES

to be made from it; to produce the finest results, the pattern should be made for a certain reduction, and the hatchings, which are guides for the distance between the threads in the finished work, placed at a distance apart which will cause the threads to lie close together and parallel to each other; if a pattern hatched for a reduction to one-third should be used for a reduction to one-sixth, of course some threads would lie over others producing work of inferior appearance; this could, however, be obviated by using only every other hatch line in the pattern; Fig. 4 shows the correct distance between lines and hatchings intended for a reduction of six to one.

THREAD

For embroidery work such as is done by Machine No. 87-1 either fine silk or mercerized cotton should be used; no good results can be attained unless the thread is soft and fine; Singer mercerized cotton, which can be obtained at Singer shops, is very suitable for monograms on linen and an excellent cotton thread in white, and fast washable colors, known as mercerized D. M. C. is sold in New York City and elsewhere.

PADDING

Before following the hatchings to produce the embroidery or covering stitches it is necessary to put in padding stitches to give the work a rounded up appearance; Figs. 1, 2 and 3 represent such stitches for curved lines; no hatchings are necessary for padding stitches but the design should be gone over with oblique stitches, kept well within the outer lines, as shown in Figs. 1 and 2, and afterward with others reaching to the outer lines as shown in Fig. 3; while regularity of distance is not absolutely necessary in padding, the finished work is best if the padding is even; straight lines are padded by long stitches, forward and back until sufficient padding is made; small knots, buds, etc., are padded by straight stitches nearly covering the whole surface but in a direction opposite to those of the finishing stitches.

TO STITCH THE DESIGN

Be sure that the pantograph is set for the reduction desired, the pattern fastened to the table in position so that when the pointer is in the center of the pattern the needle is over the center

of the hoop, that the needle and thread are *fine*, the thread soft, and the machine tensions so arranged as to make a smooth stitch, without loops; the lower thread tension should be a little stronger than the upper. Have the fabric tightly stretched in the hoop.

In operation the handle of the pantograph must be moved only after the take-up is at or near its highest point, and the movement must stop before the needle point enters the fabric on its downward stroke; if moved while the take-up is rising it will probably cause the thread to break, or a bad stitch to be made, while if it is moved after the needle enters the fabric there is danger of breaking the needle. In the beginning, move the needle bar down and up once, holding the end of the needle thread; draw the under thread up through the fabric by the needle thread and after two or three stitches inside the outer lines cut off the loose ends of the threads. Now, moving the machine slowly, place the pointer first at one end, then the other of each hatch line, being careful to stop exactly on the lines of the pattern at each needle stroke.

The learner should practice with the pattern, with fabric in the hoop, and thread in the needle; after a little time the operator will know exactly when to make the quick movement of the pointer from one outside line to the other; learn to move the machine very slowly but at the same time to keep it moving; after a little practice in this way the sound of the movement of the machine will indicate to the operator the exact time for moving the pointer and speed will soon be acquired.

TO FIT THE MACHINE FOR REGULAR SEWING

Remove the pantograph leaving piece No. 49524 fastened to the table; remove the throat or needle plate, also the presser foot. The shank of the feed dog fits into a slot on the right hand side of the feed bar; fasten it there with the screw provided for it; put on the throat plate that has the slots for the feed surface; test the height of the feed surface by turning the balance wheel; it must rise above the surface to push the work forward and drop below it when moving backward so as not to disturb the fabric; raise the presser bar by the lifter and put on the presser foot; then

lower the presser bar so that it will rest and press on the goods; remove the face plate and loosen the screw in the bracket near the center of the presser bar and push the bar down until the presser foot rests on the throat plate; raise it very slightly by the lifter and push it down still farther from the top keeping the presser foot in direct line with the throat plate and feed, then fasten the screw firmly and replace the face plate.

