

SINGER

Student's
Manual of

**MACHINE
SEWING**



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SINGER*

Student's Manual

OF

Machine Sewing



SPECIALLY PREPARED
FOR STUDENTS
IN SCHOOLS AND COLLEGES

PUBLISHED BY
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THE SINGER MANUFACTURING COMPANY

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PREFACE

One aim in education is to equip the scholar for his or her future career. To the girl interested in Household Economics the sewing machine offers wonderful possibilities. This booklet is to instruct her regarding the care and operation of the Family Sewing Machine to obtain best results.

A large part of the family income is usually spent by the woman, and her knowledge of how to plan and make proper clothing for the family has a great influence on the purchasing power of the income. By making garments at home it is possible to provide wearing apparel for herself and for those for whom she must provide, at a cost that will not only be in keeping with her purse but it will give satisfaction and pleasure to the wearer.

Success in home sewing depends greatly on the ability to use to the fullest extent the modern sewing machine and its various attachments. The cost of material for making a garment is usually one-half to one-third the amount asked for a similar one ready made. The styles of today can easily be followed and, with the help of charts that are furnished with many of the patterns, the cutting is very simple. The modern electric sewing machine takes away all the labor of stitching. By using the attachments furnished with it, fashion touches may very quickly be added without previous basting or preparation.

When one considers that the stitching for a garment may be done very quickly and entirely without effort on the electric machine, is it any wonder the woman of today is becoming more and more interested in home sewing?

It is our hope that the instructions contained in this booklet will enable you to learn the proper care and operation of your sewing machine, so that you can obtain the greatest benefit from its use.

SINGER SEWING MACHINE COMPANY

GENERAL INSTRUCTIONS FOR THE CARE AND OPERATION OF FAMILY SEWING MACHINES

The Principal Parts of Lock-Stitch Sewing Machines and Their Uses

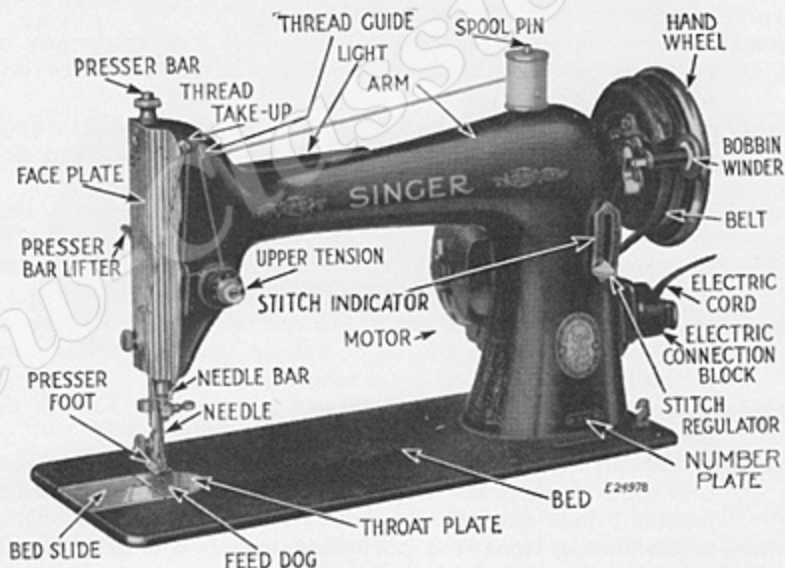


Fig. 1. Principal Parts of the Head
Class 66 Machines

Head—the complete sewing machine, without cabinet or stand, as shown in Fig. 1.

Arm—the curved part of the head containing the mechanism for driving the needle and handling the upper thread.

Spool Pin—spindle on which spool rests.

Bed—the flat portion of the head, under which is mounted the shuttle, feed and lower thread-handling mechanism.

Hand Wheel—the wheel at the right of the head driven by the belt.

Bobbin Winder—the mechanism for automatically winding bobbins.

Stitch Regulator—the part which controls the stroke of the feed dog, thereby regulating the length of the stitch.

Upper Tension—the means for controlling the delivery of the upper thread from the spool.

Thread Take-up—the mechanism which pulls up the slack in the thread and locks the stitch.

Thread Guide—supports the thread in its passage from the spool to the tension disc.

Needle Bar—the vertical bar to which the **needle** is attached and which moves the needle with the upper thread down through the fabric at each stitch.

Presser Bar—the vertical bar to which the **presser foot** is attached. This bar passes through a coil spring which exerts a pressure on the bar and holds the fabric down against the feed dog when sewing. The presser bar and foot may be raised by means of the **presser bar lifter**.

Face Plate—the vertical plate on the left of the arm which may be removed to give access to the needle bar, presser bar and take-up.

Throat Plate—the plate in the bed directly under the needle through which the needle passes and through which the feed dog projects upward.

Feed Dog—the toothed part which projects upward through slots in the throat plate, moving the fabric at each stitch. The stroke of the feed dog is controlled by the stitch regulator to give the desired length of stitch.

Bed Slide—the flat plate at the left of the bed which may be opened to give access to the shuttle or bobbin case and other parts of the lower stitch-forming mechanism.

Bobbin—the metal spool on which thread is wound to furnish the lower or under thread supply.

Shuttle or Bobbin Case—the container in which the bobbin is placed and around which the loop of the needle thread is passed to form the lock stitch.

Rotary or Oscillating Hook—the part which enters a loop of needle thread and carries it around the bobbin case to form the lock stitch. In the long bobbin machine (SINGER No. 127) this function is performed by the shuttle, which also acts as a bobbin case.

Lower Tension—the spring on the shuttle or bobbin case which controls the delivery of thread from the bobbin.

Motor—the electric motor drives the machine by means of a belt. It is attached by a single screw to the back of the arm.

Sewing Light—the electric lamp and reflector which throws its rays on the bed of the machine.

Three-Pin Terminal—the plug and socket arrangement which connects the electric supply cord to the motor, light and controller.

The 66 Class Machine, the principal parts of which are illustrated and described in the foregoing, is used extensively in schools and colleges throughout the country. However, newer types of lock stitch electric machines, that sew backward as well as forward, are now being sold to schools, and some of their features (different from those described above for the 66 Class Machine) are shown on **page 5**. The machine illustrated is the 15-91, while the deluxe rotary 201-2 Machine also possesses all the features mentioned.

SPECIAL FEATURES OF THE 15-91 AND
201-2 MACHINES

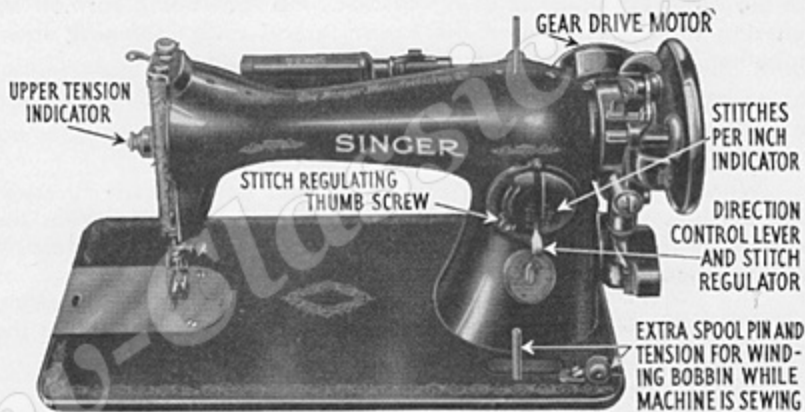


Fig. 2

Bobbin Winder—The extra spool pin and tension on the bed of the machine makes it possible to wind bobbins separately while the machine is in motion.

Stitch Regulating Thumb Screw—for controlling the space through which the Direction Control Lever is to move according to the number of stitches for which it is set on the stitch indicator.

Direction Control Lever—for reversing the direction of the feed and regulating the length of the stitch. When the lever is in the lower part of the slot, the machine will stitch in a forward direction. For reverse stitching, the lever is raised to its highest point.

Upper Tension Indicator—easily-read graduations denote different degrees of tension that can be produced. By noting the position of the indicator, the correct tension for a particular grade of work may readily be reproduced.

Feed Lowering Device—By loosening the thumb screw in the lower end of the feed lifting crank, the feed dog will be lowered below the throat plate so that it cannot interfere with the free movement of the work when darning or embroidering. For regular sewing, the feed may be restored to normal operation by firmly tightening the screw.

Motor—This motor is gear-driven, a spiral pinion of the motor meshing with a spiral gear on the hand wheel hub of the sewing machine, to produce a positive silent drive of the sewing mechanism.

Formation of the Lock Stitch

The lock stitch made by sewing machines consists of an upper or needle thread and an under or bobbin thread locked together in the material which is being stitched, the lock being formed by passing the upper around the lower thread and tightening them together in the middle of the fabric.



Fig. 3. Formation of the Lock Stitch

When a stitch has been completed and before each succeeding stitch is started, the fabric being stitched is carried from the needle by the feeding mechanism and upon the length of its movement depends the length of the stitch.

The presser foot holds down the fabric, prevents it from rising with the needle and holds it in contact with the feed dog while the feeding takes place.

Wind the Bobbins Evenly

A bobbin must be wound evenly to work properly in the machine. Great care should be taken in winding bobbins to have the thread placed on the bobbin smoothly and evenly, and the bobbin should never be wound so fully that it is tight in the bobbin case or shuttle. See Fig. 4. A correctly wound bobbin will insure a smooth-

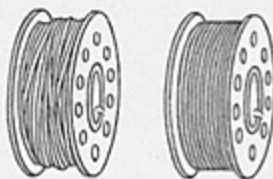


Fig. 4. Left Bobbin
Incorrectly Wound
Right Bobbin
Correctly Wound

running thread from the bobbin case and will prevent an uneven stitch which may occur if the thread is placed on the bobbin unevenly.

If, on bobbin winders of the type shown in Fig. 6, the thread winds to one side of the bobbin, call the nearest SINGER Shop and an adjuster will be sent to correct the trouble.

Always make it a point to have a sufficient quantity of bobbins on hand so that it is unnecessary to wind one color of thread on a partly wound bobbin of another color. Bobbins wound in this manner are often uneven, and the ends of the threads become tangled, causing considerable trouble in the bobbin case.

On Machines which have bobbin winder thread guide A, Fig. 5 fastened to bed of machine, bobbin winder is somewhat different. If thread does not wind evenly on bobbins of these machines, loosen screw which holds thread guide A, Fig. 5 in position and slide guide to the right or left as may be required, then tighten screw.

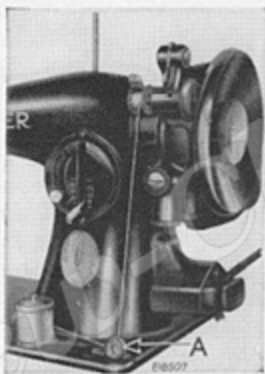


Fig. 5. Bobbin Winder Adjustment
on 15-91 Machine

Increasing the Pressure on the Bobbin Winder

If the pressure of the rubber ring against the hub of the hand wheel is not sufficient to wind the bobbin, loosen the adjusting screw (see Fig. 6) and press the bobbin winder lightly until the rubber ring is in contact with the hub of the hand wheel, then tighten the screw. This type of bobbin winder is found on Class 66 (on most varieties), 99, 115 and 15-30 Machines.

If the rubber ring becomes worn or if oil has been allowed to come in contact with the rubber, the ring will not have the proper contact with the wheel and will slip when attempting to wind a bobbin. A worn or oily ring should be replaced.

The bobbin winder on most of the SINGER family machines has an automatic stop which releases the winder from the hand wheel when the bobbin has been fully wound.

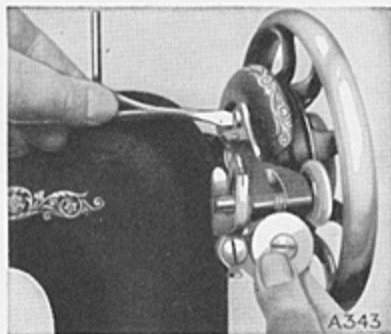


Fig. 6. Adjusting Pressure on Bobbin Winder

On machines having the type of bobbin winder shown in Fig. 7, if the pressure of the bobbin winder pulley against the hub of the hand wheel is insufficient for winding the bobbin, press down the bobbin winder until the latch A, Fig. 7 drops down and holds it, then loosen the adjusting screw F, Fig. 7. With the forefinger, push back the upper end of the slotted plate E as far as it will go, as shown in Fig. 7, and at the same time press the bobbin winder pulley against the hub of the hand wheel, then tighten the adjusting screw F.

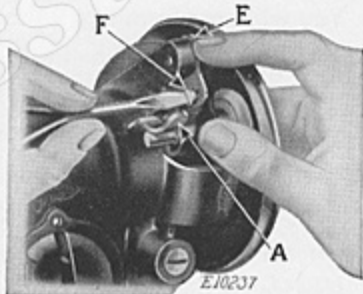


Fig. 7. Adjustment of Bobbin Winder

Importance of Correct Needle and Thread

A perfect stitch can be obtained only when the thread is selected to suit the fabric which is to be stitched and the needle is the correct size for the thread. If the needle is too fine for the thread and the material to be sewn, it is quite likely to break when crossing a seam. If a large needle is used on fine material, the perforations made by the needle will show on the finished work. A table of correct needles for the various sizes and types of thread is given on **page 63** of this book as well as in the instruction book for each machine. This table should be followed carefully when ordering needles and when changing them for various classes of work.

Note: For best results, use needles sold by Singer Sewing Machine Company.

Testing a Needle

An important essential for good work is that the needle be perfectly straight.

A straight needle can be determined by placing the flat side of the needle on the slide plate of the machine or any other perfectly flat solid surface. Hold the needle flat against the plate and hold the plate up to the light as shown in **Fig. 8**. A straight needle will show an even amount of light under it and the point will be in line with the shank, while the point of a crooked or bent needle will be closer to or further from the plate.

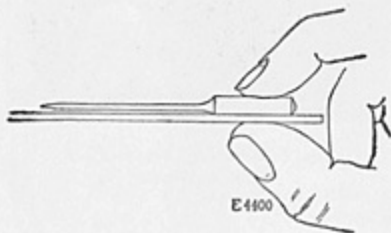


Fig. 8. Testing a Needle for Straightness

You will note from **Fig. 9** that the side of the needle with the flat on the shank has a short groove at the eye, while the other side has a long groove. On all machines, the thread must lie in this long groove when sewing. If the needle is not placed correctly in the machine, it will not sew.

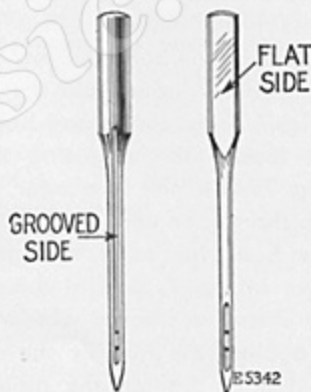


Fig. 9. Flat and Grooved Sides of Needle (Enlarged)

To Set the Needle Correctly

Turn the hand wheel over toward you until needle bar rises to its highest point. Loosen thumb screw of needle clamp and remove the old needle from machine. Place new needle in needle clamp, making sure that flat side of needle faces in the correct direction, which can be determined as follows:

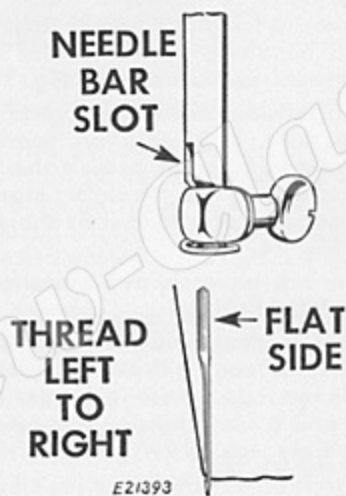


Fig. 10

On all machines having the needle bar slot at the left, as shown in Fig. 10, the flat side of needle must face the right and needle must be threaded from left to right (from long groove side). This applies to Machines 15-30, 15-86, 15-87, 15-96, 15-98, 66, 99, 101, 127 and 128.

