

Singer 320K2 User Manual

Greetings from www.andrewcaddle.com.

I have spent many hours copying, editing and converting the attached user manual and I hope it will prove useful to you. It is in PDF format.

While there is at least one other electronic version of this manual available on the net, the quality of the scanning and the insertion of 'watermarks' often renders them difficult to read. I have tried to achieve a quality that is on a par with my original one. For the most part, I think I've been successful.

This version is also 'electronically searchable', ie, if you know a keyword that you want to find, you can search for it via your reader app.

Andrew Caddle





Instructions for using

SINGER

Automatic-Convertible

SWING NEEDLE MACHINE

320K2

THE SINGER MANUFACTURING COMPANY

SINGER 320K*

Automatic-Convertible

SWING-NEEDLE MACHINE



**Straight stitching machine
of highest quality**

**Automatic zigzag machine
with built-in stitch
designs**

**Convertible bed for tubular
and flat work**

THE NEW SINGER CONVERTIBLE AUTOMATIC

You can be confident that this extraordinarily versatile machine is built with the expert care and knowledge that have made SINGER the best-known and respected name in sewing machines the world over for more than a century. With it you can do beautiful ornamental stitches **automatically!** This amazing machine will speed through your straight sewing and then, by simply raising one or more levers, you can do decorative stitching in no more time or with no more effort than it takes to do straight stitching.

The 320K has all of the conveniences of built-in stitches, yet all of the versatility of interchangeable Discs. Change the Disc on the front of the machine and you have added not one but many new stitches. Designs are simply controlled by single lever operation or by the use of a combination of levers.



*Machine 320K with
Flat Work Table Attached*

The convertible bed enables you to sew articles of a curved or cylindrical shape and flat work with equal facility. The tubular bed is quickly converted to a flat bed by adding the Flat Work Table, shown here. The two push buttons A release the Flat Work Table for removal when the tubular bed is required.

SINGER SERVICE

Wherever you go you will find expert, dependable **SINGER*** Service close at hand. SINGER is interested in helping you keep your SINGER Sewing Machine in top running condition. That is why you should always call your SINGER SEWING CENTRE if your machine ever requires adjustment or repair. When you call your SINGER SEWING CENTRE you can be sure of obtaining the service of a trained **SINGER** repair man and can be assured of warranted **SINGER*** parts when needed! Look for the famous red "S" Trade Mark on your SINGER SEWING CENTRE and the ever ready SINGER Service Car.

EVERYTHING FOR THE WOMAN WHO SEWS

The answer to your sewing needs is at your SINGER SEWING CENTRE. There you will find a wide choice of sewing necessities and notions, sewing instructions and guidance and services for covering buttons, hemstitching, making belts and buckles, to mention a few. Look in your telephone directory under SINGER SEWING MACHINE COMPANY.

ADVANCED FEATURES OF THE SINGER 320K

1. **SIMPLICITY**—makes machine easy to operate.
2. **VERSATILITY** — produces beautiful straight stitching, zigzag and automatic decorative stitching.
3. **CONVERTIBILITY**—can be used as a flat bed machine or as a tubular bed machine for stitching articles of a curved or cylindrical nature. See pages 90 to 107 for Tubular Bed applications.
4. **AUTOMATIC STITCHES**—By means of levers—scallops, blind stitched hems, decorative designs, simple mending are automatically accomplished. An amazing number of lovely designs result from using a combination of levers. For a greater variety of stitch designs—more than you have ever thought possible—merely change the disc.
5. **TWIN NEEDLE STITCHING** can be done by using the SINGER Twin-Needle, especially sturdy and accurate because the two needles are bonded in metal.
6. **ROTARY MOTION** sewing hook assures smooth, quiet performance.
7. **FULL VISION BOBBIN CASE** facilitates removal and replacement. Time-saving, extra capacity round bobbin.
8. **GRADUATED TENSION**—within a single turn, needle thread tension is regulated for type of fabric, thread and stitching.
9. **REVERSIBLE FEED** for sewing either forward or backward—easy to back stitch and fasten ends of seams.
10. **STITCH LENGTH INDICATOR** with fingertip regulator.
11. **SMOOTH, SEAMLESS THROAT PLATES** ensure snag-free performance.
12. **PERFECT CONTROL** whether sewing at high or low speeds, the pick-up and stop are quick and effortless.
13. **LIGHT** illuminates working area—prevents eye strain, lamp easily renewed.
14. **ONE-WAY NEEDLE CLAMP** makes it almost impossible to place needle in clamp incorrectly.