INSTRUCTIONS

FOR USING

SINGER SEWING MACHINE

No. 87-1

FOR REGULAR FAMILY SEWING

INSTRUCTIONS

TO OIL THE MACHINE

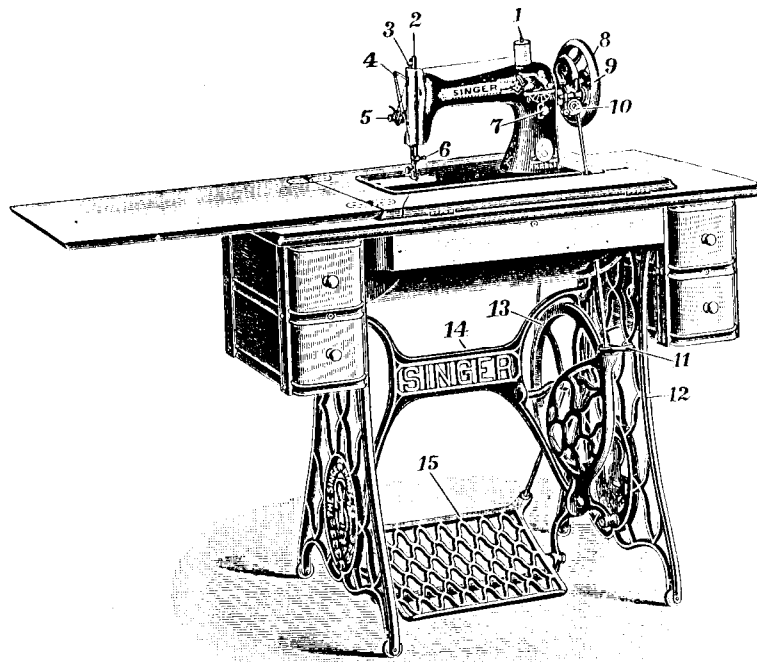


FIG. 6

- | | |
|--------------------------------------|------------------|
| 1—SPOOL PIN | 8—STOP MOTION |
| 2—NEEDLE BAR | 9—BALANCE WHEEL |
| 3—PRESSURE REGULATING THUMB
SCREW | 10—BOBBIN WINDER |
| 4—THREAD TAKE-UP LEVER | 11—BELT SHIFTER |
| 5—TENSION THUMB NUT | 12—LEG |
| 6—NEEDLE CLAMP SCREW | 13—BAND WHEEL |
| 7—STITCH REGULATOR | 14—BRACE |
| | 15—TREADLE |

All places where one part of the machine rubs against another, producing friction, require oiling, and oil holes will be found for all bearings which cannot be reached without them. Put a drop of oil in each of the oil holes indicated by arrows in the illustrations on the following page, and in the oil hole for the bobbin winder spindle. Put the smallest possible amount of oil in the shuttle race two or three times a day if the machine is in constant use. Be careful to use no more oil than is needed, a single drop being sufficient at any point.

If the machine runs hard after standing idle for some time, use a little kerosene or benzine on the wearing points, run the machine rapidly and wipe clean; then oil as before directed. If the machine still runs hard it is certain that some bearing has been overlooked in cleaning and oiling.

TO OPERATE THE TREADLE AND MACHINE

First loosen the stop motion clamping screw, outside the balance wheel (see Fig. 6). Then place your feet upon the treadle with the instep directly over its center, turn the balance wheel toward you with the right hand, allowing the feet to move freely with the motion thus commenced, and continue this motion by an alternate pressure of the heel and toe until a regular and easy movement is obtained.

Do not attempt to learn to sew until you are proficient in the use of the treadle so that you can stop and start it without turning the balance wheel in the wrong direction.

After becoming familiar with the treadle movement, tighten the stop motion clamping screw, raise the presser foot with the lifter, start the balance wheel toward you and continue the motion with the feet as above described. After becoming proficient in this motion place a piece of cloth between the feed and

presser foot, let the foot down upon it, and operate the machine in this way until you have become accustomed to guiding the material.

NEEDLES

Needles for Machine No. 87-1 are of Class and Variety 16 x 11 and are made in sizes suitable for the different sizes of thread commonly used.

