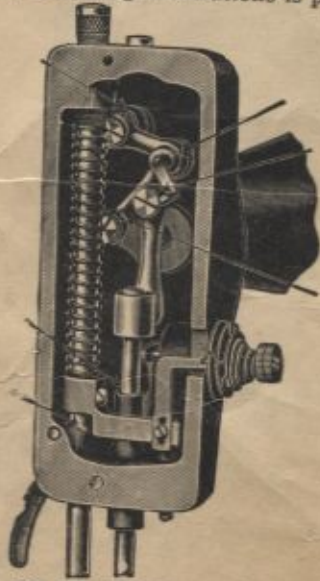


## About the Machine

A sewing machine, like all machinery, NEEDS OILING TO INSURE EASY RUNNING AND TO PREVENT UNNECESSARY WEAR of the parts which rub against each other. If the machine is USED CONTINUALLY, IT SHOULD BE OILED EVERY DAY. WITH MODERATE USE, an OCCASIONAL OILING is sufficient. ONE DROP OF OIL at each point shown in the following illustrations is plenty.



### HOW TO OIL LINK MOVEMENT

Remove the face plate held in place by thumb screw and place a DROP OF OIL in EACH of the five holes indicated by arrows. A drop of oil on the needle bar at bearing is required only occasionally. If oiled too freely it will run down bar, soiling the work. DO NOT FAIL TO OIL THESE PARTS REGULARLY.



### HOW TO OIL INSIDE ARM

Loosen thumb screw holding arm shield in place, raising it up, as shown in illustration.

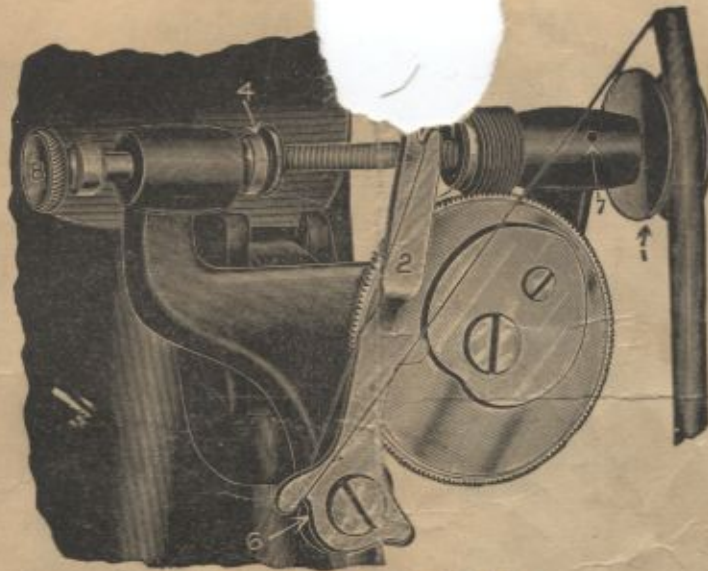
THIS IS A VERY IMPORTANT BEARING AND MUST BE OILED REGULARLY.

## When the Machine Runs Hard

It is generally due to gummed oil. TO KEEP THE MACHINE CLEAN AND TO PREVENT THE ACCUMULATION OF GUMMED OIL, USE A GOOD KIND OF OIL. NEVER USE A GUMMED OIL.

## How to Remove Gummed Oil

Remove the oil from the bearings it will be dissolved and the machine will run smoothly. LOOK & SIMILAR. APPLY KEROSENE OR COAL OIL to all machine rapidly for a few moments and this gum accumulation should then be thoroughly removed FROM EVERY BEARING. CAUTION—DO NOT OVER-OIL. IF THIS PROCESS HAS BEEN FOLLOWED.



### Winding the Bobbin

Hold the hand wheel with the left hand, and with the right hand release the clutch, turning it half-way around. This will permit the loose pulley to run free. Pull the bobbin winder towards you, UNTIL THE SMALL PULLEY WHEEL (1) COMES IN CONTACT WITH THE BELT. TURN THE MACHINE UNTIL THE DISTRIBUTING LEVER (2) IS AS FAR TO THE RIGHT AS IT WILL GO. Place one end of the bobbin in the socket (3) on the right side and the other end of the bobbin in the pivot point (4) in the plunger, on the left side. To do so, pull the plunger nut (8) towards the left to adjust the bobbin, letting it spring back in place, and hold the bobbin in position. With the end of the thread between the brass end of the bobbin and the socket (3) of the winder. Caution: Place the top of lever (5), then down through notch (6) in bottom of lever.

**NOTE**—Place the spool on spool pin and hold the thread, letting it run straight towards you from the spool over your finger and down to No. 6 guide on the bobbin winder, or the same results may be had by letting the thread run from the spool over the thread guide at top of face plate and down to No. 6. The illustration shows the thread being held in the hand above the bobbin winder.

**BE SURE TO STOP WINDING BEFORE THE BRASS END OF THE BOBBIN IS HIGHER THAN THE BRASS END OF THE B** and hold the thread, letting it run straight towards you from the spool over your finger and down to No. 6 guide on the bobbin winder, or the same results may be had by letting the thread run from the spool over the thread guide at top of face plate and down to No. 6. The illustration shows the thread being held in the hand above the bobbin winder.

When through winding the bobbin, push the winder towards you from the spool over your finger and down to No. 6 guide on the bobbin winder, or the same results may be had by letting the thread run from the spool over the thread guide at top of face plate and down to No. 6. The illustration shows the thread being held in the hand above the bobbin winder.

**WINDING THE BOBBIN CORRECTLY IN FORMING A PERFECT STITCH. DO IT WELL.**

**CAUTION—NEVER BEGIN WINDING A PARTLY FILLED WITH DIFFERENT KIND OF THREAD.**

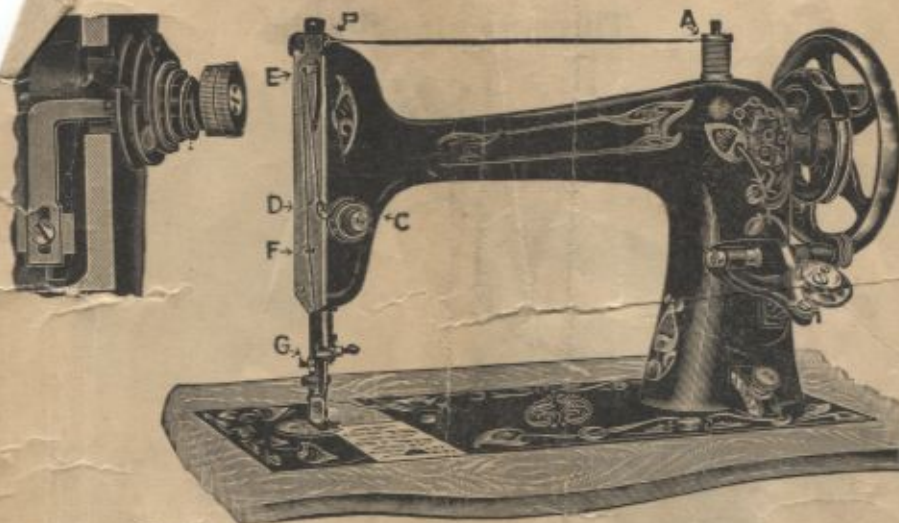
**THE THREAD IS WOUND CORRECTLY.** A drop of oil should be placed at friction point (4) at left end of bobbin (8) against the arm of the winder. (See illustration); also at (7).

against the arm of the winder. (See illustration); also at (7).