ELECTRICAL INFORMATION***The SINGER* Electric Motor***

is located at the back of the machine, and can be supplied for operation on alternating or direct current. Orders must state the catalogue number of the motor, or the voltage, and in the case of alternating current, the number of cycles.

Before Inserting Electric Plug—

be sure that voltage and number of cycles stamped on motor nameplate are within range marked on electric meter installed by electric power company.

Electrical Connections for Machine

Push 3-pin safety plug A, Fig. 1, into 3-pin terminal block at right of machine and connect plug at other end of cord to electric outlet.

Speed Controller

The speed of machine is regulated by amount of pressure on foot controller or knee controller.

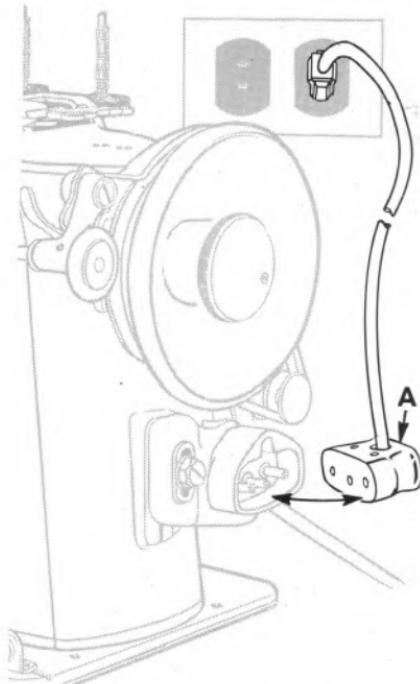


Fig. 1. Electrical Connection for Machine

AUTOMATIC STITCHING

When all stitch levers, shown in Fig. 2, are at their lowest position and the bight control lever T, Fig. 26, in "0" position, highest quality straight stitching is done.

An amazing number of lovely useful stitches are produced automatically when you raise one or more of the stitch levers.

For the most attractive of these combination designs not more than three levers should be used.

Twenty-five additional Discs are furnished with the machine. Each of these Discs is interchangeable with the one on the front of the machine. With each disc, a new variety of combinations can be produced, through the use of one or more levers.

Attached to the outside of the machine is the Blind Stitch disc, which is engaged by the first lever.

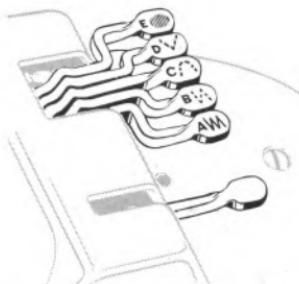


Fig. 2. Stitch Levers

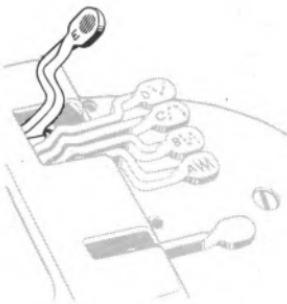


Fig. 3. Stitch Lever E
in "Up" Position

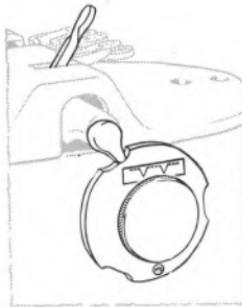


Fig. 4. Blind Stitch Disc No. 3

AUTOMATIC STITCHING

Five automatic stitch designs are built into the machine. Merely lift the designated lever to produce the stitch indicated on the lever. The maximum width of the stitch is achieved when bight is set at 5. Narrower designs result from setting the bight at less than 5. An almost zero stitch length gives a solid design, while a longer stitch length gives an open pattern. Twin needle stitching is done at 3 bight or less.