When ordering needles give the *quantity* and *size* required, also the *class* and *variety* numbers separated by x; an order for a dozen No. $\frac{1}{2}$ Needles should read:

"One Doz. No. $\frac{1}{2}$ Needles, 16 x 11."

RELATIVE SIZES OF NEEDLES AND THREAD

SIZES OF NEEDLES	CLASS OF WORK TO SEW	SIZES OF COTTON, LINEN OR SILK
0	Very thin Muslins, Cambrics, Linens, etc.	100 to 150 Cotton 000 & 00 Silk Twist
B	Very fine Calicoes, Linens, Shirtings, fine Silk Goods, etc.	80 to 100 Cotton O Silk Twist
$\frac{1}{2}$	Shirtings, Sheetings, Bleached Calicoes, Muslins, Silk and general domestic goods and all classes of general work	60 to 80 Cotton A and B Silk Twist
1	All kinds of heavy Calicoes, light Woolen Goods, heavy Silk, Seaming, Stitching, etc.	40 to 60 Cotton C Silk Twist
2	Tickings, Woolen Goods, Trousers, Boys' Clothing, Corsets, Cloaks, Mantles, etc.	30 to 40 Cotton D Silk Twist
3	Heavy Woolens, Tickings, Bags, Heavy Coats, Trousers, etc. Heavy Clothing generally	24 to 30 Cotton E Silk Twist 60 to 80 Linen
4	Bags, Coarse Cloths, Heavy Goods of any texture	40 to 60 Linen or very Coarse Cotton

To make a smooth, even stitch with your machine, it is necessary to use good, firmly twisted and smoothly finished thread, that passes freely through the eye of the needle. No other needles will give as good results and satisfaction as those recommended above.

Supplies of parts or needles for the machine can be purchased at any Singer shop, or ordered by mail; money, or a post office order covering their value, including postage should be enclosed with the order, which will then receive immediate attention, and be promptly filled and forwarded by mail or express.

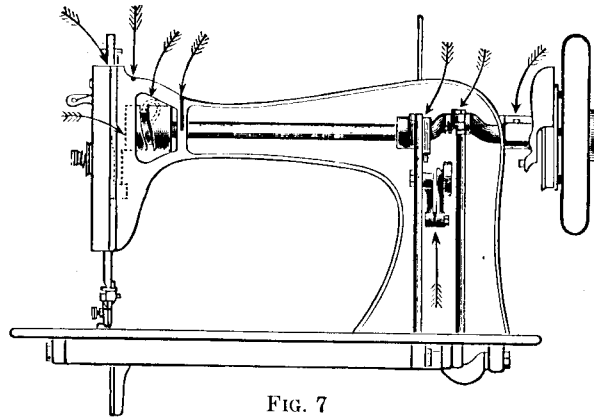


FIG. 7

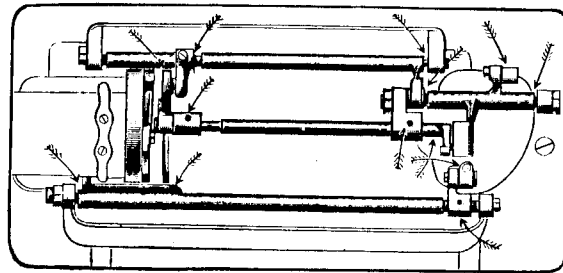


FIG. 8

OILING PLACES SHOWN BY ARROWS

TO SET THE NEEDLE

First turn the balance wheel 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 clamp as far as it will go, with its long groove to the left, and the eye directly in line with the arm of the machine, then screw fast. The needle will require no further adjustment.

