Main Parts
Parts of the Machine Stand
Instructions for Operating the Machine
To Ensure Perfect Action of the Machine
To Take Out the Bobbin
To Wind the Bobbin
To Replace the Bobbin
To Set the Needle
To Thread the Needle
To Prepare for Sewing
To Commence Sewing
To Remove the Work
Tensions
To Regulate Tensions
To Turn a Corner
To Regulate the Length of Stitch
To Regulate the Pressure on the Material
To Sew Flannel or Bias Seams
A Stitch to Ravel Easily
To Oil the Machine

Hints
The Belt
Machine WORKing Heavily
To Avoid Breaking Needles
Breaking of Needle Thread
Breaking of Bobbin Thread
Skipping of Stitches
Attachments with the Machine

Instructions for Using the Attachments
Foot Hemmer
-- Hemming
-- Hemming and Sewing on Lace
-- Felling
Adjustable Hemmer
-- Hemming
-- Wide Hemming
Binder -- Binding
Bias Gauge
-- To Bind with Dress Braid
Ruffling
Ruffler -- Ruffling Between Bands
To Ruffle and Sew On
-- Five Stitch Ruffling or Paiting
Ruffler with Shirring Plate -- Shirring
Quilter
Tucker
Under Braider
Embroidary and Darning
Relative Sizes of Needles and Thread
Main Parts

Parts of the Machine Stand

A. BELT GUIDE
B. BAND WHEEL
C. BAND WHEEL CRANK
D. PITMAN
E. TREADLE
F. BELT SHIFTER
G. LEG
H. DRESS GUARD
INSTRUCTIONS FOR OPERATING THE MACHINE

Raise the presser foot (B, Fig. 3) by means of the presser bar lifter (C, Fig. 3) to prevent injury to the foot (B, Fig. 3) and feed (A, Fig. 3).

It is necessary to understand the stop motion (D, Fig. 3) by which the balance wheel (E, Fig. 3) can be released when required, thus enabling the operator to become proficient in the use of the treadle and permitting the winding of bobbins without running the stitching mechanism. It also allows the operator to wind bobbins without removing partially sewn work and without unthreading the machine.

To release the balance wheel (E, Fig. 3) turn the stop motion screw (D, Fig. 3, page 3) over toward you. It may be necessary to hold the balance wheel while loosening the stop motion screw.

After releasing the balance wheel place your feet upon the treadle and with the right hand, turn the balance wheel over toward you. This will start the band wheel, treadle and pitman, the sewing mechanism having been disconnected.

Continue the motion thus begun by an alternate pressure of heel and toe, until a regular and easy movement is acquired, and the balance wheel kept in continuous rotation by use of the feet alone.

When you are thoroughly familiar with the treadle movement, and can restart the machine without turning the balance wheel in the wrong direction, tighten the stop motion screw to connect the balance wheel with the stitching mechanism.

Place a piece of cloth under the presser foot, let the foot down upon it, and operate the machine in this way without being threaded, until you have become accustomed to guiding the material.
To Ensure Perfect Action of the Machine

The balance wheel must always turn over toward the operator.

Do not run the machine with the presser foot resting on the feed without cloth under the presser foot.

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

Do not try to help the machine by pulling the fabric lest you bend the needle. The machine feeds the work without assistance.

The slide over the bobbin case should be kept closed when the machine is in operation.

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FIG. 4. REMOVING THE BOBBIN

To Take Out the Bobbin

Draw to the left the slide in the bed of the machine and press the forefinger of the right hand upon the bobbin ejected as shown above; this will raise the bobbin so that it can be easily taken out.
To Wind the Bobbin

Release the balance wheel (E, Fig. 3, page 3) by turning the stop motion screw (D, Fig. 3, page 3) over toward you.

Place the bobbin on the bobbin winder spindle (E, Fig. 6, page 7) and push it up closely against the shoulder, having the small pin in the spindle enter the hole in the side of the bobbin. Put the spool of thread on the spool pin (1, Fig. 5). Pass the end of the thread into the thread guide (2, Fig. 5) then up into the lower eyelet (3, Fig. 6) of the bobbin winder thread guide, into the notch (4, Fig. 6) and pass the thread through the hole in the left side of the bobbin (5, Fig. 6) from the inside. Press the bobbin winder pulley (B, FIG. 6) down on the balance wheel hub and the latch (C, Fig. 6) will drop down and hold it. Then operate the treadle the same as for sewing.
To Wind the Bobbin continued...