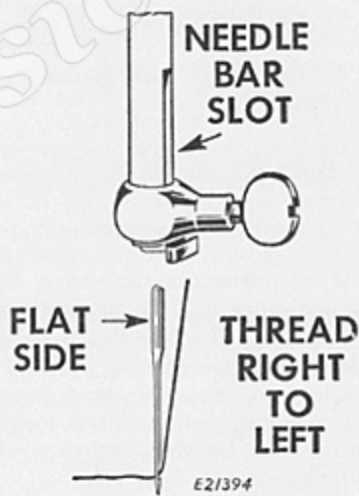


Fig. 11

On all machines having the needle bar slot at the right, as shown in Fig. 11, the flat side of needle must face the left and needle must be threaded from right to left (from long groove side). This applies to Machines 15-88, 15-89, 15-90, 15-91, 201, 221 and 301†.

The Necessity for Proper Tensions

The tensions on the sewing machine must be adjusted to suit various fabrics. There are two tensions, the upper and the lower. The upper tension controls the needle thread, while the lower tension controls the thread from the shuttle or bobbin case.

The definition of the word tension as given in the dictionary is: "stress by pulling." It is the pulling together of the threads that completes a stitch on the sewing machine. After the needle thread has passed around the bobbin case, the slack thread must be taken up and some tension placed on both upper and lower threads as they are drawn into the material and locked together.

†The needle clamp on Machine 301 will not permit needle to be inserted incorrectly.



Fig. 12. Both Tensions Correct



Fig. 13. Tight Upper Tension



Fig. 14. Tight Lower Tension

If both threads are under proper tension, the lock occurs in center of material being sewn and a perfect stitch is formed as in Fig. 12.

If tension on needle thread is too tight, or if that on bobbin thread is too loose, needle thread will lie along upper surface of material as illustrated in Fig. 13.

If tension on bobbin thread is too tight, or if that on needle thread is too loose, bobbin thread will lie straight along under side of material as shown in Fig. 14.

Fine materials require a light tension, while heavy materials require more tension to produce a perfect stitch.

If too tight a tension is used on fine material, the threads may break when material is pressed flat. A bias seam will pucker if tension is tight. If tension on a flat seam is too loose, there is danger of thread being pulled out. A long stitch and a loose tension are often used when basting, so that stitches may easily be pulled from material.

How to Adjust the Tensions

1. Turn hand wheel until take-up lever is at its highest position.
2. Pass upper thread between tension discs into thread take-up spring and through hole in take-up lever.
3. Lower presser bar, as needle thread tension is released when presser bar is raised.
4. Turn tension thumb nut B, Fig. 15 counter-clockwise until there is no tension on thread.
5. Draw sufficient thread from spool to provide a slack thread between spool and tension so as to remove weight of spool from thread while tension is being adjusted.
6. Turn tension thumb nut B, Fig. 15 clockwise to tighten tension while lightly drawing thread through take-up lever, until take-up spring is lifted and thread can be held in a straight line between take-up lever and tension discs without taking thread through tension discs.
7. Complete threading of machine for sewing.

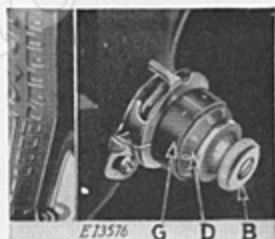


Fig. 15. Adjusting the Upper Tension

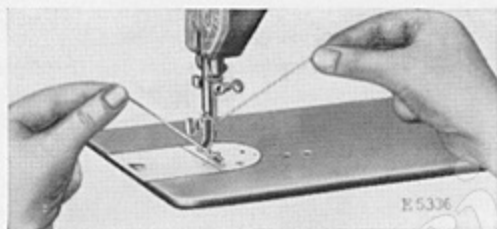


Fig. 16. Testing Upper and Lower Tensions Together

shuttle or round bobbin case. With a small screwdriver, turn screw to right to tighten or to left to loosen tension. Then a few stitches should be taken in a practice piece of material to see if stitch is locked in center of material. If bobbin thread shows on top, **Fig. 13**, under tension is too loose. If bobbin thread shows on bottom, **Fig. 14**, under tension is too tight.

With under thread tension properly adjusted, a variety of different sizes of needle threads can be used without disturbing tension on under thread, as the required change in tension to suit material being sewn can be made by adjusting tension on upper thread only.

Machines 15-88 to 15-91, 66-16, 201, 221 and 301 have graduated scales **D**, **Fig. 15** so that, when correct tension is found for a particular kind of work, it is only necessary to note number on scale to obtain same tension at any time.

Preparing to Sew

Pull sufficient thread through needle to start sewing, hold end of thread in left hand and, with right, turn hand wheel over until needle goes down and up again and under thread is pulled up through needle hole in throat plate. See **Fig. 17**.

Lay both threads back under presser foot diagonally across

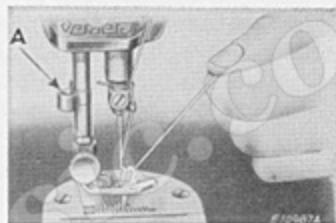


Fig. 17. Pulling up Under Thread

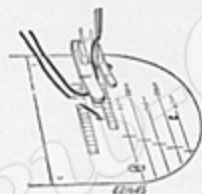


Fig. 18. Threads in Position to Start Sewing

feed as shown in **Fig. 18**, to the right or left depending upon which side of needle the material is to be located, so that when presser foot is lowered, the threads will be firmly held between feed and presser foot. **Note:** On some classes of family sewing machines, throat plate has distinct markings, as shown in **Fig. 18**, which are to guide edges of seams and hems. These markings, at $1/8$ " intervals from $1/4$ " to $3/4$ " in distance from right of needle, assist in guiding fabric uniformly. Cross-

lines on throat plate indicate pivot point of needle when turning square corners.

Edge of garment to be stitched should be placed just far enough under presser foot so that first stitch may be taken in material. Never place material so far in front of needle that first stitch will not be taken in material, as this may cause thread to become caught in bobbin case and material may not feed under foot properly unless edge has been caught with needle. Position needle into fabric where first stitch is to fall. Holding thread ends, lower presser foot, bringing tension into operation. This prevents thread from being caught in bobbin case. See **Fig. 19** for proper starting of material under presser foot.

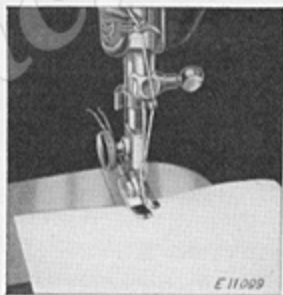


Fig. 19. Beginning a Seam

Finishing a Seam

When finishing a seam, never sew beyond end of material. Stop machine by placing hand on hand wheel shortly before end of seam is reached. This will prevent thread from becoming caught in bobbin case. See **Fig. 20**.

Do not attempt to release material from machine until take-up lever is at its highest point. See **T, Fig. 27**. When take-up is in this position and presser foot is raised, the tension is released.

Always take material from machine by pulling it straight back or away from you. This will prevent needle from becoming bent or broken.

Always have a sufficient length of thread to prevent its pulling through needle when you start to sew next seam. Pull material back from you far enough to allow upper and lower threads to enter thread cutter

A, Fig. 17. Hold thread with both hands and cut with a quick downward motion.



Fig. 20. Finishing a Seam

Hints for Sewing Various Seams

Always keep material to the left of presser foot, allowing seam to extend to the right. This helps to prevent machine oil from soiling goods and allows greater freedom of feeding than when garment is allowed to pass under arm of machine.

In stitching a skirt, all patterns are made so that the seams must be stitched from the top down. This is true of every seam in a garment. In stitching a blouse, the shoulder seams are stitched from the neck down, and the under-arm and sleeve seams are stitched from the armhole down. This is also true when sewing bias seams on a skirt. It should be stitched from the waist line down in order that the pattern will come together correctly. However, there are exceptions. For example when stitching pile fabrics such as velveteen and corduroy, always stitch with the pile, or from lower edge of skirt to waistline, etc.

When sewing a bias edge to a straight edge, place the straight edge against the feed. Hold the bias edge toward you in order to adjust and ease the fullness in to prevent its stretching.

The Seam Guide

The seam guide is a help in straight stitching. The guide is fastened to the machine by means of the thumb screw, as shown in Fig. 21. It can be adjusted to various distances from the needle as desired.

The first practice with the machine after understanding the threading, tensions, etc., is straight stitching. At first, use strips of paper without thread and then sew on muslin, stitching several rows close together. Always use a double piece of material when practicing stitching.

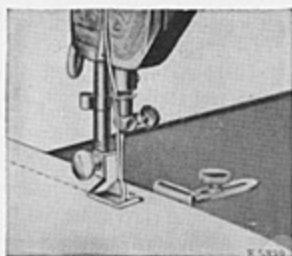


Fig. 21. Seam Guide

Regulating the Length of Stitch

The length of stitch should be regulated to suit the thread and material that is to be used. In other words, after giving all other conditions careful attention, do not spoil your sewing by using a stitch that is too long and coarse.

When stitching fine material, use a fine needle, fine thread and a short stitch. Heavy material requires a coarse needle and thread and a longer stitch.

Between 12 to 15 stitches to the inch makes a desirable stitch for ordinary sewing. To count the stitches, with machines on which the stitch length is not shown, sew on a double thickness of muslin, measure off one inch with a ruler and count the stitches.



Fig. 22. Stitch
Regulating
Screw on SINGER
66-4, 99-13, 127
and 128 Machines

The stitch on some of the early types of SINGER family machines is regulated by turning screw **S**, Fig. 22, to the right to lengthen the stitch and to the left to shorten it. The stitch on the 15-30 and 115 models is regulated by screw **S**, Fig. 23, in a slot on the arm near the bobbin winder. To lengthen the stitch, loosen the screw and move it downward. To shorten the stitch, move the screw upward. When the desired length of stitch is obtained, tighten the screw.



Fig. 23. Stitch
Regulating
Screw on SINGER
15-30 and 115
Machines

Regulating the Length of Stitch on Reverse Feeding Machines

Many of the later types of SINGER family machines are fitted with a reverse feeding mechanism by means of which the machines stitch in a reverse direction as readily as they do in a forward direction.

Machines 15-88 to 15-91 and 201. To change the length of stitch on these machines, loosen the thumb screw **A**, Fig. 24 and move it to the bottom of the slot. Then move the stitch regulating lever **B** until its upper side is in line with the number of the desired length of stitch. Now move the thumb screw **A** until the stitch regulating plate touches the lever **B**, then firmly tighten the thumb screw. The machine will then make the indicated number of stitches to the inch in either a forward or reverse direction, depending on whether the lever **B** is placed at its lowest or highest position.

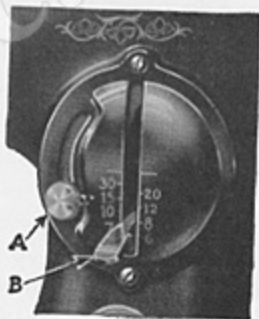


Fig. 24. Stitch Regulating
Lever on SINGER 15-88 to
15-91 and 201 Machines

To feed the material in reverse direction with the same length of stitch, raise the stitch regulating lever **B** as high as it will go. The direction of feed can be reversed at any point of a seam without removing the work from the machine.

Machine 221-1. To change the length of stitch, turn the thumb nut **B**, **Fig. 25** away from the stitch indicator plate **A** as far as it will go. Then move the stitch regulator lever **C** until it is in line with the number designating the desired length of stitch and turn the thumb nut **B** inward until it touches the indicator plate. The machine will then make the indicated number of stitches to the inch in either a forward or reverse direction, depending upon whether the lever **C** is at its lowest or highest position.

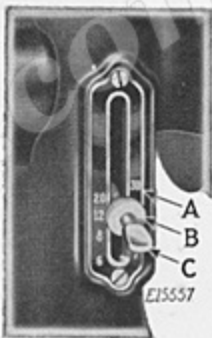


Fig. 25.
Stitch Regulating
Lever on 221-1
Machine

To feed the material in reverse direction, raise the stitch regulating lever **C** as high as it will go. The direction of the feed can be reversed at any point in a seam without removing the work from the machine.

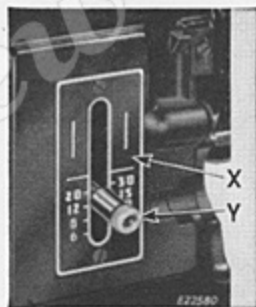


Fig. 26. Stitch
Regulator Lever on
301 Machine

Machine 301. To change the length of stitch, turn the thumb screw on the stitch regulator lever **Y**, **Fig. 26** away from the stitch indicator plate **X** as far as necessary. Then move the stitch regulator lever until it is in line with the desired number of stitches to the inch and turn the thumb screw inward **only** until it touches the stitch indicator plate. The machine will then make the indicated number of stitches to the inch in either a forward or reverse direction, depending on whether the lever **Y** is at its lowest or highest position.

To feed the material in reverse direction, raise the stitch regulator lever **Y** as high as it will go. The direction of feed can be reversed at any point of a seam without removing the work from the machine.

On Machines of Classes 66 and 99, fitted with reverse feed, the reverse feed should be used only for back tacking and not for continuous reverse feeding.

The direction of feed and length of stitch are regulated as instructed above for Machine 221, except that there is no thumb nut **B** on the regulating lever.

Reverse Feeding on Fine Materials

Although long seams may be made in medium and heavy materials on Machines 15-88 to 15-91, 201, 221 and 301, while feeding toward the operator, the reverse feed should be used only for short back tacking in thin or sheer goods. Such fine material will tend to pucker if the reverse feed is used for more than about 1/2 inch.

Adjusting the Pressure on the Presser Bar

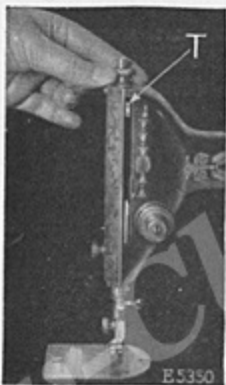


Fig. 27. Regulating the Pressure

The presser foot rests on the feed dog, holding the cloth in position while the machine is sewing. The pressure should be regulated according to the fabric to be stitched, heavy enough to prevent the material from rising with the needle and still enable the work to feed along smoothly. A pressure that is too heavy will cause the machine to run hard and will leave the print of the feed on fine materials.

Increase the pressure by turning the adjusting screw, at the top of the presser bar, to the right. Lighten the pressure by turning the adjusting screw to the left. See Fig. 27. The heavier the material, the more pressure is required except with pile fabrics (corduroy and velveteen) when a lighter pressure is advisable. Fine materials require a light pressure.

Cleaning and Oiling

Sewing machines require daily oiling and cleaning if they are used continuously all day. If used moderately, a few hours a day, oiling and cleaning once or twice a week is sufficient. A sewing machine, like all other machinery, will not give proper satisfaction if the working parts are allowed to become dry or gummed with a poor grade of oil. A sewing machine that has not received the proper care will run hard and considerable energy is wasted by using a machine in this condition. Always remove dust, lint, threads, etc., before oiling any part of the machine or stand, especially in and around the shuttle race.