**IMPORTANT PART TO LEARN TO DO**

**ONE THAT IS**





### How to Thread the Machine

Place the spool of thread on spool pin (A), then draw the thread through guide (B) at top of face plate, then down to the right of and **BETWEEN THE TWO TENSION DISCS (C)**, which also brings the thread into position against the automatic thread controller or check spring (D) (SEE ABOVE), then up through the slot in end of takeup lever (E), then down through the thread guide (F), near bottom of face plate, then through the thread guide (G) on bottom of needle bar, then through the eye of the needle from left to right.

**IF THE MACHINE IS NOT THREADED EXACTLY RIGHT,** it will not sew perfectly.

### To Remove the Shuttle

Draw out the front slide. Turn the handwheel toward you until the shuttle is as far forward as it will go. With one finger of the right hand pull the shuttle ejector toward you with a quick movement. This will throw the shuttle out of the carrier, bringing the large end in a position so that you can easily grasp it with the thumb and finger of the left hand.

**DO NOT LIFT THE SHUTTLE OUT OF THE CARRIER WITH ANY INSTRUMENT OF ANY KIND. DO NOT TOUCH THE SPRING.**

The shuttle race **MUST BE KEPT CLEAN AND FREE**

## Threading the Shuttle



FIG. 1

Hold the shuttle in the left hand, as shown in the illustration; take the wound bobbin between the thumb and first two fingers of the right hand, hold the free end of the thread with the other fingers so that it leaves the bobbin from the front toward the right, and place the bobbin in the shuttle, as shown in the illustration, **PRESSING IT DOWN AS FAR AS IT WILL GO.**



FIG. 2

With the fore finger of the left hand hold the bobbin so that it does not revolve too freely. Lead the thread through the slot in side of shuttle until it appears to be exactly as shown in Fig. 2.



FIG. 3

With a circular movement of the right hand, draw the thread slightly to the left and upward until it is on the outside of shuttle barrel but under the guide on shuttle spring, being sure it is under the point on spring exactly as shown in picture. Pull the thread to make sure that the bobbin revolves **FREELY IN THE SHUTTLE**. Break off the thread so that about 4 inches hangs from the shuttle, then place shuttle in machine as directed.



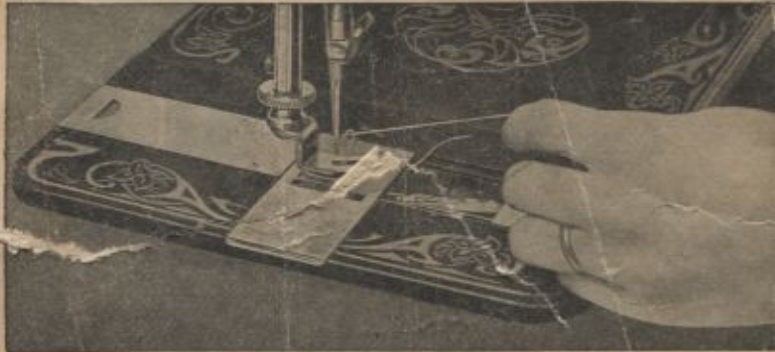
### To Set the Needle

**RAISE THE NEEDLE BAR TO ITS HIGHEST POINT**, and loosen the needle clamp screw. Hold the needle between the thumb and first finger of the left hand, and pass the shank of the needle up through the guide on the bottom of the needle bar, with the **FLAT SIDE OF THE SHANK TOWARDS THE NEEDLE BAR OR TO THE RIGHT**. THE END OF WHICH IS VISIBLE TO THE NEEDLE STOP PIN IN THE NEEDLE BAR GROOVE JUST ABOVE THE NEEDLE (See illustration.) Then clamp the needle.

Remember  
and will



## To Draw Up the Under Thread



Raise the presser foot. **HOLD THE END OF THE UPPER THREAD SLACK WITH THE LEFT HAND.** Turn the hand wheel once around towards you until the needle moves down, then up again to its highest point. The needle thread has been carried around the under thread, and can be drawn up through the hole in the needle plate by the upper thread. Draw the ends of both threads back under the presser foot towards the back of the machine; the upper thread through the opening in the foot.

**NOTE.**—Be sure the under thread runs straight from the prong on shuttle spring to the hole through which the needle passes and that it does not catch in thread slot in side of shuttle.

## Thread to Use

**THE BEST RESULTS ARE OBTAINED** when both the **UPPER AND LOWER threads are the SAME SIZE AND QUALITY.** IT IS A **COMMON MISTAKE** to think that No. 40 or No. 50 thread should be used in order to form a strong stitch. **BETTER RESULTS ARE OBTAINED BY USING NUMBER SIXTY (60), SEVENTY (70) OR EIGHTY (80) THREAD WITH A No. 1/2 NEEDLE,** for the reason that it draws more closely into the material, the wear and strain on the material instead of on the thread.

—Don't use cheap  
threads per

at the bargain coun-  
thread

# Tensions

## WHAT TENSION MEANS

Tension means pressure on the thread, which prevents the machine from drawing off more thread than necessary to form a stitch. You can create a tension on thread by placing it between the thumb and fore finger, pressing firmly upon it, and with the other hand drawing it through the fingers. The harder the pressure, the greater the tension. Therefore, both upper and lower thread must be controlled by the tension like that formed by pressing the fingers firmly upon the thread.

## SHUTTLE TENSION

**NOTE.**—We would not advise changing the shuttle tension unless absolutely necessary to do so, as the adjustment is rather delicate. Should it be necessary to change the shuttle tension, do so with the shuttle out of the machine, to avoid a possible chance of the point of the screw driver injuring the shuttle carrier or scratching the point of the shuttle.

The tension in the shuttle is governed by the pressure of the spring on the shuttle and adjusted by the small screw which holds the spring to the shuttle. **THIS SCREW TURNS TO THE RIGHT TO TIGHTEN, TO THE LEFT TO LOOSEN.**

**IF UNABLE TO GET SUFFICIENT TENSION BY ADJUSTING THE SCREW IN THE SHUTTLE,** there may be a **PIECE OF THREAD,** or a **COLLECTION OF LINT,** under the spring, preventing the spring from bearing on the thread. This can be forced out with a fine needle. If still unable to get sufficient tension, remove the spring and bend it, to have more pressure directly over the point where the thread draws out of the shuttle. After replacing spring, should the tension be too tight when the screw is below the surface, the spring has been bent too much; in other words, the pressure is too great. The spring can be raised by using the smallest screw driver, prying the spring up gently.

**NOTE.**—Bear in mind that the **SHUTTLE TENSION SCREW OF THE SHUTTLE** or the thread will catch on the head of the screw while sewing.

The bobbin must be wound evenly and not too full. The same size thread should be used in the shuttle as above. Use one kind and size of thread only on each bobbin.

## UPPER TENSION

Tension on the upper thread is formed by the thread passing between the tension discs or plates, and is regulated by the nut or screw in connection with same.

**BE SURE THE MACHINE IS CORRECTLY THREADED (READ THE THREADING INSTRUCTIONS CAREFULLY and have the right size needle for the thread.)**

## HOW TO TELL WHEN TENSION ON THE UPPER AND LOWER THREADS ARE CORRECTLY ADJUSTED

When the shuttle tension has been correctly adjusted according to the instructions and placed in the shuttle carrier, and the needle has been threaded, hold the end of the needle thread slack with the left hand, turn the hand wheel towards you once around and draw up the under thread. See illustration, page 12.