The end of the thread must be held by the hand until a few coils are wound and should then be broken off. Figs. 5 and 6 show the bobbin winder properly threaded and in position for winding. When sufficient thread has been wound upon the bobbin it is automatically released from the stop latch (C, Fig. 6).

If the pressure of the rubber ring (B, Fig. 6) against the hub of the balance wheel is insufficient for winding the bobbin, loosen the adjusting screw (D, Fig. 6) and press the bobbin winder lightly until the rubber ring is in contact with the hub of the balance wheel; then tighten the screw.

FIG. 6. WINDING THE BOBBIN
To Replace the Bobbin

Hold the bobbin between the thumb and forefinger of the left hand, the thread leading on top from the right toward the left, as shown in Fig. 7.

Place the bobbin into the bobbin case and draw the thread into the slot (1, Fig. 8) in the bobbin case, as shown below.

Draw the thread backward between the bobbin case and the tension spring until it reaches the notch (2, Fig. 9) then pull the thread toward the right as shown in Fig. 9.

When closing the slide see that the thread is in the slot (3, Fig. 10) in the right edge of the slide, as shown below.
To Set the Needle

Turn the balance wheel over toward you until the needle bar moves up to its highest point in the sleeve (D, Fig. 5), loosen the thumb screw (C, Fig. 5) in the needle clamp (B, Fig. 5) and put the needle up into the clamp as far as it will go, with its flat side toward the right, then tighten the thumb screw.

To Thread the Needle

SEE FIG. 11

Turn the balance wheel over toward you until the thread take-up lever (5) is raised to its highest point. Place the spool of thread on the spool pin at the top of the machine; lead the thread into the thread guide (1) at the left, down, under and from right to left between the tension discs (2), into the small wire spring (3), under the thread regulator (4) at the left (not through the eye in the thread regulator), up and from right to left through the hole in the end of the thread take-up lever (5), down into the eyelet (6), into the lower wire guide (7), then from left to right through the eye of the needle (8).

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

Instructions for threading the machine for darning and for embroidery are given on pages 34 and 35.
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 (see Fig. 12). Lay both threads back under the presser foot.

To Commence Sewing

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

To Remove the Work

Let the thread take-up lever rest at its highest point, raise the presser foot and draw the fabric back and to the left, pass the threads over the thread cutter (A, Fig. 12) and pull down lightly to sever them. Leave the ends of the threads under the presser foot.
Tensions

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

FIG. 13. 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. 14. 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 underside of the material, thus:

FIG. 15. LOOSE NEEDLE THREAD TENSION

To Regulate the Tensions

The tension on the needle thread should only be regulated when the presser foot is down. Having lowered the presser foot, turn the small thumb nut (E, shown in Fig. 16, above, and Fig. 5, page 6) at the front of the tension discs over to the right to increase the tension. To decrease the tension, turn the thumb nut over to the left.

FIG 16. NEEDLE THREAD TENSION

The tension on the bobbin thread is regulated by the larger screw (Fig. 4) which is nearest the back in the bobbin case tension spring. To increase the tension, turn the screw over toward you. To decrease the tension, turn the screw over from you.

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

Stop the machine with the needle at its lowest point. Raise the presser foot and turn the work as desired, using the needle as a pivot.

To Regulate the Length of Stitch

The length of stitch is regulated by the large thumb screw (A, Fig. 6) at the front of the machine near the bobbin winder.

To lengthen the stitch turn this screw over to the right. To shorten the stitch turn this screw over to the left.

To Regulate the Pressure on the Material

For ordinary family sewing it is seldom necessary to change the pressure on the material. If sewing fine silk or flimsy material, lighten the pressure by turning the thumb screw (A, Fig. 5) on the top of the machine over to the left.

To increase the pressure turn this screw over to the right. The pressure should be only heavy enough to prevent the material from rising with the needle and to enable the feed to move the work along evenly; a heavier pressure will make the machine run hard.

To Sew Flannel or Bias Seams

Use a short stitch and as light a tension as possible on the needle thread so as to leave the thread loose enough in the seam to allow the goods to stretch if necessary.

A Stitch to Ravel Easily

can be made if desired, by having the tension on the needle thread so light that the bobbin thread will not draw into the goods but lie straight, as shown in Fig. 15.
To Oil the Machine

To ensure easy running the machine and stand requires oiling and if used continuously it should be oiled each day. With moderate use an occasional oiling is sufficient. Oil should be applied at each of the places shown by arrows in Figs. 17, 18 and 19. One drop of oil at each point is sufficient. Oil holes are provided in the machine for bearings which cannot be directly reached.