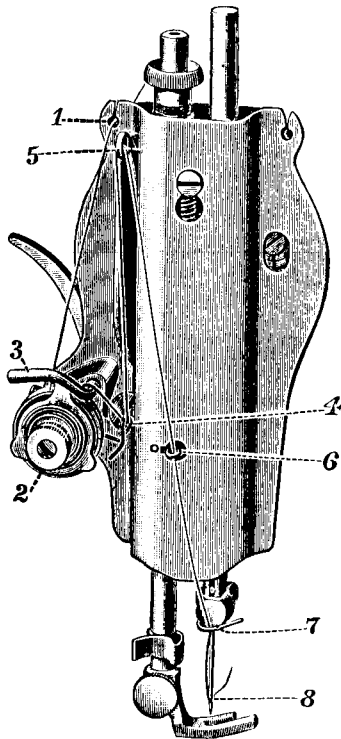


FIG. 9

TO THREAD THE NEEDLE

Place the spool of thread on the spool pin; draw the thread through the thread retainer guide (see 1, Fig. 9) at the back and near the top of the face plate, under and between the tension discs (2) from the back, up into the tension thread guard (3), into the hook (4) of the take-up spring, pass up and through the eyelet (5) in the end of the take-up lever from the back, draw down into

the eyelet (6) on the front of the face plate, into the eyelet (7) at the lower end of the needle bar, and pass from left to right through the eye (8) of the needle.

Enough thread should be drawn through the needle to leave an end two inches long when the take-up lever is at its highest point with which to commence sewing.

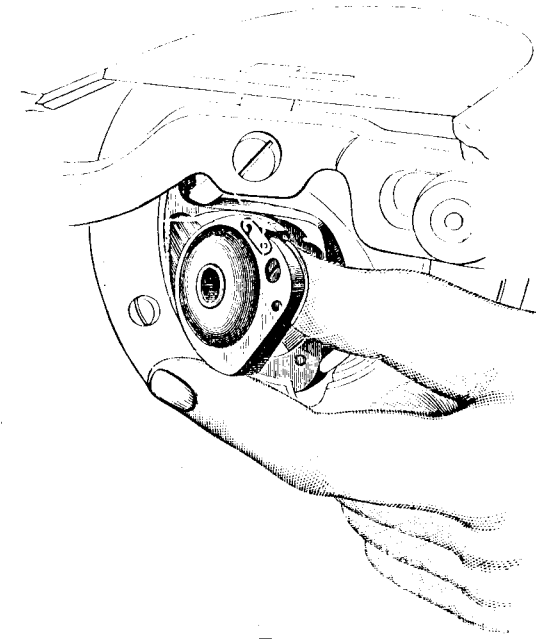


FIG. 10

TO TAKE OUT THE BOBBIN

Open the slide on the bed of the machine, and bring the shuttle into position by turning the balance wheel toward you until the needle bar reaches its lowest point; then with your left hand under the table, remove the bobbin, by placing your thumb against the cap on the outside of the shuttle, as shown in Fig. 10, and press it outward as far as it will go; the cap will then remain open and allow the bobbin to drop out into your hand.

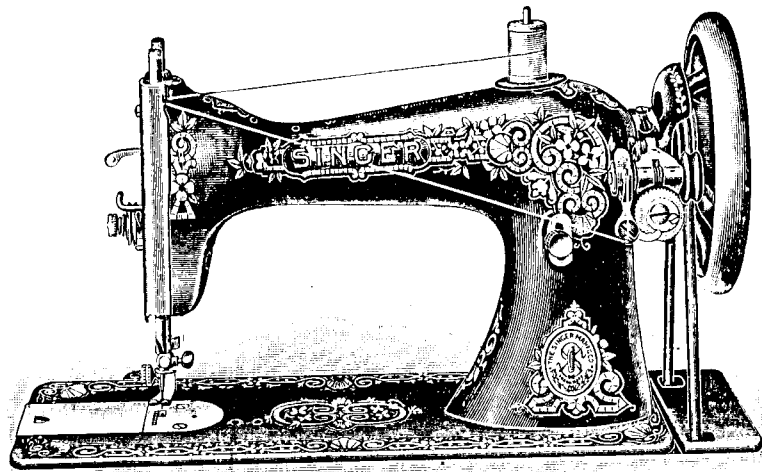


FIG. 11

TO WIND THE BOBBIN

Loosen the stop motion clamping screw outside of the balance wheel. Press the bobbin on the bobbin winder spindle until it reaches the shoulder; place the spool of thread on the spool pin of the machine, draw the free end of the thread into the eyelet on the front edge and near the top of the face plate, into the lower eyelet of the bobbin winder thread guide from below, into the notch at its top, and pass through one of the holes in the flange of the bobbin from the inside; then press the bobbin winder pulley down on the belt until the latch drops down and holds it, and operate the treadle the same as in sewing.