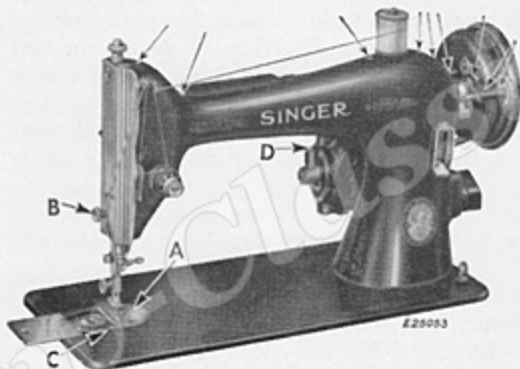


Fig. 28. Cleaning and Oiling the Head

Oiling the Machine Head

The equipment necessary for the proper cleaning of the machine consists of a piece of cheese cloth, a large screwdriver, a small screwdriver and a stiletto.

Care should be taken to use high-grade machine oil and one drop should be applied to each bearing and each point where there is any friction. It is poor economy to use oil of doubtful quality, as it may gum on the working parts.

It is best to be safe and purchase oil from the sewing machine manufacturer, who is interested in having it specially prepared for sewing machines. Many household oils are not suitable for sewing machine use.

When planning a thorough oiling, remove the upper thread, slide plate, bobbin, bobbin case, needle and presser foot. Take out the screws in the throat plate (the plate, A, Fig. 28, directly under the presser foot, through which the needle passes) and remove the throat plate. This will enable you to clean and oil the shuttle race. On the 66 and 99 Class Machines, the oscillating hook is lubricated by oil from a piece of red felt C, Fig. 28, which touches the top of the hook. This felt wiper should be kept moist with oil at all times.

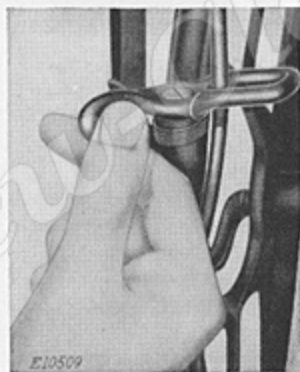


Fig. 29. The Belt Shifter

The face plate should also be removed by taking out screw B, Fig. 28 to give access to the oiling points on the needle bar, presser bar and thread take-up. Put one drop of oil into each oil hole and joint.

Release the belt from the band wheel by turning the lever of the belt shifter, Fig. 29, to the left while the machine is running. To replace the belt after releasing, place the feet on the treadle and start the band wheel in the proper direction. The belt will be thrown on the wheel automatically. Never throw the belt off to the left side of the band wheel, as it is difficult to replace it from this side.

After releasing the belt, turn back the head of the machine in order to reach the oiling points on the under side. By turning the hand wheel slowly you will be able to observe all working parts. Place a single drop of oil at each point, as this is sufficient to lubricate the machine. After oiling all points on the under side, lower the head into sewing position and oil each point on top of the arm. Wipe away all surplus oil, thread up the machine and stitch on a waste piece of material until all surplus oil that might drip onto the goods being sewn has been worked out.

When a machine is used frequently, it is not necessary to remove the throat plate, slide, bobbin and bobbin case each time the machine is oiled; but this should be done whenever a thorough cleaning and oiling is required.

Do Not Lubricate Motor on any machine except 15-91, 15-125, 201-2 and 221-1. To lubricate these motors, see instruction book accompanying these machines.

Oiling the Bobbin Winder

To insure smooth running of the bobbin winder, the oiling points should be observed and care taken to see that they are not neglected when the rest of the machine is oiled. See Fig. 30. If the winder is to be used immediately after oiling, do not sit in front of it. If too much oil has been applied, it is liable to be thrown and soil your clothes. Do not allow oil to come in contact with the rubber ring on the bobbin winder, as oil softens the rubber and causes it to slip on the hub of the hand wheel. When this happens, the only remedy is to replace the ring.



Fig. 30. Oiling the Bobbin Winder

Removing Gummed Oil

If the machine has been idle for several weeks and runs hard, it is probably due to gummed oil. When a machine has become gummed, all working parts should be thoroughly oiled with **SINGER*** Sewing Machine Oil. This will loosen the old oil if not too badly gummed. Run the machine rapidly for a few minutes and wipe thoroughly with a piece of cheese cloth. If the machine does not run freely after this treatment, it should be examined by a skilled sewing machine adjuster.

COMMON CAUSES OF MACHINE TROUBLES

Causes of Upper Thread Breaking

- Machine improperly threaded (see instruction book).
- Tensions too tight (see page 10).
- Needle bent or having blunt point (see page 8).
- Thread too coarse for size of needle (see instruction book).
- Needle too fine for size of thread and material to be sewn (see chart on page 63).
- Burr on needle hole in throat plate (caused by breaking needle when pulling material from machine).
- Burr on needle hole in presser foot (caused from sewing over pins or breaking needle).
- Needle incorrectly set (see page 9).
- Needle too long for machine, or not all the way up in clamp.
- Take-up spring bent or broken (send for adjuster to repair).
- Tension discs worn so that thread works in groove (send for adjuster to repair).

Causes of Lower Thread Breaking

Improper threading of bobbin case or shuttle (see instruction book).

Tension too tight (see **page 10**).

Thread wound unevenly on bobbin or bobbin wound too full (see **page 6**).

Spring on bobbin case or shuttle worn to sharp edge.

Burr on under side of throat plate (sometimes caused by sewing over pins or breaking needle).

To Avoid Breaking Needles

Do not sew heavy seams with too fine a needle.

Use proper size of needle for thread and material to be sewn (see chart on **page 63**).

See that the presser foot or attachments are securely fastened to the presser bar and that the needle does not strike the edge of the hole or slot in the presser foot or attachment.

Do not pull the material to one side when taking it from the machine. The needle may become bent and strike the side of the hole in the throat plate when starting to sew (see **page 8**).

Do not pull material when sewing. The needle may become bent and strike the back of the needle hole.

Do not bend the needle when pulling out the material before cutting thread (see **page 12**).

Do not use a needle that is too long. It is liable to come in contact with the bobbin case and break, probably spoiling the case and requiring replacement. (Use warranted SINGER needles in SINGER machines. See **page 63**).

Do not leave pins in the material after basting and do not sew over them with the machine.

Skipping Stitches

Needle blunt, bent or not correctly set into the needle bar.

Needle too small for the thread used.

Needle too short for the machine.

Stitches Looping

Looped stitches are usually caused by an improper tension. If the loop is on the **upper** side, it may be corrected by tightening the **under** tension. If the loop occurs on the **under** side, it may usually be corrected by tightening the **upper** tension (see **page 10**).

See that both the upper and lower threading is correct, that the thread is of good quality and the correct size for the needle.

Test both tensions and stitch on the same material to be sewn.

Looping of stitches is sometimes caused by the placing of the bobbin in the bobbin case or shuttle so that the thread pulls from the wrong side of the bobbin, or by the bobbin being wound too fully. (See instruction book.)

Machine Not Feeding Properly

Improper feeding is often due to the pressure being too light for the material to be sewn (see **page 16**).

The feed dog may be worn smooth. This may be determined by running the finger over the feed dog teeth. If they are not sharp, the feed dog should be replaced with a new one by a competent adjuster.

The stitch regulator may have been set so that the feed is entirely out of action.

On machines having a feed throw-out device, the feed throw-out thumb screw may not be tightened all the way.

Heavy accumulation of lint on top of feed dog or underneath throat plate. Remove throat plate to clean.

Machine Working Heavily

If the machine works heavily after standing, it is probably gummed and needs a general cleaning (see **page 18**).

The belt may be too tight and hence putting excessive pressure on the bearings.

Accumulation of gum and dirt around treadle and wheel bearings will cause treadle to work heavily.

Sometimes thread becomes wound around the hub of the hand wheel and the ends of the band wheel crank. With constant running and contact with oil the thread works in next to the bearings so tightly that it makes the machine run heavily. When this happens, remove the thread with a stiletto or other sharp instrument.

Puckered Seams

Tension is too tight.

Stitch too long for material being sewn, especially on fine material.

Wrong presser foot used. It is always best to use only the presser foot provided for each machine, as they are, in some cases, not interchangeable.

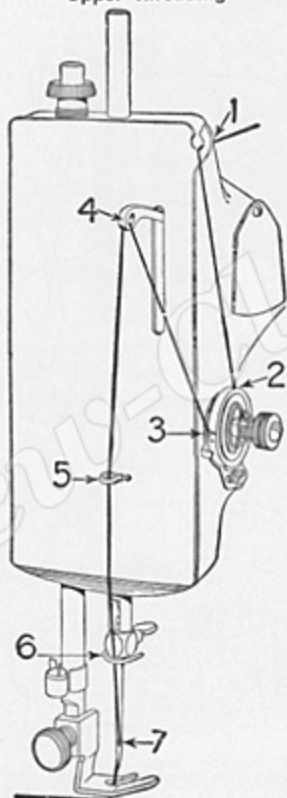
Noisy Treadle

If the treadle is noisy, the screws on which it is pivoted need tightening. Release one of the screws by backing off the nut one or two turns with a wrench, place a screwdriver in the slot of the screw and advance the screw toward the treadle just enough to take up the slack. Tighten the nut and test the treadle. If still noisy, repeat the operation on the other side.

If the types of sewing machine used in your school are different from those described in this book, refer to the instruction book accompanying the machine for particular details.

Threading Vibrating or Long Shuttle Machine No. 127

Upper Threading



Turn the hand wheel over toward you until the thread take-up lever 4 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 top of the face plate, down, under and from right to left between the tension discs 2, into the small wire spring 3 at the left of the tension discs, up and from front to back through the hole in the end of the thread take-up lever 4, down into the eyelet 5 in front of the face plate, into the lower wire guide 6, then from left to right through the eye of the needle 7.

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

Under Threading

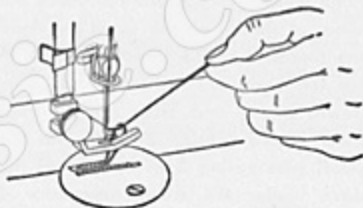
Hold the shuttle between the thumb and fingers of the left hand as shown. Place the bobbin into the shuttle with the thread drawing toward the right from the side of the bobbin nearest you.



Place the forefinger of the left hand on the end of the bobbin and draw the thread downward into the long slot in the shuttle as far as it will go.



Then draw the thread **straight upward** and under the tension spring until the bobbin begins to unwind.

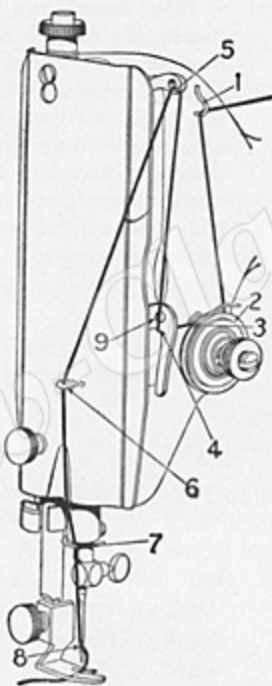


Drawing Up the Under Thread

With the left hand hold the end of the needle thread, leaving it slack from the hand to the needle, turn the hand wheel over toward you until the needle moves down and up again to its highest point, thus catching the under thread; draw up the needle thread and the under thread will come up with it through the hole in the throat plate. Lay both threads back under the presser foot.

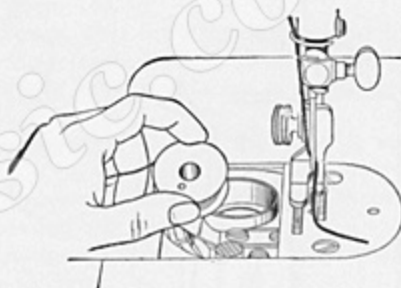
Threading Oscillating Hook Machine No. 66

Upper Threading

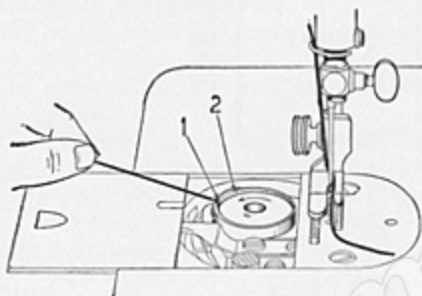


Raise the thread take-up lever 5 to its highest point by turning the hand wheel over toward you. Place the spool of thread on the spool pin; lead the thread into the thread guide 1 at the left and near the top of the arm, down, under and from right to left between the tension discs 2, into the small wire spring 3 at the left of the discs, under the thread regulator 4 at the left (not through the eye of the thread regulator 9 which is used only for darning and embroidery), up and from right to left through the eyelet 5 in the end of the thread take-up lever, down into the eyelet in front of the face plate 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 needle with which to start sewing.

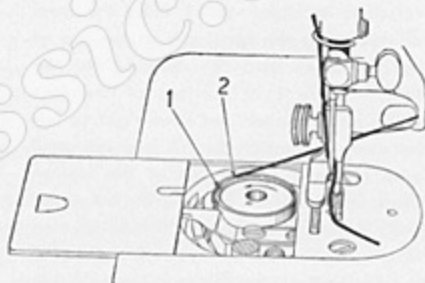
Under Threading



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



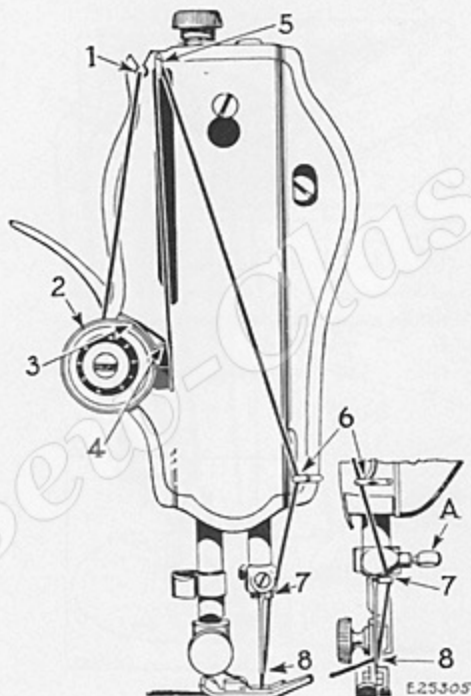
Place the bobbin into the bobbin case and draw the thread into the slot in the bobbin case at the left (see 1).



Draw the thread backward between the bobbin case and the tension spring until it reaches the notch (see 2), then pull the thread with the left hand toward the right as illustrated, and close the slide.

Threading Oscillating Shuttle Machine Nos. 15-88 to 15-91

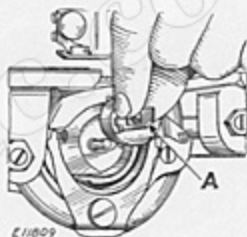
Upper Threading



Turn the hand wheel over toward you until the thread take-up lever 5 is raised to its highest position. Place the spool of thread on the spool pin at the top of the machine and pass the thread to the left through the thread guide 1 at the rear of the face plate, down, under and from back to front between the tension discs 2. With the right hand hold the spool to prevent it from turning, and with the left hand draw the thread up into the take-up spring 4 until the thread enters the retaining fork 3, then pass the thread up from back to front through the hole in the thread take-up lever 5, down through the guide 6 on the face plate, into the guide 7 on the needle clamp and from right to left through the eye of the needle 8.

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

Under Threading



After raising the thread take-up to its highest position, draw the slide in the bed of the machine to the left. Reach down with the thumb and forefinger of the left hand, open the bobbin case latch A with the forefinger and lift out the bobbin case.