To oil the mechanism under the slide, draw the slide (see Fig. 17) to the left and after removing the lint and dust which may have accumulated put a few drops of oil on the small piece of felt at the right of the bobbin ejector. The slide should then be closed.

Take out the thumb screw (A, Fig. 17) near the lower end of the face plate, raise the plate and slip it off over the head of the screw near the upper end of the plate; put one drop of oil into each of the oil holes and joints.
To Oil the Machine continued...

At the back of the machine is a round plate or cover, fastened by a thumb screw; loosen the screw, turn the plate upward and fasten by tightening the screw; turn the balance wheel slowly and oil the moving parts inside then turn the cover down and fasten it as before.

To reach the parts underneath the bed the belt must be thrown off the band wheel on the machine stand. For this purpose the belt shifter (F. Fig. 1, page 1) is placed at the front of the band wheel. By pressing the belt shifter lever to the left and working the treadle meanwhile, the belt is released and the machine can then be turned back on its hinges. The places to be oiled are indicated in Fig. 18, page 17, by arrows pointing to the oil holes and bearings.

To oil the stand, put a drop of oil on each of the places shown by arrows in the above illustration (Fig. 19).
The Belt.
See that the belt is not too tight; it should always be tight enough not to slip. If too loose remove the hook at one end, shorten the belt and rejoin.

Machine Working Heavily.
If the machine runs hard after standing idle for some time use a little kerosene in the oiling places, run the machine rapidly, then wipe clean and oil.

To Avoid Breaking Needles.
See that the presser foot or attachments are securely fastened by the thumb screw. Do not sew heavy seams or very thick goods with too fine a needle. A large needle and thread to correspond should be used on heavy work (see page 36).

See that the needle is not bent and avoid pulling the material when stitching.

Breaking of Needle Thread.
If the needle thread breaks it may be caused by:
- Improper threading.
- Tension being too tight.
- The thread being too coarse for size of needle.
- The needle being bent, having a blunt point, or being set incorrectly.

Breaking of Bobbin Thread.
If the bobbin thread breaks it may be caused by:
- Improper threading of bobbin case.
- Tension being too tight.

Skipping of Stitches.
The needle may not be accurately set into the needle bar or the needle may be blunt or bent. The needle may be too small for the thread in use.
ATTACHMENTS WITH THE MACHINE

Fig. 20
INSTRUCTIONS FOR USING THE ATTACHMENTS

FOOT HEMMER - Hemming

Raise the needle to its highest point. Remove the presser foot and attach the foot hemmer in its place (see Fig. 21). Clip off the right hand corner of the cloth, so that it will take the roll easily, turn up the edge about a quarter of an inch, insert it in the mouth of the hemmer and draw or push it along with the stiletto until under the needle. Then let down the presser bar and after taking two or three stitches, draw gently on the ends of the threads to help the work along till the feed catches it. In order to produce a smooth even hem the mouth of the hemmer must be kept just full.

Fig 21.

Fig. 21 shows also what is known as a bag seam or fell, made by passing two pieces of fabric through the hemmer together and hemming them down.
Start the hem as previously explained, and when it is well started raise the needle to its highest point.

Raise the hemmer to relieve its pressure on the hem, pass the end of the lace through the slot in the side of the hemmer, under the back of the hemmer and over the hem, as shown in Fig. 22.

Take care that the hem is not displaced in the hemmer and that the needle goes down through the lace and hem together. Then let down the presser bar and guide the lace over the front of the hemmer, keeping it well into the slot.
FOOT HEMMER
Felling

The two pieces of cloth to be felled should be
laid one over the other, right sides together,
the edge of the under piece being a little farther to tile right than the upper piece. Stitch
them together using the hemmer as a presser
foot, the front end of the hemmer forming a
guide for tile edges of both pieces, the upper
piece being guided by the inside and the
under piece by the outside of the projecting
front of the foot hemmer (see Fig. 23). Then
open the work out flat, wrong side up, the
edges straight, and taking the edges near the
beginning of the seam in the right hand, and
the ends of the threads in the left hand, draw
the edges into the hemmer which will ill turn
them as in hemming. Guide the second row
of stitching by following the first row with the
inside of the projecting front of the foot hem-
mer (see Fig. 24).
ADJUSTABLE HEMMER
Hemming

Remove the presser foot and attach the adjustable hemmer in its place as shown in Fig. 25. This hemmer will turn hems from 3/16 inch to 1 inch wide. The adjustment is made by loosening the thumb screw on the hemmer and moving the slide to the right or left until the hem turned is of the desired width. Enter the edge of the cloth into the hemmer under the scale and draw it back and forth until the hem is formed, stopping with the end under the needle. Lower the presser bar and commence to sew, being careful to guide cloth as to keep hemmer full. Felling can also be done with the adjustable hemmer.