Lower the pressure foot. (REMEMBER, THE UPPER TENSION IS ENTIRELY RELEASED WHEN PRESSER FOOT IS UP. THEREFORE, IT MUST BE DOWN ON THE FEED WHEN TESTING TENSIONS.) Draw the upper thread through the eye of the needle to the right with the right hand, and the under thread through the opening in the presser foot to the left with the left hand, pulling both threads at the same time. You will then be able to tell when both threads pull alike.

Adjust the upper tension by turning tension nut (C) to the left to loosen and to the right to tighten.

When both tensions are properly adjusted, both threads are drawn into the fabric, thus:



If shuttle thread is too tight, or upper thread too loose, the thread on the under side will be straight, thus:



because there is not sufficient upper tension to draw the under thread in. To the contrary, if the shuttle thread draws off too easily, or the upper thread is too light, the under thread will draw up through the fabric and the upper thread will lay straight, thus:



## SKIP STITCHES

Skip stitches are more often caused by an imperfect needle or needle not correctly set, or not the right needle for the machine.

In setting the needle, be sure that the flat side of the needle shank is toward the needle bar and up as high as it will go. In case the needle does not go in freely, it must be forced up high enough to strike the needle stop screw. (See illustration, page 10.) The needle stop screw is plainly visible in the slot on the left side of the needle bar, directly above the needle clamp.

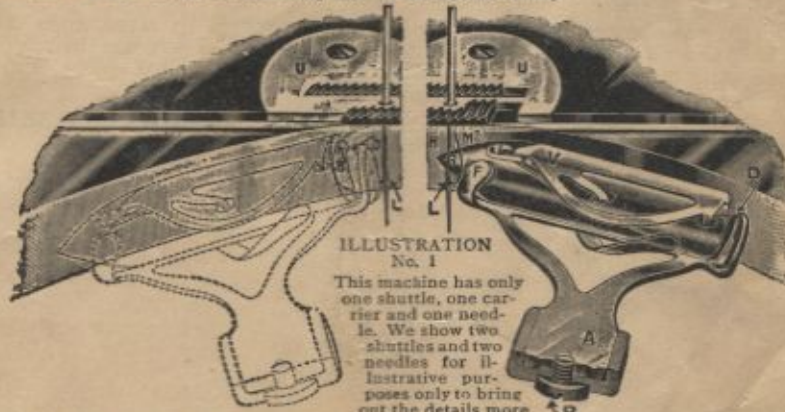


ILLUSTRATION  
No. 1

This machine has only one shuttle, one carrier and one needle. We show two shuttles and two needles for illustrative purposes only to bring out the details more clearly.

This View shows the position of the shuttle after it has passed the needle, also the position of the upper thread as it passes out behind the shuttle and locks the under thread into the cloth.

This view shows position of shuttle as it starts forward catching the loop of thread which is the formation of the stitch.



The needle should pass down through the hole in the needle plate slightly to the right of center. When the needle is correctly set and securely clamped to the needle bar the eye of the needle should be about one-eighth inch below the shuttle point. (See illustration showing the correct relative position of the shuttle point to the eye of the needle on page 15.)

**BEWARE OF CHEAP OR BOGUS NEEDLES.** They are not uniform. The location of the eye varies, consequently the needle eye will not be the right distance from the shuttle point when the shuttle is ready to pass through the loop.

Cheap thread or basting cotton is also a common cause for skipped stitches. **Buy and use only the best spool cotton.** If the needle is too fine for the thread the thread will not pass through the eye of the needle freely, interfering with the formation of the loop. (Refer to instructions on needle and thread sizes on page 13.)

The presser foot and attachments should be set back on the presser bar as far as they will go and securely fastened. If the presser foot or attachments are not correctly attached to the machine, the needle or thread may strike or rub in the needle hole in the attachment, causing skipped stitches.

Dirt or lint in the needle well, under the needle plate, will also cause skipped stitches.

## The Belt

The machine works best with the belt tight enough only to keep it from slipping on the pulley. If the belt is too tight it will cause the machine to run hard.

If necessary to replace an old belt, be sure that it passes over the center brace, running direct from the hand wheel through the hole in the back of the table and around the large wheel. Open all three drawers part way, noting that the belt does not rub on the center brace.

To remove the belt from the large drive wheel on stand, turn the wheel around until you find a slot cut in the rim. Force the belt into this slot, turn the wheel once around and it is unbelted. The same process will belt the machine below.

**KEEP THE BELT FREE FROM OIL. IT MAKES IT SLIP ON THE PULLEY, AND ALSO ROTS IT.**

## To Remove the Work

Stop the machine with the needle at its highest point. **RAISE THE LIFTER CRANK, WHICH AUTOMATICALLY RELEASES THE UPPER TENSION. DRAW THE WORK DIRECTLY BACK OF THE NEEDLE, CUT THE THREAD CLOSE TO THE GOODS,** leaving the ends under the presser foot.

## To Change the Pressure of the Presser Foot

Turn the large thumb screw at top of arm directly over presser bar to the right, or down, to make the pressure heavier. To the left, or up, to make it lighter. The pressure should be **HEAVY ENOUGH ONLY** to prevent the material rising with the needle and to insure that the feed moves the goods along evenly. Too heavy pressure is of no practical benefit. **IT MAKES THE MACHINE RUN HARDER AND MAY INJURE THE GOODS.**

## Sewing Over Thick Seams

If the pressure on the presser foot is too great, the feed will not catch in the goods sufficiently enough to force an extremely thick seam between the foot and the feed, so that it will be carried through. **DO NOT PULL ON THE MATERIAL** in your effort to make it feed through, as this will pull the needle out of line, causing it to strike the needle plate and break. **THE REMEDY IS TO RAISE THE PRESSER FOOT SLIGHTLY AND RUN THE MACHINE SLOWLY** until the seam has passed into the feeding surfaces. This is only necessary in extreme cases.

## To Change the Length of Stitch

The feed regulating thumb screw which adjusts the length of the stitch is directly over the bobbin winder, and when this thumb screw is turned to the left the stitch is shortened. When it is turned to the right the stitch is lengthened. Adjust this thumb screw to the desired position according to the class of work being done.

## To Turn a Corner

Stop the machine, with the **NEEDLE STILL IN THE GOODS, RAISE THE PRESSER FOOT AND TURN THE MATERIAL IN THE DIRECTION DESIRED, USING THE NEEDLE AS A PIVOT.**

## Flannel or Bias Seams

Use a **SHORT STITCH** and **LIGHT TENSION**, so that there will be sufficient thread in the seam to allow the goods to stretch.



## Relative Sizes of Needle and Thread

SIZE OF NEEDLE	CLASS OF WORK TO SEW	SIZE OF THREAD OR SILK
0	Very Thin Muslin, Cambrics, Linen, etc.	100 to 150 Cotton 000,00 Silk Twist
B	Very Fine Calicoes, Linens, Shirtings, Fine Silk Goods, etc.	30 to 100 Cotton Silk Twist
½	Shirtings, Sheetings, Bleached Calicoes, Muslins, Silk, General Domestic Goods, and All Classes of General Domestic 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, Mantels, etc.	30 to 40 Cotton D Silk Twist
3	Heavy Woolens, Tickings, etc., Heavy Coats, Trousers, etc. Heavy classes Generally	24 to 30 Cotton E Silk Twist 60 to 80 Linen

Exact Size of Needle for This Machine



The market is full of needles of inferior quality, made to sell cheap. We cannot guarantee satisfactory results if a cheap, inferior grade of needles are used.