While the latch remains open the bobbin is retained in the bobbin case. Release the latch, turn the open end of the bobbin case downward and the bobbin will drop out.



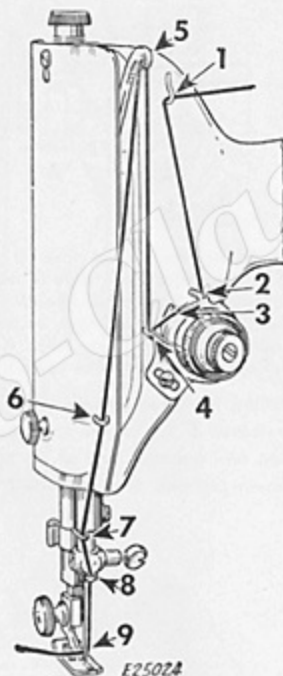
After winding the bobbin, hold it between the thumb and forefinger of the right hand, with the thread on top, drawing from right to left. With the left hand hold the bobbin case as illustrated, the slot in the edge being at the top, and place the bobbin into it.



Then pull the thread into the slot in edge of bobbin case and back under the tension spring into the slot at the end of the tension spring.

Threading Horizontal Rotary Hook Machine No. 201

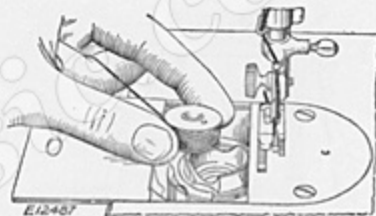
Upper Threading



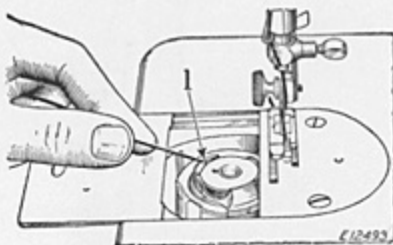
Turn the hand wheel over toward you until the thread take-up lever 5 is raised to its highest point. Place the spool of thread on the spool pin at the top of the machine and pass the thread to the left through the thread guide 1, down, under and from right to left between the tension discs 2. With the right hand hold the spool to prevent it from turning, and with the left hand draw the thread up into the take-up spring 4 until the thread enters the retaining fork 3, then pass the thread from right to left through the hole in the thread take-up lever 5, down through the guide 6 on the face plate, into the wire guide 7 on the needle bar bushing, into the guide 8 on the needle clamp and from right to left through the eye 9 of the needle.

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

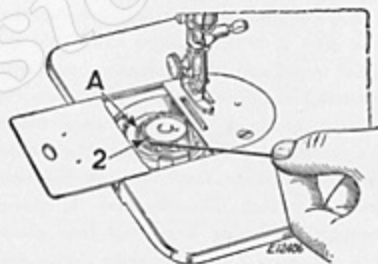
Under Threading



Hold the bobbin between the thumb and forefinger of the left hand, the thread drawing on the bottom from right to left.



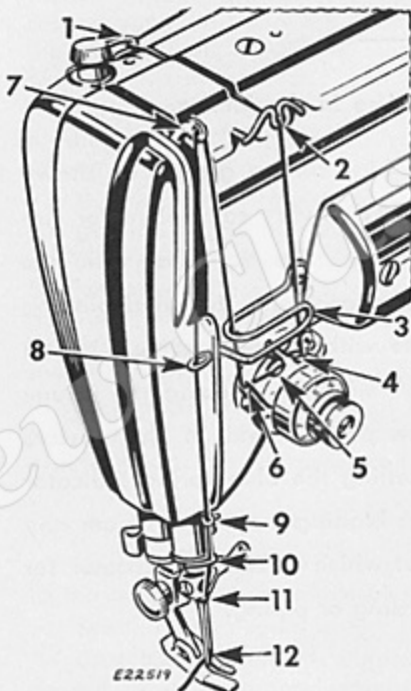
Place the bobbin into the bobbin case and draw the thread into the slot 1 in the bobbin case.



Draw the thread toward you between the bobbin case and the tension spring until it passes the notch 2 in the bobbin case.

Rotary Hook, Horizontal Axis Machine No. 301

Upper Threading



Turn the hand wheel over toward you until thread take-up lever 7 is at its highest point. Place spool of thread on spool pin at top of machine and lead thread into thread guide 1, into thread guide 2, down into thread guide 3, down, under and from right to left between tension discs 4. Hold spool tightly and pull thread up against take-up spring 6, until it enters retaining fork 5, pass thread up into thread guide 3, from right to left through hole in take-up lever 7, down through eyelet 8, into wire thread guide 9, into wire thread guide 10, into guide 11 on needle clamp, and from right to left through the eye 12 of the needle.

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

Under Threading



Raise needle to its highest point. Raise bed extension J as far as it will go. Open bobbin case latch K and lift out bobbin case. Release latch and remove bobbin from bobbin case.



After winding bobbin, hold it so that thread will unwind in direction shown above.

Hold bobbin case as shown and place bobbin into it.



Pull thread into slot 1, under tension spring 2, and into slot 3 at end of spring. Allow about three inches of thread to hang free from bobbin case.

MULTI-SLOTTED BINDER AND ITS MANY USES

APPLIED TO FAMILY SEWING

Preparing Binding for Use in the Binder



Fig. 31
The Bias Cutting Gauge

The bias cutting gauge, as shown in Fig. 31, is very convenient for cutting bias strips for use with the Binder attachment. Unfolded binding for use with the Binder must be cut 15/16" wide. By placing the gauge on the pointed end of the scissors and setting the blue spring indicator

A, Fig. 31 to the width desired, bias binding may be cut from any material. The letter F is the point at which to set the indicator for facings, B for binding and C for cording or piping.

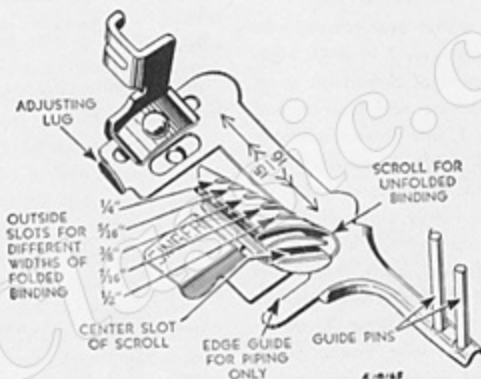


Fig. 32. Multi-Slotted Binder 160359†

†On Machine 301 use Binder 160624 which is the same as Binder 160359 except that it has a slanted shank to fit the slanted presser bar of Machine 301.

This multi-slotted Binder will apply **unfolded bias binding** 15/16" in width and commercial **folded binding** in sizes 1, 2, 3, 4 and 5 to the seams or to the edges of garments. These sizes of folded binding are 1/4", 5/16", 3/8", 7/16" and 1/2" in width, respectively, and are fed through slots of corresponding sizes in the binder scroll. See **Fig. 32**. Binding may be purchased in a variety of materials and colors.

For convenience in determining the correct width of **unfolded binding** (15/16"), this measurement is marked on the Binder, as shown in **Fig. 32**.

The two upright guide pins as shown in **Fig. 32** eliminate manual guiding of the binding.

The wide range of bindings that can be applied with this Binder makes it useful for a large variety of work. It will be found particularly advantageous for making children's wear, lingerie, summer dresses, and other dainty articles which call for the narrower bindings.

As two different widths of binding of contrasting color can be fed through the Binder at the same time, attractive binding and piping effects can be produced in one operation.

To Attach Binder 160359†

Raise the needle to its highest position, then attach the Binder to the presser bar in place of the presser foot.

See that the needle enters the center of the needle hole.

CAUTION—When this Binder is used on Machines 221 and 301, do not raise the hinged extension of the cloth plate high enough to strike the Binder, as this would tend to distort and damage the Binder. Before storing or packing the 221 or 301 Machine, the Binder should be removed to avoid damage.

To Insert the Binding in Binder 160359†

Cut all binding to a long point to the left, as shown in **Fig. 33**.

Folded Bias Binding must be inserted in the slot or slots of corresponding sizes. See **Fig. 38**.

Unfolded or Raw Edge Bias Binding must be inserted in the open end of the scroll. See **Fig. 34**.

After inserting the pointed end of the binding in the Binder, push it through until the full width of the binding is under the needle.

Guide the binding by means of the two upright pins, as shown in **Figs. 34 and 38**.



Fig. 33
Cutting Point
on Binding

†See note at bottom of page 26.

To Insert the Garment in Binder 160359†

Place the edge to be bound as far to the right as it will go in the center slot of the scroll, as shown in Fig. 34, and draw it back under the Binder foot.

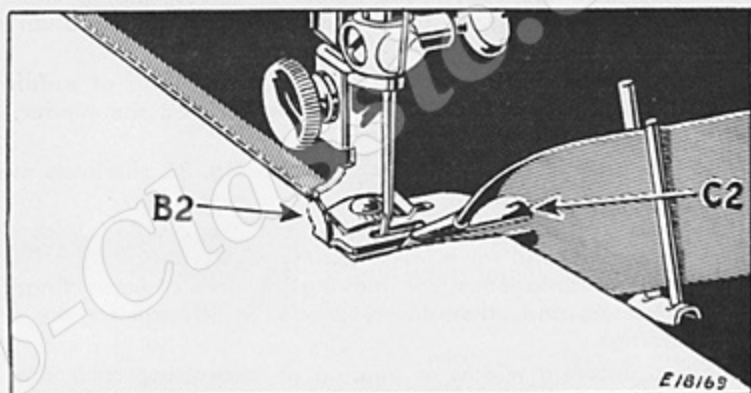


Fig. 34. Binding with Unfolded Bias Binding

Lower the Binder by means of the presser foot lifter, and start to sew. Keep the material well within the center slot of the scroll so that the edge will be caught in the binding.

To Adjust Binder 160359†

To bring the inner edge of the binding closer to the stitching, move the scroll C2, Fig. 34 to the right by means of the lug B2, Fig. 34. This is the usual adjustment when binding straight edges.

When binding curves, move the scroll to the left to bring the inner edge of the binding farther from the stitching and allow for the sweep of the curve.

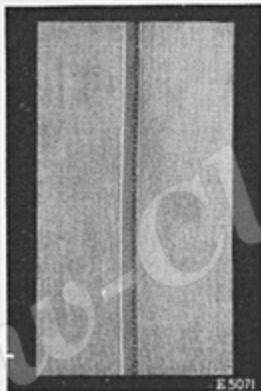


Fig. 35. Plain Bound Seam

†See note at bottom of page 26.

Plain Bound Seams

A plain bound seam is practical for many garments, such as petticoats, wash dresses, children's clothes, etc. Make a plain seam and trim close to the line of stitching.

Insert binding in Binder, adjust to sew close to the edge, insert the seam in the scroll of the Binder and start sewing, taking care to hold the edge well within The Binder scroll to insure a safe seam.

Open Bound Seams

An open bound seam is practical on woolen garments where a double seam would be too bulky. The seam is stitched in the regular way after the garment is fitted. It is then trimmed evenly about $3/4$ " from the line of stitching and pressed flat with an iron. Both edges of the material are then bound with suitable material. Serge or woolens may be bound with lightweight percaline.

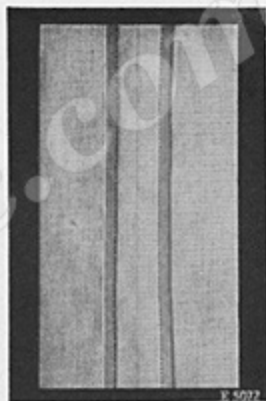


Fig. 36. Open Bound Seam

Piped Edge

To produce a **piped edge** on garments, move the lug B2, Fig. 37 to the left to bring the stitching about midway of the folded binding.

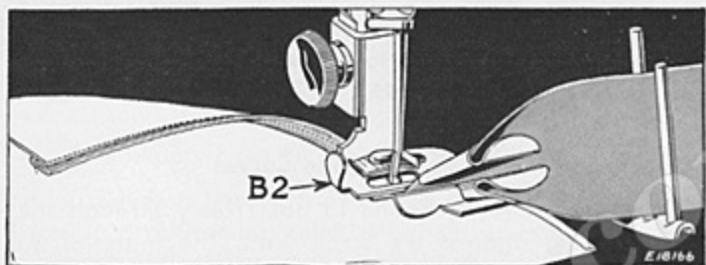


Fig. 37. Position of Garment when Piping Edges

Crease the raw edges of the garment toward the wrong side about $1/8$ ", and insert the folded edge, raw edges uppermost, into the edge guide on the Binder and **beneath** the binding.

When stitched, both sides of the garment will be finished, and the right side will show the piped edge.

Piping and Binding in One Operation

A garment can be piped and bound in one operation, as shown in Fig. 38.

Important—When piping and binding at the same time, as shown above, insert the **narrower width** of binding **first** in its slot,

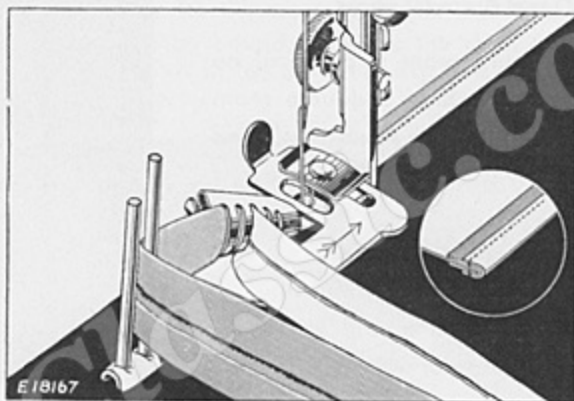


Fig. 38. Piping and Binding in One Operation

then insert the wider width in its slot. **Two consecutive widths should not be used at the same time.** That is, if No. 1 is used, the wider binding should not be smaller than No. 3. If No. 2 is used, the wider binding should not be less than No. 4. **Never use Nos. 1 and 2, or 2 and 3, etc., together.**

Use the upright guide pins to guide the wider of the two widths of binding, as shown in Fig. 38.

To Bind Outside Curves

Allow the edge to be bound to pass freely through the scroll without crowding against the scroll wall. The material must be guided from the back of the Binder and to the left, permitting unfinished edges to swing naturally into the scroll of the Binder.

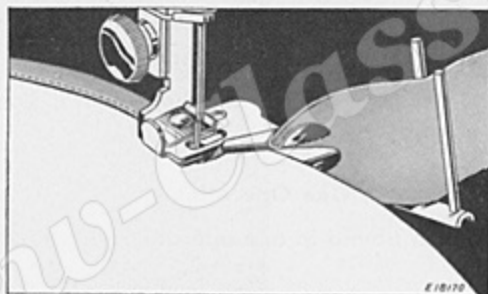


Fig. 39
Binding an Outside Curve

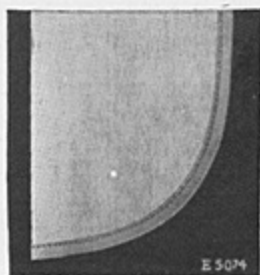


Fig. 40. Sample of
Outside Curve

Never pull the binding while it is being fed through the Binder, as this may stretch the binding, making it too narrow to stitch or to turn in the edges.

When binding curves, turn the material only as fast as the machine sews.

Do not push the material in too fast as this will pucker the edge.

Do not stretch the material as this will distort the edge so that the curve will not have the proper shape when finished.

If the stitching does not catch the edge of the binding, adjust the scroll slightly to the left.