The free end of the thread must be held with the hand until a few coils are wound, and should then be broken off. Fig. 11 shows the bobbin winder properly threaded and in position for winding.

TO REPLACE THE BOBBIN AND THREAD THE SHUTTLE

Take the bobbin between the thumb and forefinger of the left hand with the thread drawn tightly across the finger, as shown in Fig. 12.

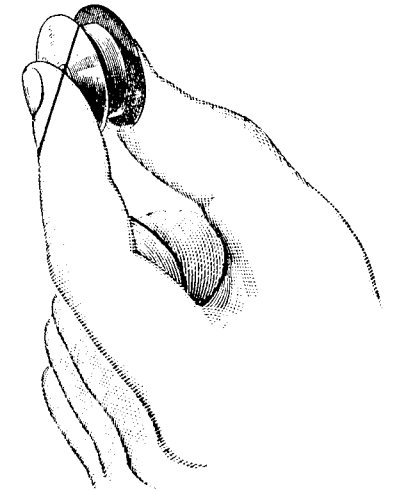


FIG. 12

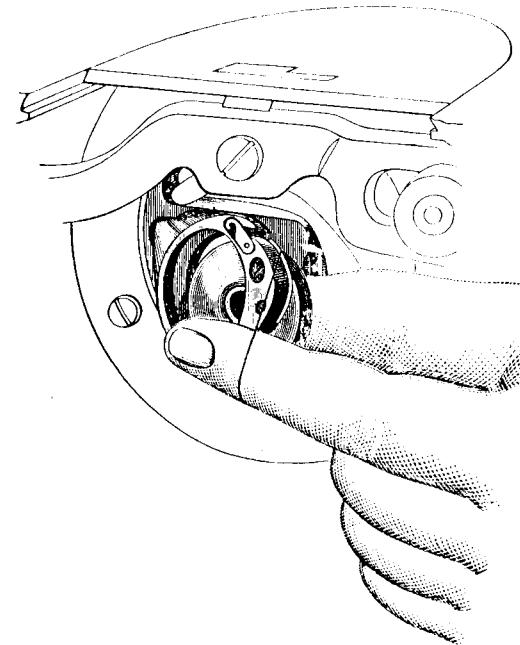


FIG. 13

Pass the hand under the table and place the bobbin in the cap of the shuttle, and with the same movement press the thread which passes over the finger into the slot of the delivery eye, as shown in Fig. 13.

Press the cap with the forefinger against the thumb, meanwhile supporting the bobbin in its place with the thumb, as shown in Fig. 14.