Skip stitches and broken thread are almost always due to a poor needle. Therefore, be sure to use genuine needles, which you can get from the dealer from whom you purchased this machine, or direct from us.

**THE NEEDLE IS MEASURED FROM THE TOP OF EYE TO THE EXTREME TOP OF THE SHANK.** In case you are obliged to buy substitute needles, better lay the needle on the above illustration to see that it is correct length.

When sewing two thicknesses of calico, shirting or ordinary work, No. 70 thread and No. ½ needle will produce a beautiful stitch which is very firm and is strong enough for this class of work.



### To Adjust the Automatic Lift

When the machine is open the head should be level and even with the table. If the head should sag below the surface of the table at the rear edge of the head, this can be overcome, as shown in the illustration, by turning to the right just a little the automatic lift adjusting nut and locking with the lower or lock nut.

### Caution

The leverage of the lid on the automatic lift is powerful and the adjustment very sensitive; therefore, if the above adjustment is set up too much the lift chain will be broken. Move the adjusting nut a little at a time, and after changing the adjustment, raise the head to sewing position, that you may see that the adjustment is not too tight.



# Important Instructions

## Things You Should Not Do

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- FIRST**     *Do not make unnecessary adjustments.*
- SECOND**     *Don't tamper with the adjustments or allow repairers or others to attempt to repair your machine, unless you are sure they are capable.*
- THIRD**     *Don't run the machine when it is threaded without cloth under the presser foot.*
- FOURTH**     *Do no pull on the cloth in your effort to help the machine feed faster. It will cause the needle to be broken. Let the machine do its own feeding.*
- FIFTH**     *Don't try to use the attachments until you are thoroughly familiar with plain sewing and can handle the machine easily.*
- SIXTH**     *Don't buy cheap imitation needles and expect to do nice work.*
- SEVENTH**     *Don't think that cheap basting cotton will produce as good work as good thread.*
- EIGHTH**     *Don't use poor oil on your machine.*

PRICE LIST (Continued)

C	803	Brake Collar Dowel Pin	.04
C	804	Take-up Shaft Head Link Pin (See No. 409A)	.02
C	805	Tension Release Pin	.03
C	806	Spool Pin	.06
ME	816	Spring Pin (For M. E. Electric)	.10
C	819	Presser Bar Lift Bracket Guide Pin	.04
C	820	Presser Bar Lift Lever Pin	.04
C	821	Bed Dowel Pin	.06
C	822	Face Plate Thread Guide Rivet	.02
C	823	Take-up Stud Rivet (See No. C-409A)	.02
C	824	Shuttle Carrier Spring Rivet (See No. C-412BA)	.02

STUDS, PLUGS, ETC.

C	900	Face Plate Stud	\$ .08
C	901	Take-up Stud (See No. C-409A)	.18
C	904	Tension Stud	.25
M	905	Shuttle Bell Crank Stud	.30
M	911	Shuttle Pitman Screw Stud	.16
M	913	Feed Fork Connection Screw Stud	.16
C	915	Bobbin Winder Spindle Stud	.12
M	922	Feed Dog Carrier Roll Stud	.16
M	923	Feed Fork Connection Stud	.16
C	925	Spool Pin Sleeve	.10
C	935	Bobbin Winder Puller Screw	.14
C	940	Needle Clamp only	.35
C	940A	Needle Clamp Assembled (includes C-940 and C-609)	.35
K	945	Head Latch Plunger	.10
C	950	Needle Bar Hole Plug	.07

NUTS

C	1000	Presser Foot Lock Nut	\$ .20
C	1001	Tension Stud Nut	.10
C	1002B	Bobbin Winder Worm Wheel Screw Nut	.05
C	1003	Bobbin Winder Spindle Nut	.10
C	1005	Wrist Wheel Block Stud Nut, Feed Bar Guide Screw Nut and Pitman Stud Nut	.05
K	1008	Fork Fulcrum Screw Nut	.06
M	1010	Shuttle Pitman Eccentric and Feed Fork Connection Nut	.06
M	1011	Feed Rock Shaft Screw Center Nut	.10

SPRING AND MISC.

C	1100	Presser Bar Spring	\$ .10
C	1101	Shuttle Tension Spring (See No. C-310A)	.12
C	1102B	Shuttle Carrier Spring (See No. C-412BA)	.10
C	1105	Tension Spring (Beehive shape)	.10
C	1106	Thread Check Spring	.12
C	1107	Head Latch Spring	.05
C	1108	Bobbin Winder Distributing Lever Spring	.07
C	1109	Bobbin Winder Spindle Spring	.05
C	1112	Bobbin Winder Friction Spring	.08
C	1115	Shuttle Ejector Spring (See No. C-412BA)	.05
C	1125	Face Plate Thread Guide (See No. C-400A)	.06
CE	1126B	Wire Guide (For ME Electric)	.10
C	1130	Needle Bar Thread Guide	.15
C	1245	Thread Cutter	.06



PRICE LIST (Continued)

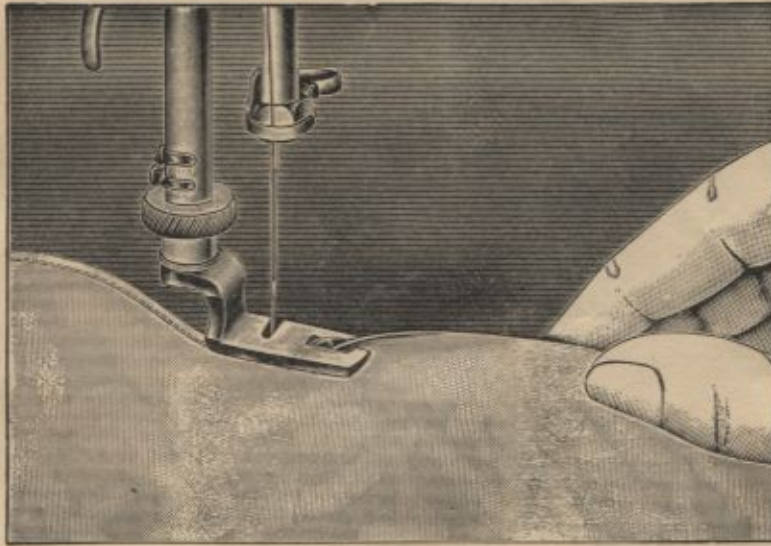
C	415	Bobbin Winder Worm Wheel only	\$ .40
C	415A	Bobbin Winder Worm Wheel Assem. (includes C-415, C-417 and C-606)	.40
C	416	Bobbin Winder Distributing Lever	.20
C	417	Bobbin Winder Heart Cam (See No. C-415A)	.15
C	420	Presser Bar Lift Lever	.15
C	421	Thread Check Spring Stop Arm (See No. C-227A)	.06
C	422	Brake Collar Clutch	.08
C	423	Tension Tripod	.06
C	424B	Tension Release Lever	.08
K	427	Head Latch	.35
C	433	Presser Bar Spring Washer	.04
C	434	Tension Release Washer	.04
C	436	Stitch Regulator Friction Screw Washer	.04
M	447	Shuttle Pitman only	.30
M	447A	Shuttle Pitman Assembled (includes M-320, M-447 and M-911)	.50
M	449	Feed Regulator only	.50
M	449A	Feed Regulator Assem. (includes M-449, M-913, M-923)	.70
M	490	Feed Regulator Washer	.02
ME	495	Motor Tension Spring Plate only (For ME Electric)	.06
ME	495A	Motor Tension Spring Plate Assembled (includes ME-495 and ME816) (For ME Electric)	.10