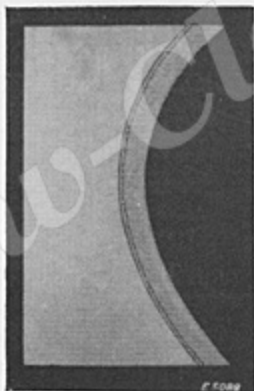


Fig. 41. Sample of Inside Curve

To Bind Inside Curves

When binding an inside curve, straighten out the edge of the material while feeding it into the Binder, being careful not to stretch the material.

Soft materials like batiste or crepe de chine require a row of stitching added close to the edge of the curve before binding.

Applying a French Fold to a Curve

Binding makes a very attractive trimming when applied as a French fold in a contrasting color, or when made of white and applied to a colored garment. To apply the French fold, place the material under the Binder and stitch the binding onto the face of the material, as shown in Fig. 42.

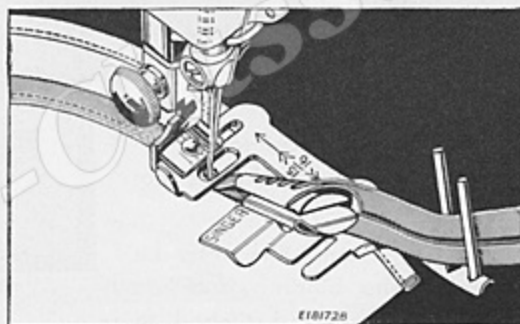


Fig. 42. Applying a French Fold

For guidance in applying the rows of French folds, mark the material with a line of basting stitches or with chalk or pencil.

Binding Plackets

It may appear difficult at first to bind a placket with the Binder, but it is very simple after you have learned to fold your material properly at the point of the placket. To bind a placket, stitch down

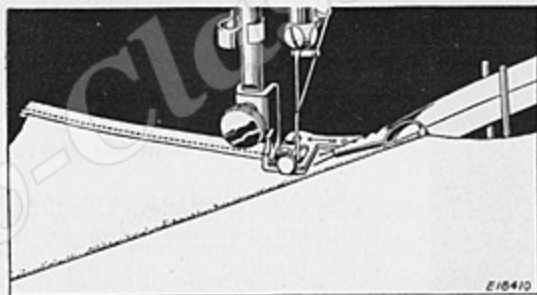


Fig. 43. Binding a Placket

to the left side of slit until the point of placket is about to enter scroll, then swing right side of slit sharply into a straight line, the fullness of the material forming a V at the left.

Run the machine slowly as the point is reached and take care that too much material is not allowed to feed into the Binder.

For practice, cut a slit about five inches deep in muslin and learn to fold it in a straight line before starting to bind. When you have mastered the placket you will find it quite easy to bind scallops.

The bound placket is practical to use on any garment where a wide overlap is not desired.

If snap fasteners are used, they may be sewn to the edge of the binding and the turned-back edge may be blind-stitched to the garment, as shown in Fig. 44.

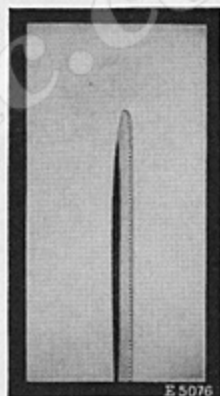


Fig. 44. Sample of Bound Placket

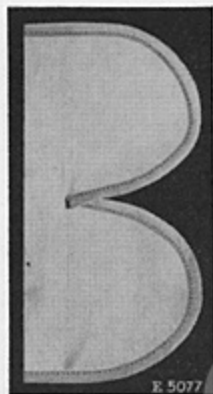


Fig. 45. Sample of
Bound Scallops

Bound Scallops

The same method used in binding an outside curve is used for binding scallops. The point at the top of the scallop is bound in exactly the same manner as the placket. Practice the binding of a small single scallop first before attempting to bind a row of scallops.

If the material is soft and liable to stretch, add a row of machine stitching close to the edge of the scallop before starting to bind the edge.

Binding a Square Corner

To bind a square corner, apply the binding along one side to within 1/8" of the edge of the material, stopping the machine with the needle and take-up at the highest point. Then draw the material back away from the needle far enough to pull about two inches of the binding through the Binder. Fold and crease the binding to a square mitered corner, turn the material and draw it back into the Binder, bringing the needle down through the binding close to the corner, as shown in Fig. 46. Draw the slack thread back through the needle and tension. Be sure the new edge of the material is properly placed in the scroll of the Binder and begin stitching slowly until you are sure the material is feeding properly. The loop of the thread on the under side at the corner may be tied or cut off without fear of raveling, as the stitch is locked.

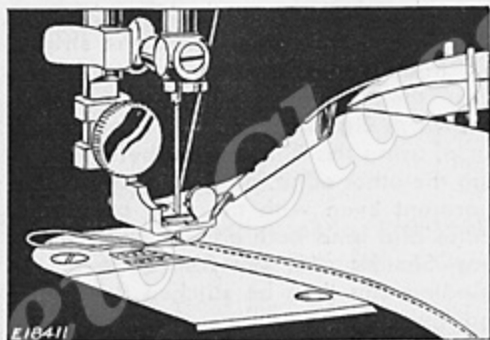


Fig. 46. Turning a Square Corner

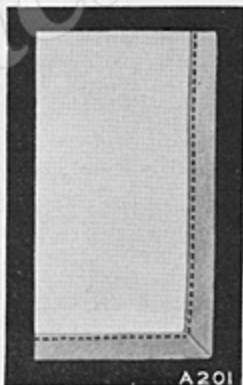


Fig. 47. Sample of
Square Corner

Making Button Loops with the Binder

To make button loops, first stitch together a piece of binding of the desired material and length by using the Binder. You will then have a quarter-inch fold with the edges stitched together. Cut a strip of binding long enough to make a loop of the desired size and fold it to a point, by bringing the two stitched edges together, having ends even. Care should be taken to keep all right sides uppermost. Fasten the loop at the point with a hand sewing needle.

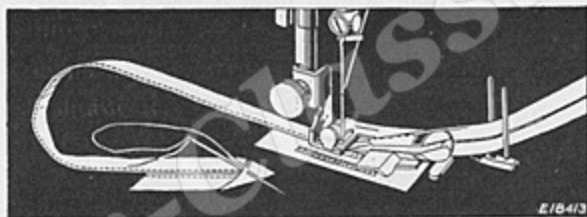


Fig. 48. Making Button Loops

The loops may be fastened to the garment in any desired manner. If used as a trimming, they may be applied under a tuck or pleat, and when used on the edge of the garment, they may be applied with a facing.

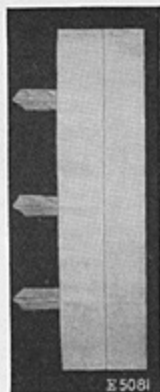


Fig. 49
Button Loops
Applied

Bound Buttonholes Made with the Binder

Take a strip of material as wide as the space desired between buttonholes and bind each side. For example, if you wish to make your buttonholes two inches apart, take a two-inch strip of material as shown in Fig. 50, at A, and bind each side as shown at B.

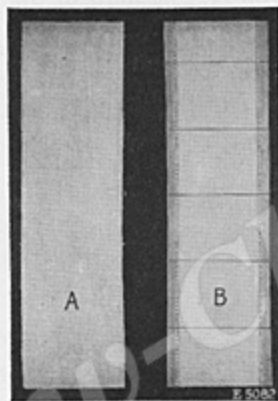


Fig. 50. Starting Bound
Buttonholes

Measure the diameter of the button you wish to use and cut the bound strip into pieces one-half inch wider than the button. See Fig. 50-B. After the strip is cut into sections, bind them together so that the bound edges just meet, as shown in Fig. 51. Bind one edge of this strip, using the Binder, and before binding the other edge, place the edge of the garment even with the strip of buttonholes and bind both edges at one stitching. See Fig. 52. The free edge of the binding can then be stitched flat to the garment.

If an extra-strong buttonhole is desired, a linen tape may be used for the binding.

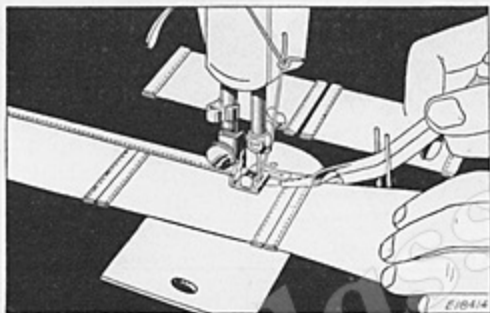


Fig. 51. Binding Pieces Together

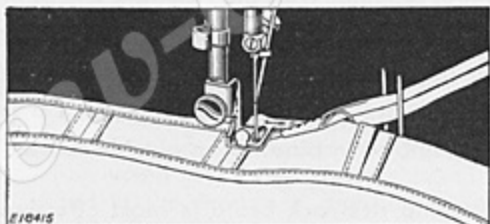


Fig. 52. Completing Bound Buttonholes

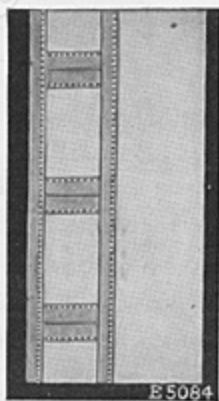


Fig. 53. Samples of Bound Buttonholes

Making Cut-In Buttonholes with the Binder

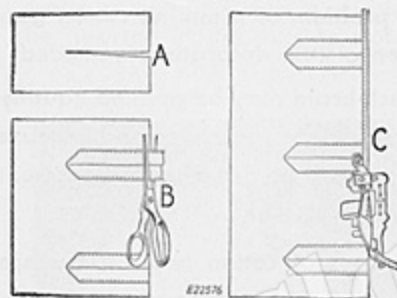


Fig. 54. Cut-In Buttonholes

The cut-in buttonhole is made in the same way as the placket. Cut a slot in the edge of the material to the depth you wish to make the buttonhole and shape it as shown in Fig. 54, at A. Fold the material in the same manner as in binding a placket. See Fig. 43. Trim off the edge of the binding, as shown in Fig. 54, at B, and bind the edge with the Binder as shown at C.

Binding and Applying Rick-Rack Braid to the Edge of a Garment at One Stitching

Rick-rack braid may be purchased at any notion counter and comes in a variety of colors and widths. This braid makes an attractive trimming for house dresses and aprons and may be applied to an outside or an inside curve at the same time the edge is bound.

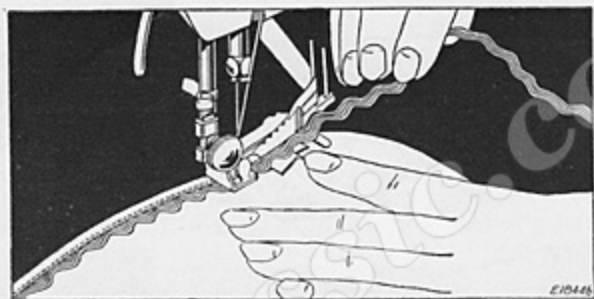


Fig. 55. Binding and Applying Rick-Rack Braid

Insert the edge to be bound, together with the rick-rack braid, in the scroll of the Binder, as shown in Fig. 55. The rick-rack braid should be fed into the Binder in a straight line and against the wall of the scroll, regardless of the shape of the garment to which it is being attached. This is especially true in binding an outside curve.

A fine rick-rack braid is most effective trimming on organdy dresses or collar and cuff sets.

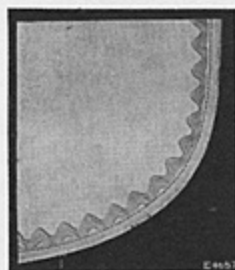


Fig. 56. Edge Trimmed with Binding and Rick-Rack Braid

This braid is very inexpensive, and solves the problem of trimming cotton garments when a little decoration is needed.

Rick-rack braid may be applied equally well to outside or inside curves and because of the weave will lie flat after the garment is laundered.

Other types of cotton braid trimmings may be applied in the same manner.

Finishing the Neck Edge of a Garment with Binding

The problem of a neat binding for the neck edge or sleeves of a garment is easily solved by applying binding with the Binder.

Fig. 57 shows the neck edge of a garment trimmed with a narrow pleating which was made with the Ruffler as directed on page 54. After the pleating was stitched to the edges of the garment, the seam was trimmed close to the line of sewing and the edge bound with suitable material, using the Binder.

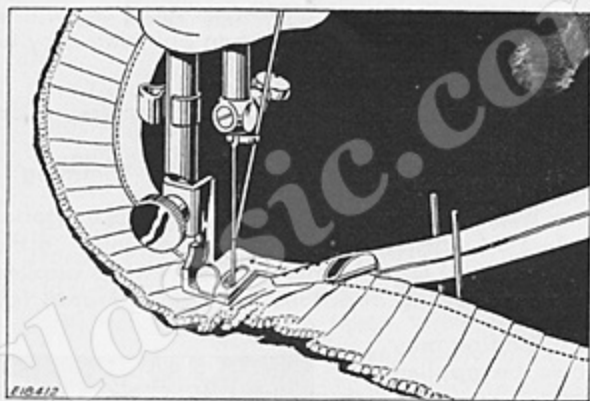


Fig. 57. Finishing an Edge with Ruffling and Binding

The seam was trimmed close to the line of sewing and the edge bound with suitable material, using the Binder.

Silk binding may be applied in this manner by cutting the silk on a true bias, using the cutting gauge as directed on page 26. When using silk for binding, a small strip should be cut first, and tested in the Binder to determine the correct width. Soft silk will work satisfactorily when cut about one inch in width.

Applying Military Braid with the Binder

Most attractive trimmings for serge or other woolen dresses may be developed by using military braid as a binding. The braid must measure one-half inch in width for use with the Binder and it must be inserted in the outside slot.

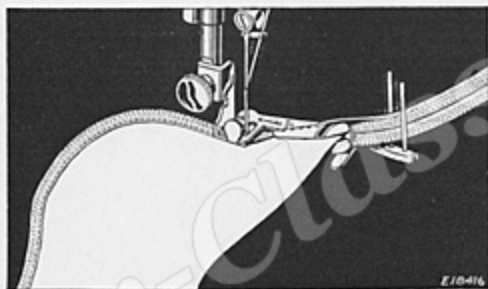


Fig. 58.
Binding with Military Braid

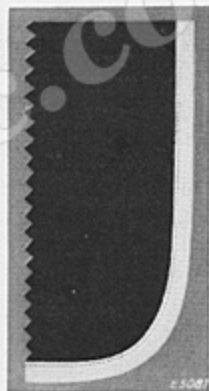


Fig. 59. Sample of
Military Braid Applied
with Binder

Curved edges on woolen material are quite as easy to bind as on cotton material. Military braid makes an excellent finish for the

neck and cuffs or the panels on a serge dress. It is impossible to give this braid a tailored finish when applying it by hand or first basting and then stitching it.

This braid comes in a variety of colors in silk and cotton.

A Suggestion for Trimming

Binding may be stitched flat to the material to form a lattice effect by placing the binding in the Binder in the regular way and the material to which the binding is to be applied under the attachment, following directions for making French folds on **page 31**.

Binding may also be applied to paper in this manner, and when the paper is torn away the binding will be stitched together in the form of a lattice insertion, which makes a most attractive trimming for dresses of silk or cotton.