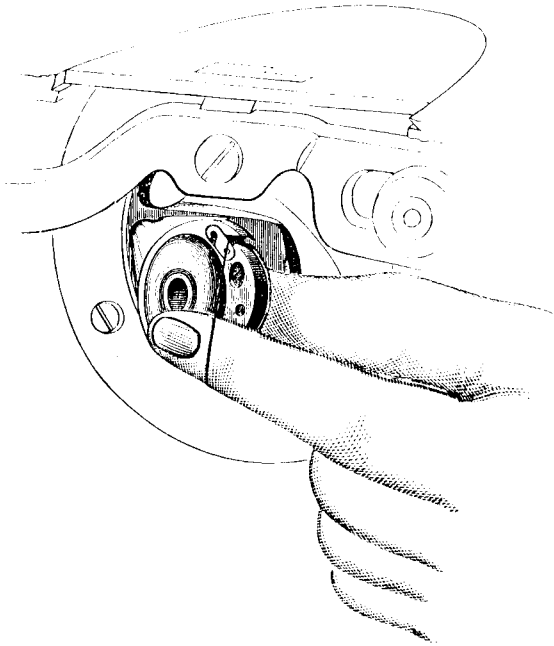


FIG. 14

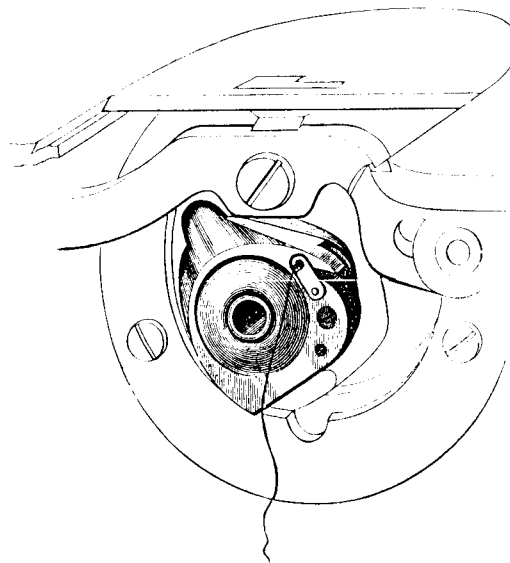


FIG. 15

Withdraw the thumb gently, allowing the shuttle to close; then draw the thread behind the delivery eye guard or hook, as shown in Fig. 15, leaving an end two inches long with which to commence sewing.

TO COMMENCE SEWING

With the left hand take hold 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 shuttle thread; draw up the needle thread, and the shuttle thread with it through the hole in the throat plate, lay both threads back across the feed points; place the material beneath the needle, lower the presser foot upon it, and commence to sew, turning the wheel over toward you.

TO REGULATE THE TENSIONS

The shuttle tension is regulated by the screw in the tension spring. Using the small screw driver, turn to the right to increase or in the opposite direction to diminish it. When once properly regulated it will seldom require to be changed for any kind of thread commonly used, as a perfect stitch can usually be obtained by regulating the tensions on the upper or needle thread. To regulate the upper tension, turn the small thumb nut in front of the tension discs, over toward you to increase the tension, and from you to diminish it. A loose tension is best for sewing cotton or linen fabrics, to prevent fullness after the goods have been washed.



FIG. 16

If there are loops or a straight thread on the *under* side of the fabric, as in Fig. 16, it shows that the upper or needle tension is too loose.



FIG. 17

FIG. 18

If loops or a straight thread appear on the *upper* side of the goods, as in Fig. 17, it shows that the upper tension is too tight, and it should be diminished sufficiently to bring the lock in the center of the fabric, as in Fig. 18.

TO ALTER THE LENGTH OF STITCH

At the right side of the operator, and on the front of the arm, there is a thumb screw working in a slot. Loosen this and move it downward to lengthen, or upward to shorten the stitch. When you get the length of stitch you require, tighten the thumb screw.

TO REMOVE THE WORK

Let the take-up rest at its highest point; take hold of the upper thread between the take-up lever and the eyelet on the face plate and draw down about two inches of slack; then raise the presser foot, and draw the fabric to the left about two inches, and cut the threads by drawing them behind and then down across the knife edge of the thread cutter, leaving the ends caught behind the same. This ingenious but simple device saves "hunting up the scissors" every few minutes, and is a highly valued addition to the special attachments of the Singer machine.

TO CHANGE THE PRESSURE ON MATERIAL

Turn the large thumb screw on the top of the head of the machine to the right to increase, and to the left to decrease the foot bar pressure. When properly set, this seldom needs to be changed for any ordinary work.

THE BELT

The leather belt, which gives motion to the machine, should always be tight enough not to slip, and no tighter—not so tight as to prevent the easy motion of the machine. If the belt is too long, uncouple and cut to the desired length.