SCREWS

C	600	Face Plate Thumb Screw	\$ .10
C	601	Feed Point Screw and Shuttle Carrier Screw	.06
K	601	Wire Guide Screw (For ME Electric)	.06
C	602	Belt Guard Screw and Motor Tension Spring Plate Screw	.06
C	603	Thread Cutter Screw	.06
C	605	Bobbin Winder Worm Wheel Screw	.10
C	606	Bobbin Winder Heart Cam Screw	.06
C	607	Bobbin Winder Distributing Lever Screw	.10
C	608	Bobbin Winder Friction Screw	.06
C	609	Needle Clamp Screw (See No. C-940A)	.10
C	610	Needle Bar Thread Guide Screw	.06
C	611B	Needle Bar Link Stud Screw (See No. C-409A)	.06
C	611B	Presser Bar Lift Bracket Set Screw	.06
C	612	Take-up Needle Bar Link Screw (See No. C-409A)	.10
C	615	Needle Plate Screw	.06
C	616B	Shuttle Ejector Screw (See No. C-412BA)	.06
C	618	Thread Check Spring Stop Arm Set Screw (See No. C-227A)	.06
C	619	Tension Release Screw	.06
C	620	Take-up Shaft Head Link Screw (See No. C-409A)	.10
C	621	Take-up Angle Link Stud Screw (See No. C-409A)	.10
C	632	Stitch Regulator Friction Screw	.06
C	640	Shuttle Tension Spring Screw	.06
K	643	Head Latch Screw	.06
K	650	Fork Fulcrum Screw, Long	.10
K	650A	Fork Fulcrum Screw Assem. (includes K-650 and K-1098)	.20
K	654	Bed Screw	.06
C	655	Hand Wheel Brake Button Screw	.06
M	670	Feed Fork Connection Hinge Screw	.26
M	671	Arm Rock Shaft Adjusting Screw	.10
M	672	Shuttle Pitman Screw Stud Eccentric Screw	.08
M	673	Feed Dog Carrier Roll Screw	.08
M	674	Feed Regulating Thumb Screw	.50
M	675	Shuttle Bell Crank Stud Collar Set Screw	.02
M	676	Feed Cam Screw	.06
M	677	Feed Dog Carrier Center Screw only	.08
M	677A	Feed Dog Carrier Center Screw Assembled (includes M-677, C-1005)	.12
M	678	Feed Rock Shaft Center Screw only	.12
M	678A	Feed Rock Shaft Center Screw Assembled (includes M-678, M-1011)	.12
SV	701	Head Hinge Set Screw	.06

PINS, RIVETS, ETC.

C	800	Main Shaft Head Pin	\$ .04
C	802	Feed Rock Shaft Crank Pin	.04

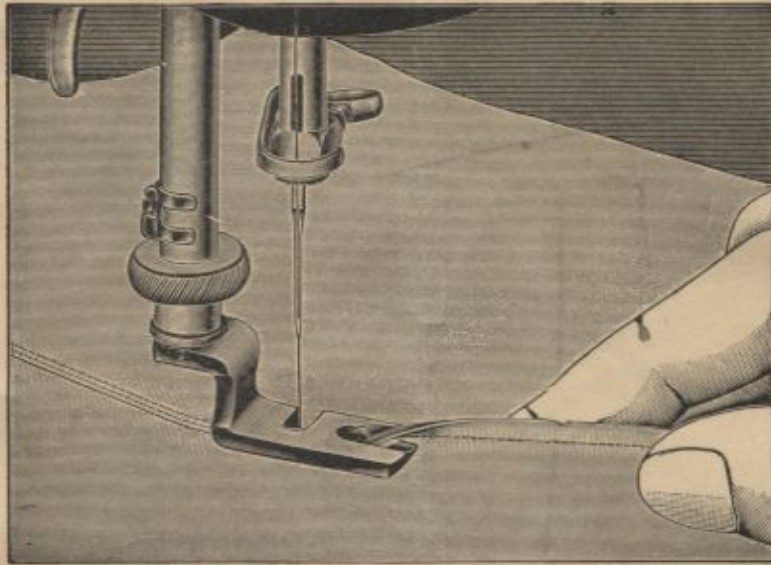


## Narrow Hemming

Remove the presser foot and insert in its place the foot hemmer. Raise the presser bar lifter. Clip off the right-hand corner of the cloth and turn up the edge about one-quarter of an inch, so as to enable it to pass easily into the scroll of the hemmer. Push it forward to the needle. Let the hemmer down and start the machine. Gently hold back on the work and keep it smooth and allow the edge of the goods to pass between the thumb and forefinger of the right hand while it is being hemmed (see illustration above), keeping the goods rolled up on the edge as it passes into the hemmer. Should the edge of the goods begin to run out of the hemmer, move the hand to the right. If too much cloth turns in, then carry it to the left.

In hemming a curve on flannel or very elastic goods, draw gently on the edge being hemmed, resisting the feed slightly and guiding the work accordingly.





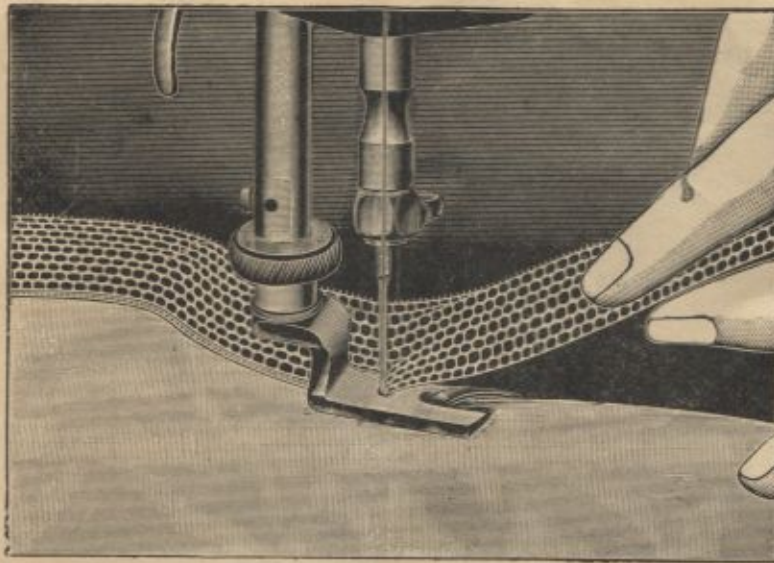
### Felling

To make a felled seam, stitch two pieces of cloth together, the under one projecting  $\frac{1}{4}$  inch beyond the upper; sew as closely to the upper edge as security permits; then open the work flat, draw the wide edge of the seam into the scroll of the hemmer and feller. Proceed as in ordinary narrow hemming, taking care to keep the fold smooth.

### French Seam

This is made by sewing the edges of two pieces of cloth together, making a hem in one and sewing the edge of the second piece securely within it.

French seam is either made with the smallest hemmer or the foot hemmer. The hem is formed as described for these two attachments. Before lowering the presser bar, the second piece of cloth is inserted in the hem well inside the line of stitching, but not far enough to be folded over with the hem. Lower the presser bar and proceed to sew, keeping the edge of the two pieces of cloth parallel.