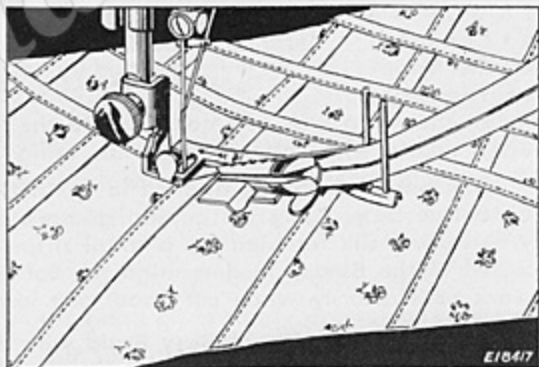


Fig. 60. The Binder Making Lattice Trimming

THE FOOT HEMMER

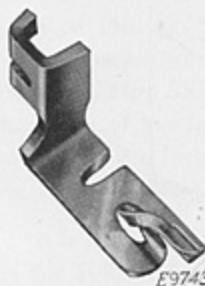


Fig. 61. The Foot Hemmer

The Foot Hemmer **Fig. 61** is attached to the machine in place of the presser foot. Raise the needle to the highest point, loosen the thumb screw which clamps the presser foot to the presser bar and remove the presser foot. Attach the Foot Hemmer to the bar, taking care to tighten the screw firmly so that the Hemmer will not become loose when the machine is running. Turn the hand wheel slowly to make sure that the needle goes through the center of the needle hole and that the lower thread is properly pulled up.

To Start the Hem at the Edge

- (1) Fold edge of material twice, about $1/8$ inch each time, for a distance of about two inches. Crease folds.
- (2) Lay about three inches of needle and bobbin threads back under hemmer. Place creased edge of material under hemmer with end of hem directly under needle. Lower hemmer and tack end of hem with two machine stitches.

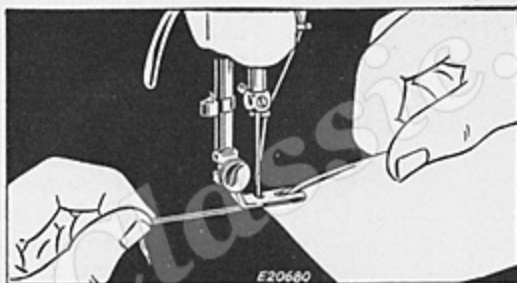


Fig. 62. Starting Hem at very end of Material

- (3) Raise hemmer. Pull threads and hem slightly from you with left hand, then while holding threads, draw material toward you with right hand and guide material into scroll of hemmer until tacked end is caught in hemmer, as shown in **Fig. 62**.

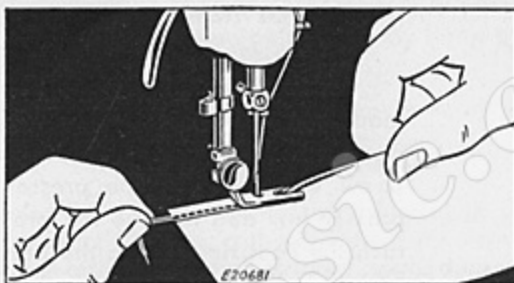


Fig. 63. Hemming Edge of Material and Pulling Back Threads While Sewing

- (4) Lower hemmer and start to sew, slightly pulling threads back while sewing. Keep scroll of hemmer full to produce a smooth, even hem, as shown in Fig. 63.

Making a Hemmed Seam with the Foot Hemmer

The hemmed seam is very practical to use on underwear, or in fact on any garment where a straight seam is used and where a small double seam would be suitable.

When using this seam, the garment must first be fitted and the edge of the material trimmed, allowing for about one-eighth inch seam. The two edges are placed together and inserted in the

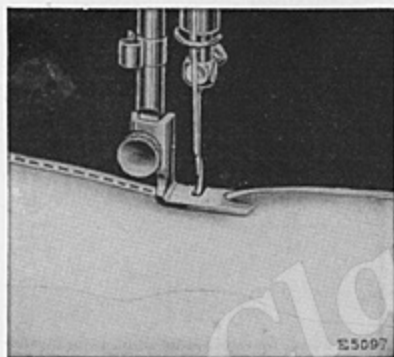


Fig. 64. Making a Hemmed Seam

the Hemmer in the same manner as a single hem. If the material is bulky, the edge of the upper piece of material may be placed about one-eighth inch in from the edge of the lower piece. See Fig. 64.

The free edge of a hemmed seam may be stitched flat to the garment if desired. First open the work out flat, then place the hem in the scroll of the Hemmer, which acts as a guide, holding the edge of the hem in position while it is being stitched.

If the seam is stitched flat to the garment, one row of stitching is visible on the right side.

The hemmed seam may be used on muslin, lawn, percale, or gandy or other fine materials where a narrow seam is desirable. It is not practical to seam woolen material in this manner.

Hemming and Sewing on Lace in One Operation

Start the hem in the regular way and with the needle holding the hem in position, raise the presser bar sufficiently to allow the edge of the lace to be slipped in under the Foot Hemmer, at the same time bringing it up through the slot at the right of the Hemmer. See Fig. 65. Lower the bar, turn the hand wheel and catch the edge of the lace with the needle. Guide the hem with the right hand and the lace with the left. Care should be taken not to stretch the lace as it is being fed into the Hemmer.

It is not practical to sew gathered lace on with the Foot Hemmer, as the full lace catches in the Hemmer slot.

A very attractive way of applying lace so that the stitching of the hem is not visible is to start the hem in the regular way, slipping the lace in from the left as you would the second piece of material when making a hemmed seam.

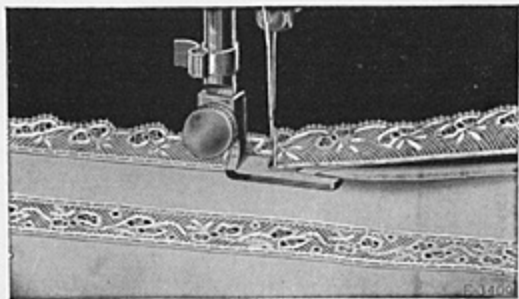


Fig. 65. Hemming and Sewing on Lace

Hemming Fine Materials with the Foot Hemmer

When hemming fine materials such as georgette or crepe de chine with the Foot Hemmer, the material will not feed through properly and the stitch will be very much shorter than when sewing with the presser foot on the same material.

To overcome this difficulty, and to assist in holding soft materials so that they will be turned properly with the Foot Hemmer, insert a piece of paper under the foot of the Hemmer and allow it to feed through with the material. Strips of thin paper or the edges of newspapers are very convenient for stitching. Never use tissue paper, as this will be very difficult to pull away from the material.

THE ADJUSTABLE HEMMER

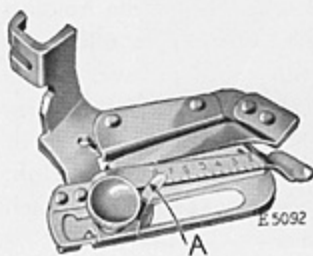


Fig. 66. The Adjustable Hemmer

The Adjustable Hemmer Fig. 66 is a part of the set of attachments supplied with most family machines. This Hemmer will make a hem of any desired width up to about 15/16 inch.

Remove the presser foot and attach the Hemmer to the presser bar, taking care that the needle comes in the center of the needle hole after you tighten the thumb screw.

How to Adjust the Hemmer for Hems of Various Widths

To adjust the Hemmer, loosen the screw and you will then be able to move the hemmer guide to the right or to the left. Note the pointer A, Fig. 66 which is used in connection with the scale of figures on the Adjustable Hemmer.

The Hemmer may be adjusted as follows:

Pointer set at:

- | | |
|-------------------------------|--------------------------------|
| 1—for 3/16" hem (approximate) | 5—for 5/8" hem (approximate) |
| 2—for 1/4" hem (approximate) | 6—for 3/4" hem (approximate) |
| 3—for 3/8" hem (approximate) | 7—for 7/8" hem (approximate) |
| 4—for 1/2" hem (approximate) | 8—for 15/16" hem (approximate) |

After setting the Hemmer, care should be taken to see that the adjusting screw is well tightened before starting to sew.

How to Insert the Material in the Adjustable Hemmer

Fold over the edge at the end of the material to be hemmed, as instructed for starting a hem with the Foot Hemmer. Place the material in the Hemmer under the scale and draw it back and forth until the hem is formed.

You will then be able to determine the width and to fold over the end of the hem for the second turning. Draw the material back until the end comes directly under the needle.

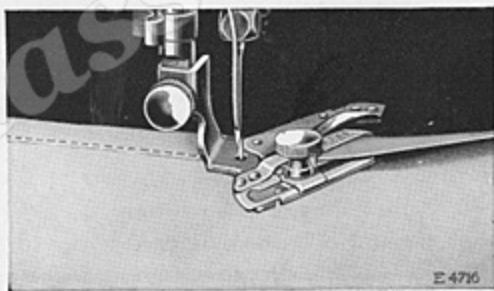


Fig. 67. Hemming with the Adjustable Hemmer

Lower the presser bar and sew, guiding sufficient material in the Hemmer to turn the hem properly.

If the hem is not started evenly at the edge it will run bias and not come out even at the other end.

Hemming Soft Material

When hemming soft material that is liable to stretch, it is well to slip a piece of paper under the Hemmer next to the feed. This will prevent the material from stretching and assist in turning the hem.

How to Prepare a Hem on Table Linen

Much time is spent in turning the hem of table linen to make it ready for hand sewing. The Hemmer is very valuable for this operation. Set the Hemmer for the desired width of hem, take the thread from the needle and run the linen through the Hemmer.

You will find that the hem has been evenly turned, ready for the hand sewing and the holes made by the machine needle have softened the linen, making it quite easy to do the hand work. See Fig. 68.

Table linen or other material may be prepared for hemstitching in this manner.

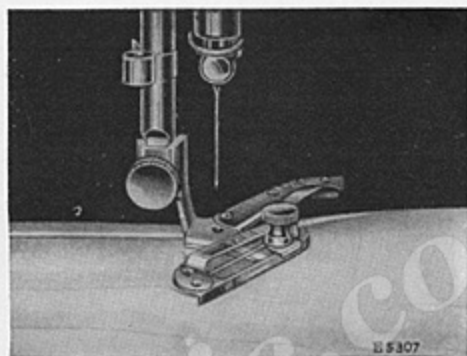


Fig. 68. Preparing a Hem on Table Linen

THE EDGE-STITCHER

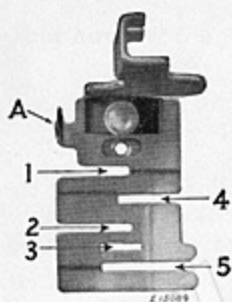


Fig. 69
Edge-Stitcher

The Edge-Stitcher is a very useful attachment and is available for all family machines described in this book. It is attached to the machine in place of the presser foot. The slots, which are numbered from 1 to 5, Fig. 69, serve as guides for sewing together laces, insertions, embroideries, sewing in position hemmed or folded edges, piping or sewing flat braid to a garment. The Edge-Stitcher will be found an indispensable aid whenever stitching must be kept accurately on the extreme edge of a given line.

Attaching the Edge-Stitcher to the Machine

Raise the needle bar to its highest point, remove the presser foot and attach the Edge-Stitcher in its place. Turn the hand wheel over slowly by hand to see that the needle goes through the center of the needle hole. For practice in adjusting the Edge-Stitcher, place a folded edge of material in slot 1 and proceed to stitch. Push the adjusting lug, A, Fig. 69, as far as it will go to the right and note the result; then pull to the left and note that the stitching is now closer to the edge. If the attachment seems hard to adjust, place a drop of oil at the blue spring. As the oil works under, the lug may be moved smoothly, from side to side, as desired.

Sewing Lace Together with the Edge-Stitcher



Fig. 70. Sewing Lace Together

When adjusting the Edge-Stitcher to sew two lace edges together, it is necessary to place one edge of the lace in slot 1, Fig. 69, and adjust to sew close to the edge. Place the second piece of lace in Slot 4, and as the lace feeds through the attachment, hold the edges slightly over-lapped. This will prevent the lace from feeding away from the guides.

The tension on the machine must be properly adjusted so that the lace will not be puckered. If the edges of the lace are not caught together, adjust lug A, Fig. 69, slightly in the proper direction.

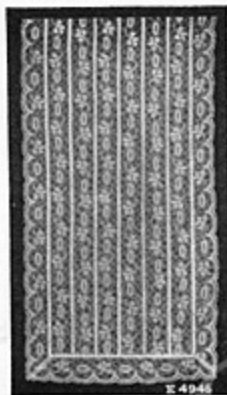


Fig. 71. Sample of
Lace Joining with
Edge-Stitcher

As it is difficult to sew two lace edges together even after basting, the Edge-Stitcher proves a most valuable time-saver for such operations. Fig. 70 shows the Edge-Stitcher in operation and Fig. 71 an attractive sample of lace joining.

Lace and ribbon may be sewn together in the same manner, making dainty trimming for underwear. See Fig. 72.

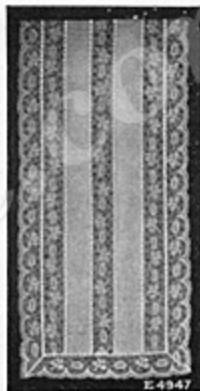


Fig. 72. Lace
and Material
Joined

Setting in Lace Insertion

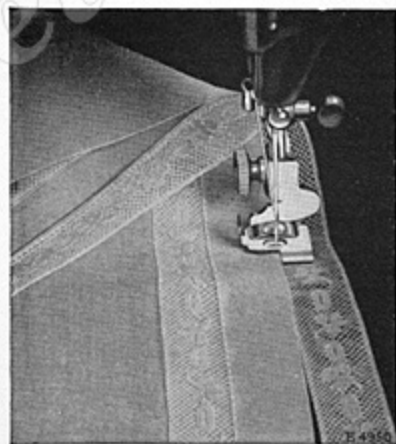


Fig. 73. Setting in Lace Insertion

When making lingerie, lace insertion is sometimes set in the material for trimming. There is always a problem of how to finish the edge of the material without making a hem. The Edge-Stitcher may be used for this operation by folding the material on the edge to which the insertion is to be attached, placing the insertion in slot 4 and the folded edge in slot 1, Fig. 69.

The surplus material is then cut away close to the stitching as shown in Fig. 73. The edge of the material will not pull out as it has been stitched through a double thickness. Fig. 72 shows a finished sample of this type of work.

Piping with the Edge-Stitcher

Piping is very attractive if the correct contrasting color is chosen for the piping material. Place the piping in slot 3, Fig. 69, with the finished edge of the piping to the left and the edge to be piped in slot 4, as shown in Fig. 74. It is advisable to cut the piping bias and this may be quickly done with the bias cutting gauge as described on page 26.

Set the spring of the cutting gauge between B and C and the piping will be the correct width to fit the piping slot in the Edge-Stitcher after it has been folded in the center.

Applying Bias Folds with the Edge-Stitcher

Folded tape, which may be purchased in a variety of colors and materials, may be applied to a garment with the Edge-Stitcher by placing the tape in slot 4 and the garment to which the trimming is to be applied flat under the attachment. See Fig. 75. When turning a square corner, sew until the turning point is reached, take the tape from the attachment, miter the corner by hand and place the edge in position in the attach-



Fig. 75. Applying Bias Folds with the Edge-Stitcher

by a chalk mark or basting thread. Trimming applied with the Edge-Stitcher will give a garment the tailored finish so desirable for a garment made at home.

The braid is inserted in slot 4, Fig. 69, and the attachment is adjusted to sew close to the edge of the braid. The garment is then placed under the attachment. See Fig. 76, showing Edge-Stitcher in operation sewing on military braid.