ADJUSTABLE HEMMER
Wide Hemming

To make a hem more than one inch wide take out the thumb screw in the hemmer and remove the slide and pointer; fold and crease down a hem of the desired width; pass the fold under the extension at the right of the hemmer, and the edge into the folder as shown in Fig. 26 and proceed to stitch the hem.
Remove the presser foot and attach the binder in its place. Pass the binding through the scroll of the hinder and draw it back under the needle. Place the edge of the goods to be bound between the scrolls of the hinder and draw it under the needle. Lower the presser bar and sew as usual. To make French folds proceed as directed for binding except that the fold is stitched on to the face of the material instead of on the edge (see Fig. 27). After loosening the binder set screw and adjusting the binder the line of stitching can be brought nearer the centre, this being more effective when making French folds.

The bias gauge may be used by placing it on the point of a pair of scissors, as below, and different widths of material may be cut by adjusting the slide (S. Fig. 28.). Bias binding for binder No. 36595 should be cut fifteen-sixteenths of an inch wide if muslin or similar fabrics are used, and to do this the slide (S) should be placed half way between the lines marked "F" and "B." The edge of the goods should be passed through the attachment and against the slide while cutting. When binding with fine, soft or flimsy materials, cut the bias binding a suitable fraction wider.

The braid being stitched on the edge it should fit the binder without turning in the edges, as is the case with bias binding.
RUFFLER
Ruffling

Remove the presser foot and attach the ruffler in its place, connecting the arm with the needle clamp, as shown in Fig. 29.

The ruffler can be adjusted to make a gather or plait either at every stitch or once in every five stitches as the operator may choose.

To make a ruffle with a gather or plait at every stitch see that the adjusting lever (A, Fig. 29) of the ruffling is at its lowest point. Place the material to be ruffled between the lower or separator blade and the ruffling blade, draw the material slightly back of the needle, lower the presser bar and proceed to sew.

To make a finer gather shorten the stroke of the ruffling blade by turning the regulating thumb screw (B, Fig. 29) over to the left, also shorten the stitch. To make a fuller gather or plait lengthen the stroke of the arm by turning the regulating thumb screw (B, Fig. 29) over to the right, also lengthen the stitch. By varying these adjustments many pleasing varieties of work can be accomplished.
**RUDDLER**

**Ruffling Between Bands**

Place the lower piece of material below the separator blade, the piece of material to be ruffled under the ruffling blade and over the separator blade and the upper piece of material over the ruffling blade, as shown in Fig. 30.

**TO RUFFLE AND SEW ON**

Place the band below the separator blade the piece to be ruffled between the separator blade and the ruffling blade, and proceed. The ruffler should never be operated without cloth between the blades.

**RUDDLER**

**Five Stitch Ruffling or Plaiting**

To make a five stitch ruffle or plait, raise the adjusting lever (A, Fig. 31) to its highest point. The ruffling blade will then move forward and back once every fifth stitch.
RUFFLER WITH SHIRRING PLATE
Shirring

To attach the shirring plate (see Fig. 20) draw to the left the slide that covers the bobbin case, insert the downwardly projecting hooks on the shirring plate under the edge of the throat plate, push as far as possible to the right and press the pin into the hole at the right of the throat plate, then close the slide covering the bobbin case.

The lower or separator blade of the ruffler is fastened by a screw. Loosen the screw, take off the separator blade and attach the ruffler to the presser bar as instructed.

Place the cloth between the ruffling blade and the shirring plate, lower the ruffler on the goods and operate as in ruffling.
QUILTER

Remove the presser foot and attach the quilter foot in its place. The quilter guide can be used on either the right or left side of the needle and the distance of the guide from the needle determines the width of space between the rows of stitching. Slide the wire of the guide into the holder prepared for it on the foot and set it to the width desired.

Let the quilter guide follow the edge of the goods, a straight crease, or a chalk line, as the case may be, for the first row of stitching. All succeeding rows are made straight and at a uniform distance by keeping the last row steadily under the guide.

FIG. 33
TUCKER

Remove the presser foot and attach the tucker in its place. The width of the tuck is determined by the scale of figures nearest the needle, which shows in eighths and sixteenths of an inch the distance of the edge of the fold from the line of stitching.