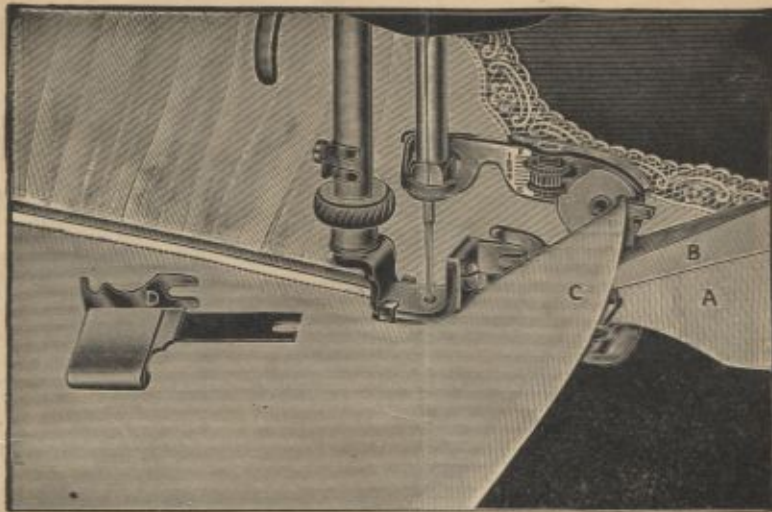


## Hemming and Sewing On Lace

### One Operation

The hemmer and feller which accompanies this machine is made with a slot for the needle to pass through instead of a round hole, as in most of the attachments. This slot is to enable the operator to make a hem and sew on lace at the same time. Proceed as follows: First start a narrow hem, and when the goods are well under control and passing smoothly into the hemmer, stop the machine, raise the hemmer with presser bar lifter, raise the needle to its highest point, and then carefully pass the end of the lace through the slot in the side of the hemmer, carrying it under the back of the hemmer and on top of the hem. Then lower the hemmer and proceed as in ordinary hemming. Guide the lace over the front of the hemmer, keeping it well in the slot so that the needle will catch it every time it passes into the goods.



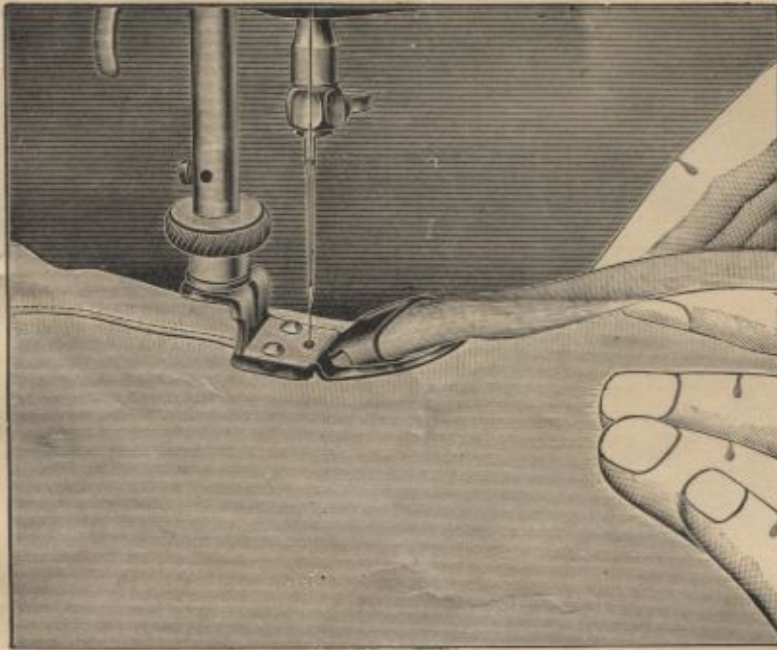


### To Sew On and Gather with Piping

Remove plate (D) from bottom of ruffler and substitute shirring plate shown on page 20, in place of front slide. Insert piping (B) in gauge attached to upright back of needle. Fold material (C) to be

stitched  $\frac{1}{4}$  inch full length of piece and insert in open slot above piping. Goods (A) to be gathered is inserted between blade on ruffler and shirring plate and extends to the right of attachment.

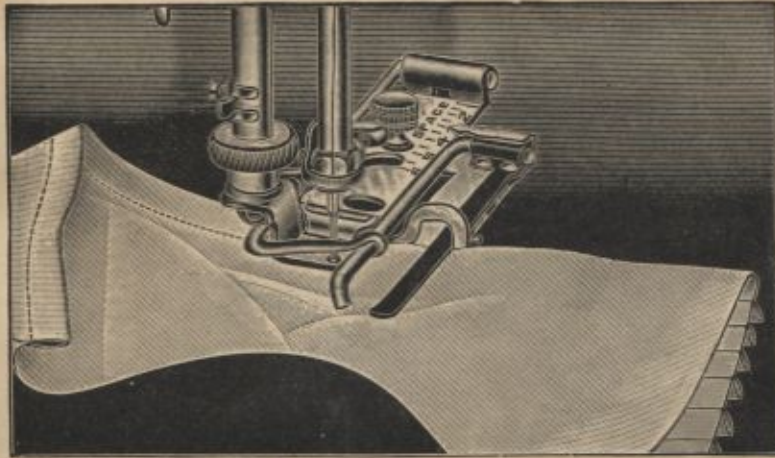
Operate machine slowly, guide work with both hands, so piping will be evenly laid between upper goods and ruffle.



## Wide Hemming

Substitute the wide hemmer in place of the presser foot. Raise the needle to its highest point, insert the goods into the hemmer, draw it back and forth until the hem is formed, stopping with the end under the needle. Lower the presser foot and commence to sew, being careful to guide the cloth so as to keep the hemmer full.





## The Tucker

When attaching the tucker, be careful to have it pushed back on the bar as far as it will go, noting that it is securely clamped by the nut that holds it in place.

A test should be made by turning the hand wheel slowly towards you and see that the needle passes through the hole in the attachment foot without interfering. If the needle should happen to rub the attachment in passing the hole, it would probably cause skipping or looped stitches or broken thread.

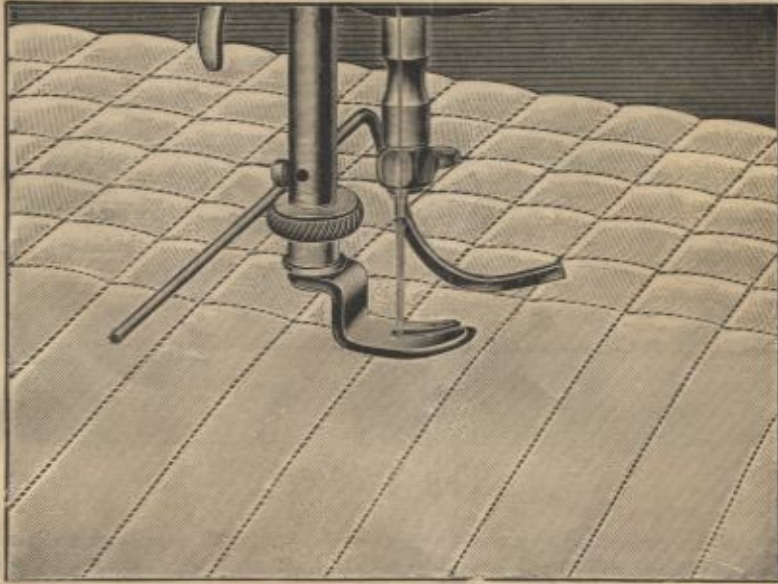
The width of the tuck is determined by the gauge on the tucker frame at the right of the needle hole, its indicator point showing on the back edge of the tucker frame.

The distance between the tucks is regulated by moving the creaser bar, which extends out to the left of the needle, the scale being shown on the front edge of the tucker frame. Both gauges are held in place by the thumb screw on top of the tucker frame.