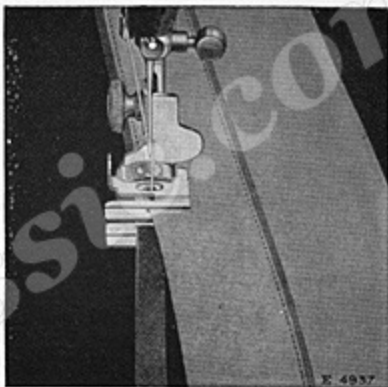


Fig. 74. Piping with the Edge-Stitcher

ment as illustrated. This folded tape may be purchased in a variety of widths and may be chosen to suit the type of garment to be made.

Military Braid Applied with the Edge-Stitcher

Military braid makes a neat tailored trimming for a serge, or other woolen dress and may be applied without basting by using the Edge-Stitcher. The line of trimming may be indicated

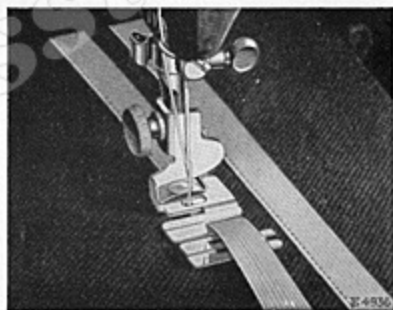


Fig. 76. Applying Military Braid

Making a French Seam with the Edge-Stitcher

The Edge-Stitcher may be used when making French seams to keep the seam of uniform width. Make the first stitching of the seam on the right side of the garment, using the presser foot, trim the edge close to the stitching and fold to the wrong side of the garment. Place the folded edge in slot 4 of the Edge-Stitcher, **Fig. 69** and adjust to make the width of seam desired.

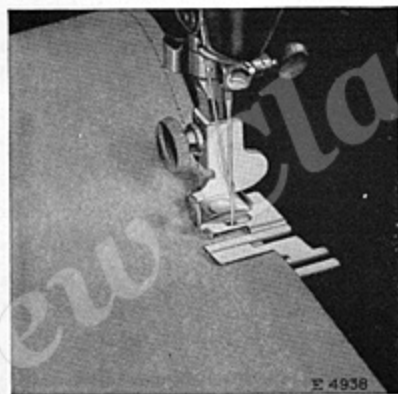


Fig. 77. The Edge-Stitcher Making a French Seam

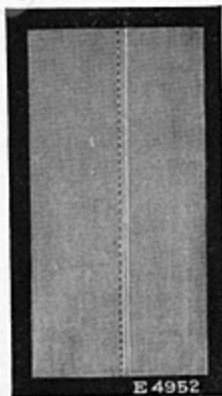


Fig. 78
A French Seam

Since the use of this attachment will prevent spoiling the appearance of a garment, it will prove most valuable in avoiding poorly stitched seams. See **Fig. 77**, showing the Edge-Stitcher in operation making a French seam, and **Fig. 78**, the finished seam.

The Edge-Stitcher Making a Wide Hem

A wide hem may be stitched in position with the Edge-Stitcher after the hem has been measured and the edge turned. The edge of the hem is inserted in slot 5 of the attachment, **Fig. 69**. Adjustment is then made to bring the stitching close to the edge of the hem. This method of hemming may be used for hems with a straight edge such as sheets, pillow slips, etc. See **Fig. 79**, showing Edge-Stitcher in operation making a wide hem.

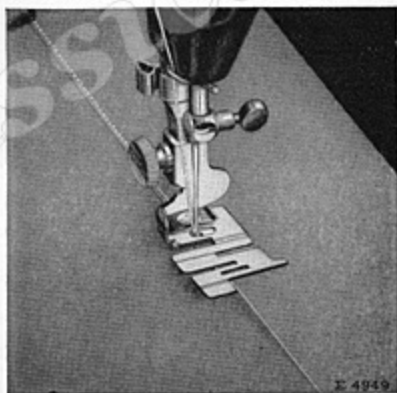


Fig. 79. Making a Wide Hem

SHIRRING WITH THE GATHERER

The Gatherer is fastened to the machine in the same manner as the presser foot. Material placed under the Gatherer and stitched in the usual way will be slightly gathered. The length of stitch on the machine regulates the fullness of the gathers. A longer stitch will increase the fullness, while a shorter stitch will decrease it.

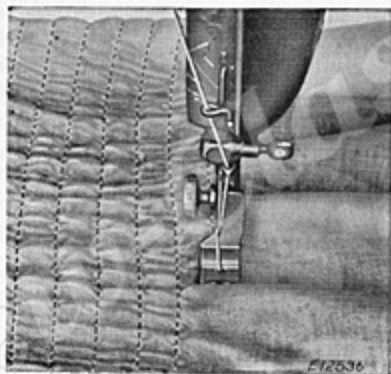


Fig. 80. The Gatherer in Operation

With the Gatherer, it is possible to shirr in narrow rows as shown in Fig. 80. The material may be guided as easily as when sewing with the presser foot. Fine materials, such as batiste, silk or net, may be very attractively shirred. Where only a slight fullness is required, as at the top of a sleeve or around the neck, the Gatherer will be found very convenient.

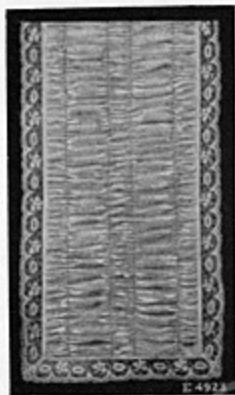


Fig. 81. Shirring

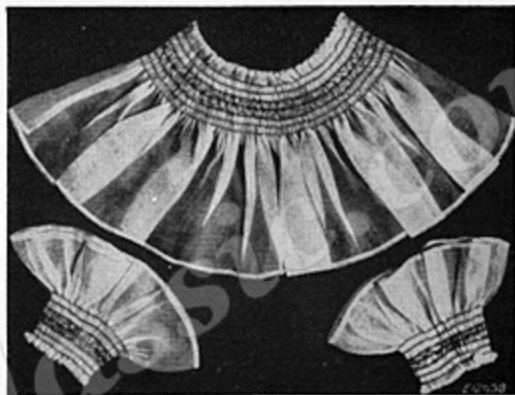


Fig. 82. Smocking

A very pleasing effect may be gained by using heavy duty thread or embroidery silk in contrasting color on the bobbin. Fig. 82 shows a white organdy collar and cuff set with red and green smocking made with the Gatherer, using heavy duty thread on top and white cotton in the bobbin.

THE RUFFLER

The Parts of the Ruffler and Their Uses

It is necessary to become familiar with the Ruffler before it can be used successfully. Select the Ruffler from the set of attachments and compare it with Fig. 83. Note the names and uses of the principal parts, as follows:

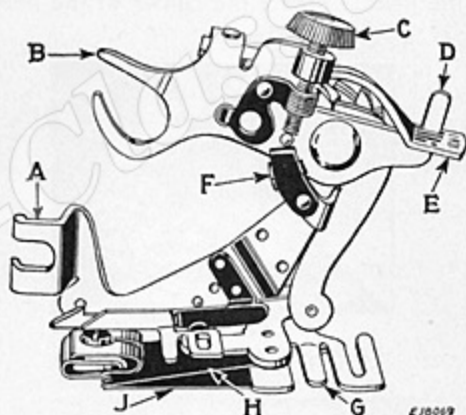


Fig. 83. Principal Parts of the Ruffler

NOTE: If the Ruffler with your machine is not exactly like the one in Fig 83, you will find the working parts quite similar. Any difference in the adjustments will be found explained in the instruction book that is furnished with your machine.

- A—Foot**—attaches ruffler to the presser bar.
- B—Fork Arm**—straddles the needle clamp.
- C—Adjusting Screw**—regulates fullness of gathers.
- D—Projection**—engages the slots in the adjusting lever.
- E—Adjusting Lever**—sets ruffler for gathering or for making a pleat once at every 6 stitches or once every 12 stitches as desired; also for disengaging ruffler, when either pleating or gathering is not desired.
- F—Adjusting Finger**—regulates width or size of pleats.
- G—Separator Guide**—contains slots into which edge of material is placed to keep the heading of ruffle even; also for separating the material to be ruffled from the material to which the ruffle is to be attached.
- H—Ruffling Blade**—pushes the material in pleats up to the needle.
- J—Separator Blade**—prevents ruffling blade teeth from contacting feed or material to which ruffle or pleating is applied.

To Attach the Ruffler

- (1) Raise the needle to its highest point.
- (2) Loosen the presser foot thumb screw and attach the ruffler to the presser bar in place of the presser foot, at the same time placing the fork arm B astride the needle clamp.
- (3) See that the needle enters the center of the needle hole in the ruffler.

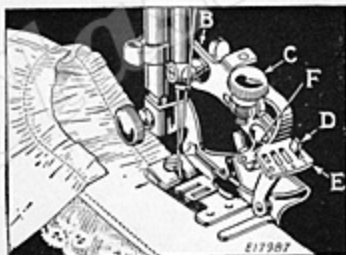


Fig. 84. Gathering with the Ruffler

To Adjust the Ruffler for Gathering

- (1) Swing the adjusting finger F away from the needle.
- (2) Raise the adjusting lever E and move it until the projection D can be entered in the slot marked "1."

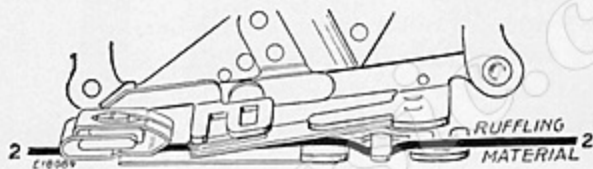


Fig. 85. Correct Position for Material to be Ruffled

- (3) Insert the material to be ruffled between the two blue blades and under the separator guide **Line 2, Fig. 85.**
- (4) Draw the material slightly back of the needle, lower the presser bar and start to sew.
- (5) For fine gathering, turn the adjusting screw C upward and shorten the stitch.
- (6) For full gathering, turn the adjusting screw C downward and lengthen the stitch.

To Make a Ruffle and Sew it to a Garment in One Operation

- (1) Insert the material to be ruffled between the two blue blades and under the separator guide, Line 2, Fig. 86.



Fig. 86

Correct Positions for the Materials

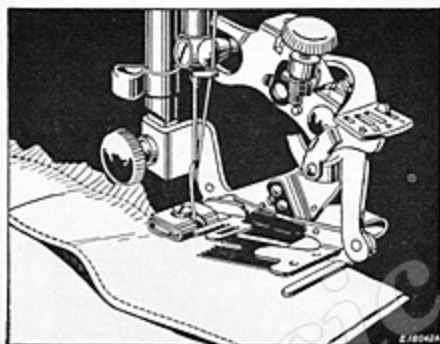


Fig. 87

Making a Ruffle and Attaching it in One Operation

- (2) Place the material to which the ruffle is to be attached under the separator blade and the separator guide, Line 1, Fig. 86.
- (3) Proceed the same as for plain gathering.

To Make a Ruffle and Attach it with a Facing in One Operation

- (1) Insert the material to be ruffled between the two blue blades and under the separator guide, **Line 2, Fig. 88.**



Fig. 88. Correct Positions for the Materials

- (2) Place the material to which the ruffle is to be attached under the separator blade and under the separator guide, **Line 1, Fig. 88.**
- (3) Place the facing material over the upper blue blade, **Line 4, Fig. 88.**

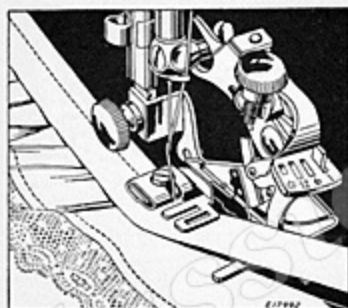


Fig. 89. Making a Ruffle and Attaching it with a Facing in One Operation

- (4) If the facing is to be on the **right side** of the garment, place the wrong sides of the garment and ruffle together.
- (5) If the facing is to be on the **wrong side**, place the right sides of the garment and ruffle together.

To Pipe a Ruffle

- (1) Insert the material to be ruffled between the two blue blades, **Line 3, Fig. 90**. This material must not exceed 1-1/4 inches in width.



Fig. 90. Correct Positions for the Materials

- (2) The piping material is usually cut on the bias and it should be about 1/4 inch wide when folded in the center. Place the piping material in the ruffler, following **Line 5, Fig. 90**, with the folded edge of the piping to the right.

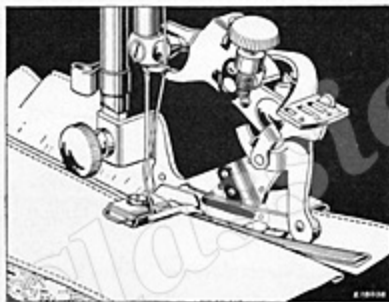


Fig. 91. Piping a Ruffle

- (3) Fold the edge of the material to which the piping and ruffling are to be attached and insert it in the ruffler from the left, following **Line 6, Fig. 90**.

To Adjust the Ruffler for Pleating

- (1) Raise the adjusting lever **E** and move it until the projection **D** can be entered in the slot marked "6." The ruffler will then pleat once every six stitches. To pleat once every twelve stitches, have the projection **D** enter the slot "12" in the adjusting lever **E**.

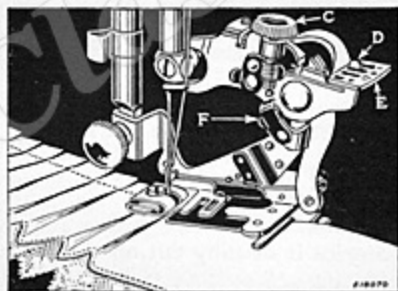


Fig. 92. Pleating with the Ruffler

- (2) Insert the material to be pleated between the two blue blades and under the separator guide, **Line 2, Fig. 93.**

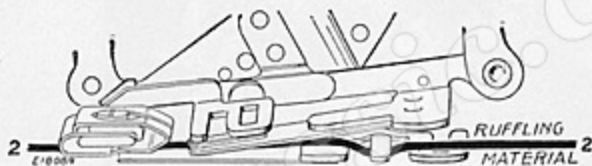


Fig. 93. Correct Position for the Material

- (3) To increase the width of pleat, move the adjusting finger **F** back toward the needle and turn the adjusting screw **C** downward. To make a smaller pleat, turn the adjusting screw **C** upward. The distance between pleats is regulated by the length of stitch.

To Adjust the Ruffler for Group Pleating

- (1) To make the space between the groups of pleats, raise the adjusting lever **E** and move it until the projection **D** can be entered in the small slot indicated by the star on the adjusting lever **E**. The ruffler will then stop pleating and plain stitching will be made.

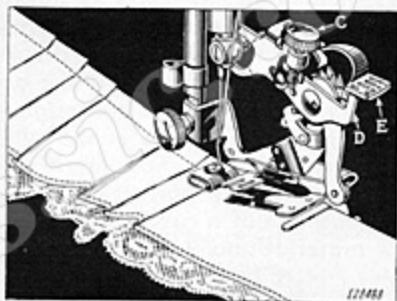


Fig. 94. Group Pleating with Ruffler

- (2) When the desired space is made, set the projection **D** in either of the slots "6" or "12."
- (3) Insert the material to be pleated between the two blue blades and under the separator guide, Line 2, Fig. 95.