The crease or mark for the second and following tucks is determined by the scale nearest the operator and this is set by the line in front of the needle hole in the presser foot. For blind tucks without spaces set both scales at the same figure; to make spaces between the tucks move the front scale farther to the left until the desired space is obtained.

Having adjusted the scales for tuck and space as desired, fold the material and crease by hand; pass the folded edge between the spring and spur near you, then between the two blades of the second scale, and back under the presser foot; draw to the right against the guide, lower the presser bar; see that the lever for the needle clamp to strike is in its backward position so as to form a crease for the next tuck, then proceed with the first tuck.

For the second tuck fold carefully at the crease made by the spur and place the edge of the first tuck underneath and against the spur at the left. The spur will serve as a guide and will also make a distinct crease for the next tuck. Always place the last tuck against the spur to ensure perfect work.

When making the last tuck the lever upon which the needle clamp strikes while tucking should be raised to its highest point; while the lever is in this position no crease for a succeeding tuck is made upon the goods.
UNDER BRAIDER

Remove the presser foot and attach the quilter foot in its place. Attach the under braider (see Fig. 20) as directed for the shirring plate (see page 30). The design to be braided must be stamped or traced on the wrong side of the goods. Pass the end of the braid back through the guides in the under braider and under the quilter foot as shown above. Lower the quilter foot and proceed to sew.
EMBROIDERY AND DARNING

While embroidery and darning can be done on the machine when threaded for regular sewing, the use of feed cover plate (B. Fig. 36) No. 32622 is recommended, as movable contact with the feed in some cases might interfere with the handling of the work.

Do not change the adjustment of the feed dog in any way as it is essential that its position should remain as originally fixed.

When the feed cover plate (B. Fig. 36) is used it is necessary to lead the needle thread through the eye in the thread regulator (A, Fig. 36) at the left of the tension discs, and not under the thread regulator. With this exception the threading is the same as for regular sewing (see Fig. 11).

Remove the presser foot and let down the presser bar lifter to restore the tension on the needle thread, which is released and inoperative when the lifter is raised.

To attach the feed cover plate draw to the left the slide that covers the bobbin case and insert the downwardly projecting hooks on the cover plate under the edge of the throat plate and push to the right. After bringing the hole at the right of the cover plate in line with the hole in the throat plate, press the cover into position, and close the slide (see Fig. 36).

Feed cover plates are not included in the regular sets of attachments; they are on sale at all Singer shops at the price of ten cents each.
### RELATIVE SIZES OF NEEDLES AND THREAD

(Class and Variety of Needles Used, 15 x 1)

<table>
<thead>
<tr>
<th>SIZES OF NEEDLES</th>
<th>CLASSES OF WORK</th>
<th>SIZES of COTTON, SILK OR LINEN THREAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Very thin Muslins, Cambrics, Linens, etc.</td>
<td>100 to 150 Cotton 00 &amp; 000 Silk Twist</td>
</tr>
<tr>
<td>11</td>
<td>Very fine Calicoes, Linens, Shirtings, fine Silk Goods, etc.</td>
<td>80 to 100 COTTON 0 Silk Twist</td>
</tr>
<tr>
<td>14</td>
<td>Shirtings, Sheetings, Calicoes, Muslins, Silk and general domestic goods and all classes of general work.</td>
<td>60 to 80 Cotton</td>
</tr>
<tr>
<td>16</td>
<td>All kinds of heavy Calicoes, light Woolen Goods, heavy Silk, Seaming, Stitching, etc.</td>
<td>A &amp; B Silk Twist</td>
</tr>
<tr>
<td>19</td>
<td>Tickings. Woolen Goods, Trousers, Boys' Clothing, Corsets, Cloaks, Mantles, etc.</td>
<td>40 to 60 Cotton C Silk Twist</td>
</tr>
<tr>
<td></td>
<td>Heavy Woolens, Tickings, Bags, Heavy Coats, Trousers, etc. Heavy Clothing generally.</td>
<td>30 to 40 Cotton D Silk Twist</td>
</tr>
<tr>
<td></td>
<td>Bags, Coarse Cloths and Heavy Goods.</td>
<td>24 to 30 Cotton E Silk Twist</td>
</tr>
<tr>
<td></td>
<td>When sending orders for needles always specify size required.</td>
<td>60 to 80 Linen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40 to 60 Linen or very Coarse Cotton</td>
</tr>
</tbody>
</table>