## To Operate the Tucker

Make the first fold in the usual manner by hand. Pass the folded edge under the spring on the marking plate, with the part that is to be tucked on the top. Draw to the right until the edge comes against the gauge, and from you until it covers the feed. Lower the presser foot and sew as usual, being careful to keep the folded edge against the guide. Fold carefully the crease in making substituting tucks and proceed as before. After the first tuck has been made, the edge of each preceding tuck should pass under the small prong on the tucker directly underneath the marker. By placing the cloth in this position it will not be necessary to guide the work.

**WHEN MAKING THE LAST TUCK**, the lever, upon which the needle clamp strikes, should be turned up and back, to avoid making a mark where a tuck is not desired.



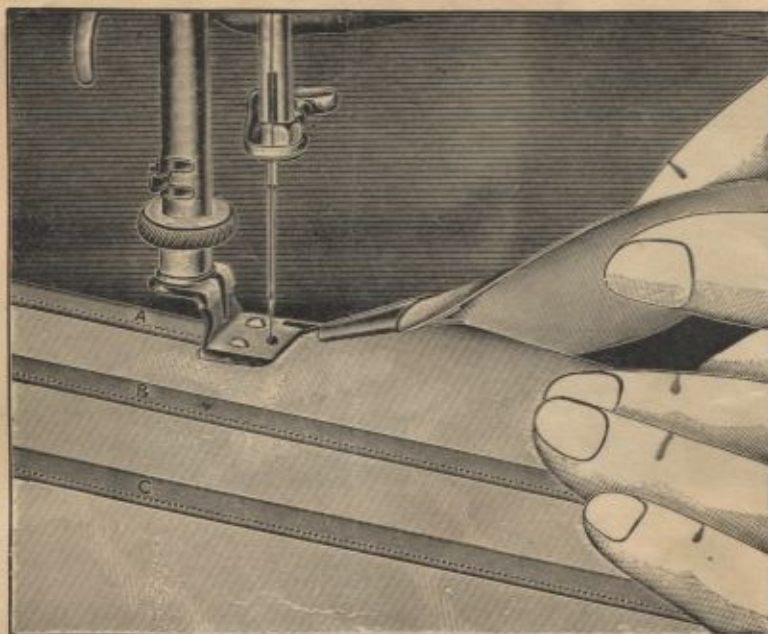
## Quilting

Insert the quilter through the small hole in the lower end of the presser bar. Move the quilter guide as far from the needle as the distance required between the rows, raising the guide high enough to allow the goods to pass under freely, then fasten firmly, with **THE SMALL** set screw.

## To Quilt

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 row steadily under the guide.





### The Binder

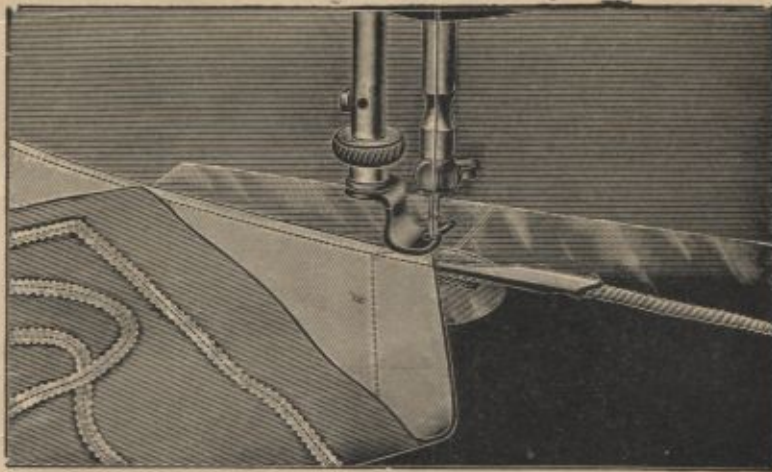
Substitute the binder in place of the presser foot. If bias binding is used, it must be cut  $\frac{7}{8}$  inch wide. Draw the binding through the scroll of the binder and pass the edge of the material to be bound between the folded edges of the binding. (See illustration A.)

### To Make French Folds

Proceed as directed for binding, except that the fold is stitched onto the face of the material instead of on the edge. (See illustration B and C.)

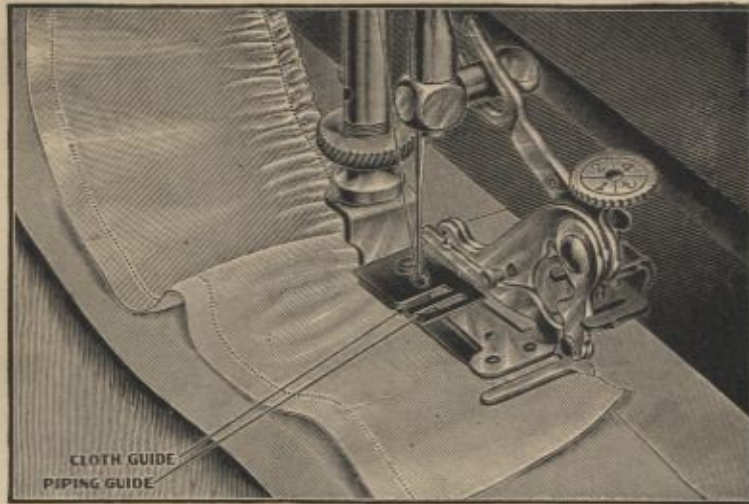
### To Bind with Dress Braid

Proceed the same as when using bias binding, as explained above. The only difference is, the dress braid being narrower, the edges will not be turned under.



### Under Braiding

Insert the braider foot in place of the presser foot. Attach the braider foot plate to the bed of machine, placing the little prong into the hole in the front slide and the downwardly bent part between the slides. Next, draw the braid through the tube a little past the needle. The pattern to be braided should be stamped on the wrong side of the cloth.



## The Ruffler

When attaching the ruffler, place the fork of the ruffler lever over the needle clamp shoulder and then push the attachment on the presser bar as far as it will go and clamp it securely by the nut that holds in place. (See illustration.)

A test should be made by turning the hand wheel slowly towards you to see that the needle passes through the hole in the attachment foot without interfering. If the needle should happen to rub on the attachment in passing the hole it might cause the machine to break thread or skip stitches.

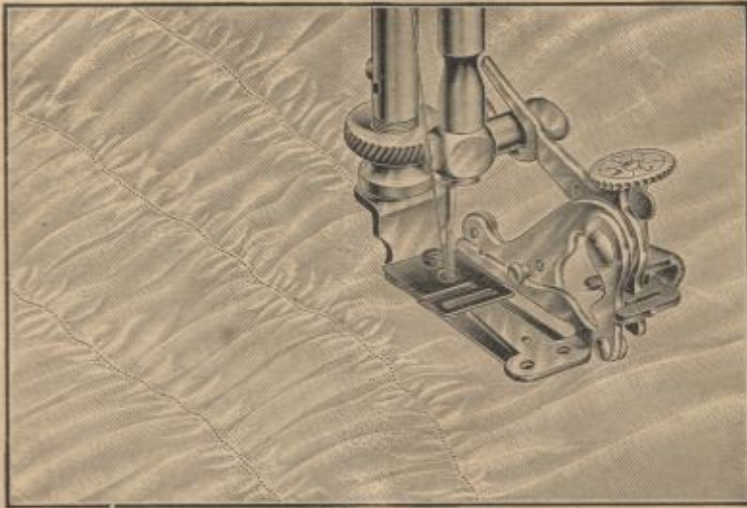
The fullness of the ruffle is determined by the adjusting screw on the ruffler lever. To make a full ruffle, turn the screw forward or to the right. To make it less full, turn towards you or to the left. If more plaits to the inch are required, shorten the stitch on the machine, also the stroke of the ruffler blade, the latter being done by turning the ruffler adjusting screw forward or to the right.