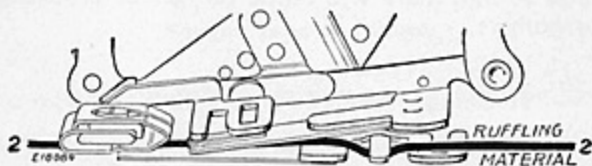


Fig. 95. Correct Position for the Material

To Oil the Ruffler

The ruffler requires an occasional oiling of all working parts to prevent them from sticking. A drop of oil at each point indicated in Fig. 95 A. is sufficient. If possible, sew on a waste piece of material, after oiling, to prevent your garment from becoming soiled. If ruffler does not pleat evenly, a drop of oil at the right spot may remedy the trouble.



Fig. 95 A. Oiling Points on Ruffler

How to Test the Ruffle for Fullness

It is often necessary to adjust the Ruffler for a certain fullness, but because the length of stitch affects the fullness as well as the position of the adjusting screw, it is impossible to have an indicator on the Ruffler to determine the amount of fullness that will be taken up. In addition, some materials take up more fullness than others with the same setting of the stitch and adjusting screw. It is therefore necessary to experiment with a small piece of the material to be ruffled, if the correct amount is to be gathered. For example, if the fullness of a ruffle is to be one and a half, take a six-inch piece of material and gather it into a four-inch space.

How to Slide the Gathers on the Thread

Another convenient way of gathering to fit a given space is to loosen the upper tension on the machine. This will allow the gathers to slide on the thread to fit the desired space the same as in hand gathering.

When gathering in this way, it is necessary to leave a long thread when taking the material from the machine so that the gathers may be adjusted as desired. It is also well to use a strong upper thread so that there will be no danger of breaking it when sliding the gathers.

Finishing a Ruffled Seam with Binding

Make the ruffle and sew it to the garment in one operation, then trim the seam close to the edge. Remove the Ruffler and attach the Binder to the machine. Select a suitable material to use for binding the seam and insert it in the Binder. Place the edge of the ruffled seam in the Binder and bind as shown in Fig. 96.

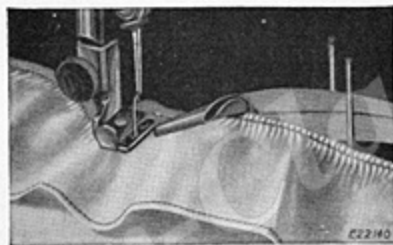


Fig. 96. Finishing a Ruffled Seam with Binding

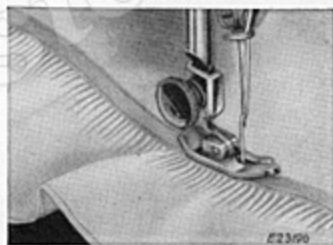


Fig. 97. Binding a Ruffled Seam Flat

The seam may be bound on the right side of the garment if desired and then stitched flat as shown in Fig. 97.

Finishing a Ruffle with a French Seam

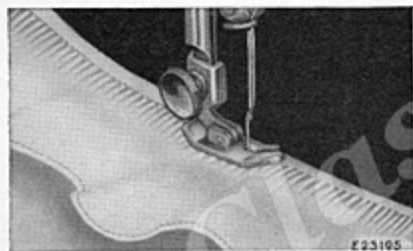


Fig. 98. Ruffle Finished with a French Seam

Place the garment and the material for the ruffle in the Ruffler as previously explained, with the wrong side of the material to be ruffled facing the wrong side of the garment. After sewing the ruffle to the garment in one operation, trim the seam close to the line of stitching and turn the seam to the wrong side of the garment. Stitch in position with the presser foot. See Fig. 98.

Pleated Lace or Ribbon

Ribbon and lace that have a little dressing can be pleated successfully with the Ruffler, if one inch or more in width. When pleating lace, however, it is necessary to place a strip of paper under the Ruffler. See Fig. 99 and note especially the paper under the Ruffler. Ribbon is pleated in the same manner, but paper is not required unless the ribbon is very soft.

It is advisable to use lace with a fine mesh for pleating, because coarse lace may catch in the ruffling blade.

Very attractive trimmings for lingerie and fancy articles may be made of pleated lace. Rosettes of lace or ribbon are used for decorations on many garments.

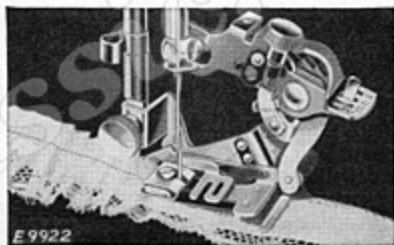


Fig. 99. Pleating Lace with Paper

THE ELECTRIC SEWING MACHINE

In this Electrical Age what household appliance is more valuable than the electric sewing machine? With the burden of stitching cared for by the electric motor, so easily connected to any electrical outlet, the problem of making clothes becomes a pleasure for the woman who has even a limited knowledge of sewing.

In planning a garment to be made at home, the average woman formerly welcomed a pattern that called for as little stitching as possible; but with the electric machine, the frock that calls for countless tucks and frills is a joy to complete.

When using the electric sewing machine, all you need to do is to touch the knee or foot control lightly and the machine will start, slowly at first, and by increasing the pressure on the control, it may be run as fast as desired. SINGER electrics may be controlled at a low speed when sewing a short length of seam, where great care must be taken in guiding the material, or at any other speed which may be best for the work.

Types of Electric Sewing Machines

Electric sewing machines are of three principal types: treadle machines with a motor attached, portable machines and cabinet table machines.

The older form of electric sewing machine is the ordinary treadle machine to which a motor has been added, as shown in Fig. 100. The motor is attached with a single screw to the seat on the arm below the hand wheel, the regular belt is replaced by the motor belt, the foot controller connected to the three-pin terminal, the cord plugged into an electric outlet, and the treadle machine has become an electric. The whole process takes only a few minutes and can be done by anyone without electrical or mechanical skill. Should it ever become necessary to revert back to treadle operation, this can be done quickly by slipping off the motor belt and putting on the belt from the band wheel. It is not even necessary to remove the motor.

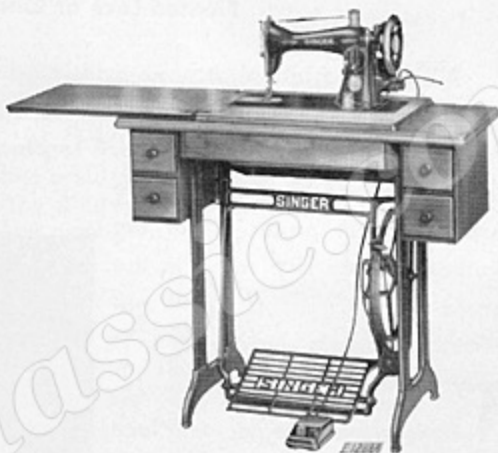


Fig. 100. Treadle Machine Equipped with Motor and Foot Control

Portable Electric Machines

Portable Electric Machines consist of a sewing head with a motor and electric light, in a small and compact carrying case. Fig. 101 shows the 221-1 Portable, beautifully designed along smart, modern lines and handsomely finished. It is a rotary machine with all the modern features of other SINGER electrics, and will sew forward or backward.

Weighing only a trifle over 11 pounds, this machine is easily carried. Fig. 102 shows the machine fitted snugly in the convenient carrying case with its foot controller, electric cord and all attachments, ready to be locked and put away in a closet.

Other types of Portable Electrics (3/4 sized heads) with base and cover and knee control, are also popular with the sewing public.

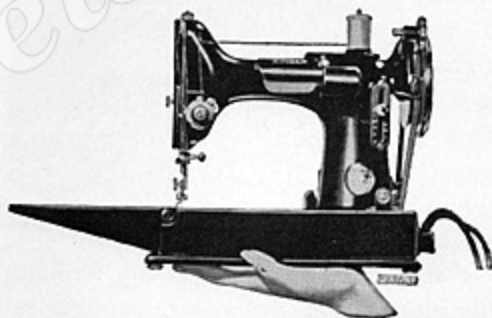


Fig. 101

FEATHERWEIGHT* Portable 221 Machine



Fig. 102

Case Open

Electric Cabinet Machines

To meet the demands of modern homes where every item of equipment must be ornamental as well as useful, electric sewing machines may be obtained in handsome cabinets of graceful and modern designs, entirely concealing the machine when not in use, and serving as a desk or table in any room. The cabinets may be used as a dressing table or side table in the bed room; as a library table, writing desk or stand for lamp in the living room; as a serving table or side table in the dining room; as an ornamental table for lamp, vase, pottery or other decoration, or telephone desk in the hall; and in general as an occasional table for a great variety of uses throughout the home.



Fig. 103. Sewing Stool

The Sewing Stool

This sturdy sewing stool affords a seat of ideal height for operation of a cabinet model sewing machine.

It is also used by many women as a dressing table bench and for other similar purposes. The cushion top lifts to reveal a handy recess for sewing materials. The sewing stool may also be obtained with either round or Queen Anne Legs.

Light for Sewing Machines

The problem of proper illumination for sewing has been solved by the use of a small electric lamp attached to the machine and arranged to throw the rays of light on the bed of the machine without glaring into the eyes of the operator.

Fig. 104 shows this ingenious device, attached to the back of the arm and connected by a short cord to the three-pin terminal body and the cord supplying electricity to the motor.

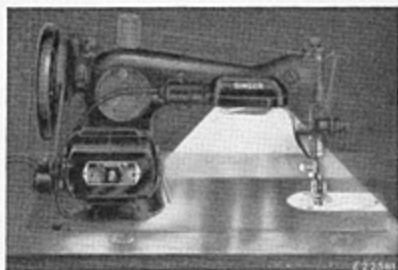


Fig. 104. The Light

With such a light, sewing may be done without eye strain in any part of the home at any time. The light is furnished with all SINGER Electric Machines and may easily be attached to SINGER Hand and Treadle Machines.



Fig. 105
No. 20 Machine

Machine No. 20

Although the SINGER No. 20 Machine is primarily intended to teach little girls to sew, it is used by many college and business girls for occasional mending and altering. This popular "midget model" is very easy to use and is absolutely safe. It clamps on any convenient desk or table.

FASHION AIDS AND SPECIAL ATTACHMENTS THAT EVERY STUDENT CAN USE

These sewing accessories add considerably to the value and pleasure of sewing. Through their use your machine will quickly make dozens of smart trims and finishes that require tedious effort and patience to do by hand.

Instructions in their use may be had at any SINGER SEWING CENTER.



AUTOMATIC ZIGZAGGER — enables you to produce an infinite variety of attractive ornamental designs merely through the interchange of different Stitch Patterns and adjustments of bight and stitch length.



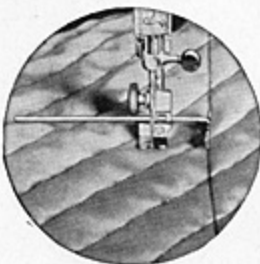
DARNING AND EMBROIDERY ATTACHMENT — stockings, socks, underwear, etc., are more conveniently darned with its aid.



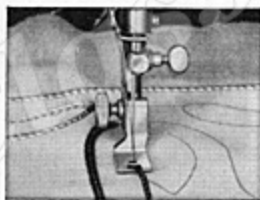
WALKING PRESSER FOOT — Affords the gentle handling of seams that you would give in careful hand sewing. It neither stretches nor eases the seam edge. This foot has become an essential aid to women who wish to obtain perfection in sewing at the most efficient speeds.

Other SINGER Fashion Aids and Special Attachments not illustrated here include:

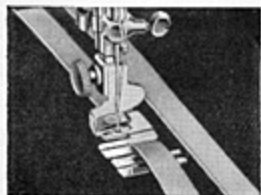
- Cloth Guide
- Flange Hemmer
- Gauge Presser Foot
- Multi-Slotted Binder
- Ruffler
- Stocking Darner
- Tucker



QUILTER — Quilting has become more popular than ever. You can do it faster and better with this handy little aid.



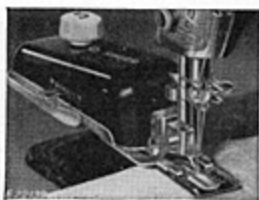
BRAIDER — For decorative braiding on collars, cuffs, children's clothes, etc. As no basting is required, much time is saved with this Fashion Aid.



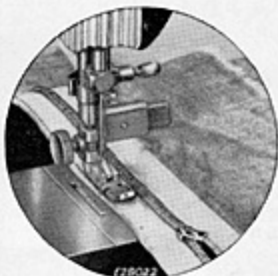
EDGE-STITCHER — Holds the edge of the material under the needle. Edges ruffles, seams and collars. Especially useful for joining lace.



RIPPER AND THREADER AND MATERIAL GRIPPER — You can thread needles or rip seams with the Ripper and Threader. Material Gripper holds one end of the material.



BUTTONHOLER — Produces firmer, more even buttonholes, and in much less time than those made by hand.



ZIPPER FOOT — For stitching on zipper tapes and other edgings. With simple adjustment, it is a right or a left cording foot.



GATHERING FOOT — Shirrs even rows of fine, dainty gathers. Useful for children's clothes, lingerie fashion touches or home furnishings.

NEEDLES AND THREADS

For perfect stitching, the thread should be selected according to the fabric to be stitched and the needle must be the correct size for the thread which must pass freely through the eye of the needle.

**CHART SHOWING THE RELATIONSHIP OF
TYPES OF FABRICS,
THREAD AND NEEDLE SIZES AND
MACHINE STITCH SETTINGS**

Types of Fabrics	Thread Sizes	Needle Sizes	Machine Stitch Settings	
			Inside Seams	Top Stitching
Filmy materials comparable to Net, Marquisette, Chiffon, Silk, Organdy, Ninon, Silk Velvet, Nylon Sheers.	50 Embroidery 100 Cotton OO and OOO Silk Nylon	9	20	30
Sheer materials comparable to Lawn, Dimity, Voile, Batiste, Chiffon, Rayon Sheer, Rayon Crepe, Silk Crepe.	50 Embroidery 80 to 100 Cotton O Silk Synthetics	11	16	20
Lightweight materials comparable to Gingham, Chambray, Sheer Wool Crepe, Taffeta.	60 to 80 Cotton 50 Mercerized A Silk	14	12	18
Medium lightweight materials comparable to Poplin, Pique, Percale, Cretanne, Chintz, Faille, Bengaline, Wool Flannel, Wool Crepe, Wool Jersey.	50 to 70 Cotton 50 Mercerized A Silk	14	12	16
Medium heavy materials comparable to Crash, Gabardine, Rep, Corduroy, Velveteen.	40 to 50 Cotton Heavy Duty Mercerized	16	10	12
Heavy materials comparable to Sailcloth, Denim, Ticking, Drill Cloth.	30 to 40 Cotton 24 to 30 Cotton D Silk	18‡ 19 18 or 19	8	10
Very heavy materials comparable to overcoating.	40 to 60 Linen 20 to 24 Cotton	21	6	8
Plastic materials.	50 Mercerized Cotton	11	10	12

‡Largest size needle that can be used in Machines 221 and 301.

When ordering needles, always specify "Class and Variety 15x1" and state the size and quantity required.

You will obtain the best stitching results from your sewing machine if it is fitted with a SINGER needle.

SINGER* Service

The true test of all business enterprise is the service it gives. The SINGER Organization is governed by the basic idea that the public is entitled to the best of everything — the best sewing machine possible to produce, the best attention, the greatest courtesy and a service that does not end with the sale of a machine.

SINGER shops are located in every city and in nearly every town. Thus SINGER employees are near at hand and easy of communication, always ready to give instruction, to supply parts, needles or oil, and to make such machine adjustments as may be required. This service is unique and is appreciated by teachers and home users alike.

We make special low prices on
SINGER Sewing Machines and
other SINGER* Products for
use in schools. For these special
prices address

SINGER SEWING MACHINE COMPANY

Educational Department

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