The material to be ruffled must be drawn between the blue metal blades on the ruffler.

## To Ruffle and Set On

Place the cloth to be ruffled between the separator plate and the shirring blade, the cloth between the separator plate and the feed and proceed as in ruffling.





## Shirring

The quilter is used as a guide to regulate space between lines of stitching. Fold and slightly crease the goods through the center as a guide for the first line of stitching; then stitch along the folded crease, making the desired fullness by adjusting the regulator nut and the length of stitch. In shirring it is always best to run a small tape underneath the shirring plate next to the feed, running it through one of the gauges in the shirring plate. This forms a stay and requires no attention.

**SPECIAL  
INSTRUCTIONS**

FOR

**ELECTRIC  
MACHINES**

8

## INSPECTION

After the machine is unpacked, examine carefully both the sewing machine and the motor to see that no damage has been done during shipment and that the shaft of the motor and the hand wheel of sewing machine turn freely.

## MOTOR VOLTAGE

The voltage for which the motor is designed is given on the name plate attached to the motor. Check this carefully to determine that it corresponds with the voltage of the circuit from which it is to be operated. The motor will operate satisfactorily on any voltage within 10 per cent of that shown on the name plate.

## ABOUT REPAIRING THIS MACHINE AND MOTOR

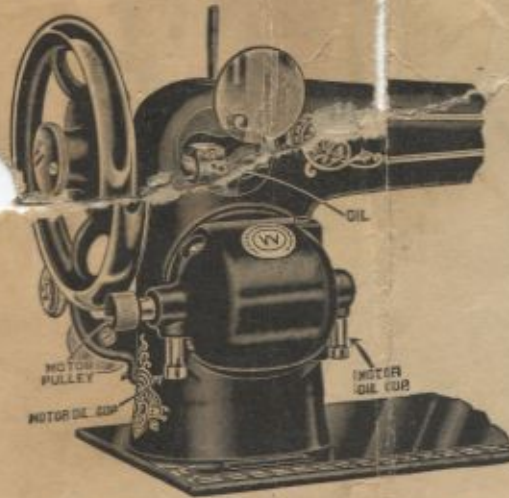
Should you find it necessary to have the head of the machine repaired, DO NOT allow the agent offering some other machine for sale, or the handy man about town, to make any adjustments. They generally do more harm than good. If you cannot determine the remedy from the instructions in this book, address a letter describing trouble to us.

## SEWING MACHINE FACTORY, ROCKFORD, ILL.

Should trouble develop with motor or wiring, consult the local electric shop from whom you purchased this machine or address your letter of information to us as above, giving number of motor and full particulars.



## Motor Lubrication



The motor on this machine is lubricated by means of grease contained in the small cups under the motor bearings which are indicated by the arrows. This grease is fed to the motor shaft through felt wicks held in contact with the shaft by wire springs contained in the cups.

To replenish the lubricant, unscrew the cups and fill them with a good grade of unmedicated vaseline. Then replace the cups, making sure that the small felt wick is in contact with the motor shaft and that the cups are securely screwed in place to prevent leakage of grease.

The cups should be removed and filled as described every one or three months, depending on the amount the sewing machine is used.

THE OIL SUPPLIED FOR THE OTHER PARTS OF THE SEWING MACHINE IS NOT SUITABLE FOR THE MOTOR BEARINGS AND SHOULD NEVER BE USED IN THE CUPS.

Good lubrication of the bearings is of prime importance to the successful operation of any electric motor and if the above instructions are followed the motor should have a practically indefinite life.

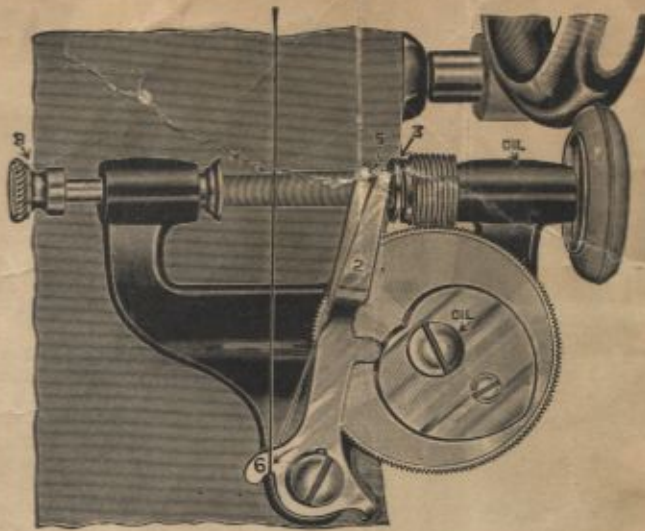
If for any reason extra parts of the motor or sewing machine are needed at any time write to Sewing Machine Factory, Rockford, Ill., giving full particulars as to parts wanted together with the style number and voltage shown on the name plate attached to the motor.

## To Start the Motor

After connecting the cable to the lamp socket or electrical outlet, gradually press the speed controller until the sewing machine starts. If machine does not start readily on heavy goods when motor pulley revolves, take hold of hand wheel and turn it forward; the motor will then keep machine running. The controller provides for several speeds of the sewing machine—the harder you press the faster the speed. A little practice with the manipulation of the controller will make it easy to obtain any desired speed from very slow to as high as you can sew.

If the motor does not start, examine the electrical connections to see that they are tight and be sure that all switches, both in the wall and at the lamp socket, are turned on. Sometimes house wiring is arranged with a switch in the wall for turning on or off all of the lights in the room and in addition to this there may be a key switch at each lamp socket. It is, of course, necessary that both of these switches be turned on before the current will be available at the sewing machine.

The knee operated controller on desk and console models can be swung up or down to suit operator.



HOLD HAND WHEEL WITH LEFT HAND AND WITH THE RIGHT RELEASE THE CLUTCH, TURNING IT HALF WAY AROUND. THIS WILL PERMIT THE LARGE WHEEL TO RUN FREE. PUSH BOBBIN WINDER UP UNTIL IT COMES IN CONTACT WITH AND BEARS GENTLY AGAINST WHEEL.

TURN THE MACHINE UNTIL THE DISTRIBUTING LEVER (2) IS AS FAR TO THE RIGHT AS IT WILL GO. Place one end of the bobbin in the socket (3) on the right side and the other end of the bobbin in the socket (3) on the left side. To do so, pull the plunger nut (8) towards the bobbin, letting it spring back in place, which will hold the bobbin in the winder. Catch the end of the thread between the brass end of the bobbin and the socket (3) of the shaft on the right side. Place thread over the top of lever (5), then down through notch (6) in bottom of lever.

**NOTE**—Place the spool on spool pin and hold the thread, letting it run straight towards you from the spool over your finger and down to No. 6 guide on the bobbin winder, or the same results may be had by letting the thread run from the spool over the thread guide at top of face plate and then to No. 6. The illustration shows the thread being held in the hand above the bobbin winder.

When through winding bobbin, pull winder away from wheel and tighten clutch nut.

**WINDING THE BOBBIN CORRECTLY HAS A VERY IMPORTANT PART IN FORMING A PERFECT STITCH. PRACTICE THIS AND I LEARN TO DO IT WELL.**