Zigzag—Lever A

For: Buttonholes

Sewing buttons

Reinforcing seams

Hairline seams

Cording seams

Invisible seams on lace

Applique

Satin stitch

Script stitch

Shadow applique

Satin stitch scallop

Multiple Stitch Zigzag—Lever B

For: Reinforcing

Patching

Mending

Decorative stitching

Overlapped seams

Abutted seams

Elastic seams

Binding blankets

Scallop—Lever C

For: Faced scallops

Decorative stitching

Zigzag Point—Lever D

For: Decorative edging

Decorative border



Applique of bands
or lace

Decorative applique

Ball—Lever E

For: Motif designs

Border designs

Decorative applications

Monograms

**Blind Stitch—Disc 3**

For: Hems

Facings

Zippers

Overedging seams and facings

Decorative stitching

Applying bands and lace

NOTE: To change the direction of pattern produced by Discs 5, 10, 15, 16, 17 and 18, reverse the disc on the shaft.

AUTOMATIC STITCHING

Twenty-five additional Discs are included with this machine. (Discs 14 and 19 are built into the machine as Levers D and E, respectively, and produce designs as shown on **page 7**.) The 25 additional discs produce the following designs:



COMBINATION STITCHES (With Levers)

The following stitches result from using at one time **two or more** of the levers which engage the built-in Discs:



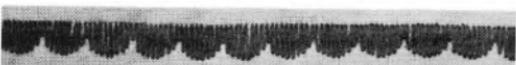
Levers A and B



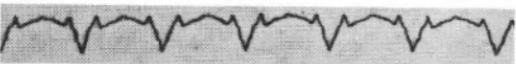
Levers A and C



Levers A and D



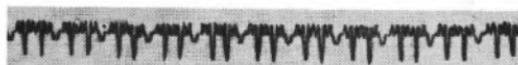
Levers A and E



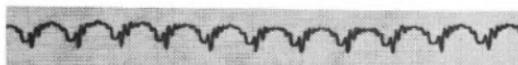
Levers B and C



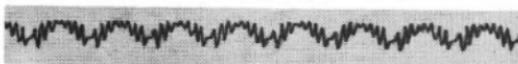
Levers B and D



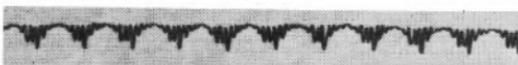
Levers B and E



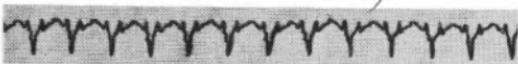
Levers C and E



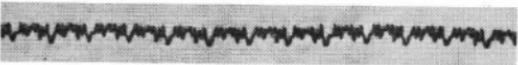
Levers D and E



Levers A, C and E



Levers B, C and D



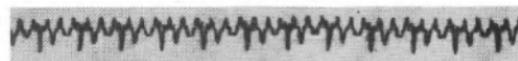
Levers B, D and E

COMBINATION STITCHES
(With Levers and Disc)

The following stitches are produced by using at the same time **one or more** of the levers which engage the built-in Discs and Discs 5 or 6:



Lever A, Disc 5



Lever B, Disc 5



Lever E, Disc 5



Levers A and B, Disc 5



Levers A and E, Disc 5



Levers B and D, Disc 5



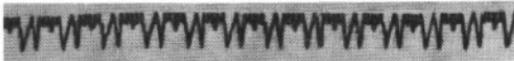
Levers B and E, Disc 5



Levers A, B and E, Disc 5



Lever A, Disc 6



Lever B, Disc 6



Lever D, Disc 6



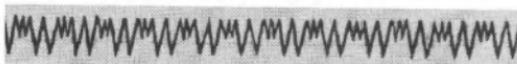
Levers A and E, Disc 6

**COMBINATION STITCHES
(With Levers and Disc)**

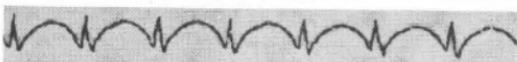
The following stitches are produced by using at the same time **one or more** of the levers which engage the built-in Discs and Discs 7, 8, 9 or 10:



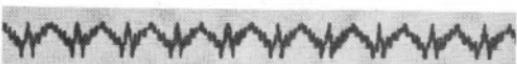
Lever A, Disc 7



Lever B, Disc 7



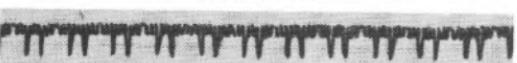
Lever C, Disc 7



Lever D, Disc 7



Lever E, Disc 7



Levers A and B, Disc 7



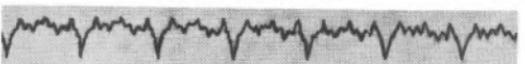
Levers A and D, Disc 7



Levers B and C, Disc 8



Levers B and D, Disc 8



Levers B and D, Disc 9



Lever A, Disc 10



Levers D and E, Disc 10

COMBINATION STITCHES
(With Levers and Disc)

The following stitches are produced by using at the same time **one or more** of the levers which engage the built-in Discs and one of the discs numbered from 11 to 21:



Lever D, Disc 11



Lever A, Disc 17



Lever A, Disc 12



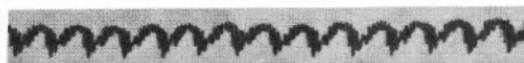
Levers A and E, Disc 18



Lever A, Disc 13



Lever A, Disc 20



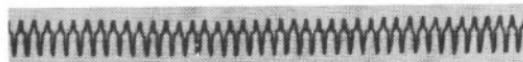
Lever E, Disc 15



Lever A, Disc 21



Lever E, Disc 16



Lever B, Disc 21

COMBINATION STITCHES
(With Levers and Disc)

The following stitches are produced by using at the same time **one or more** of the levers which engage the built-in Discs and one of the discs numbered from 21 to 30.



Lever D, Disc 21



Lever D, Disc 26



Lever E, Disc 21



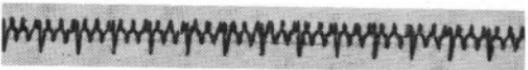
Lever A, Disc 29



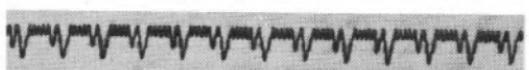
Lever E, Disc 22



Lever A, Disc 30



Lever B, Disc 25



Lever B, Disc 30



Lever A, Disc 26



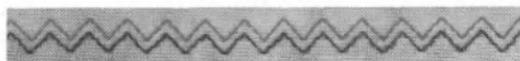
Lever D, Disc 30

TWIN NEEDLE DECORATIVE STITCHING

The following stitches are produced by using one lever at a time or one of the Discs as listed. The bight is limited to 3 and the stitch length is set between 25 and 0. The satin stitch foot is used for closed designs. Scalloping and running stitches are done with the general-purpose presser foot:



Lever A



Lever B



Lever C



Lever D



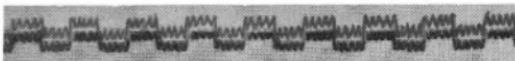
Lever E



Disc 3



Disc 5



Disc 6



Disc 7



Disc 8



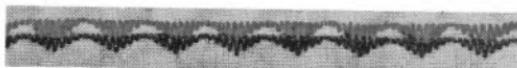
Disc 9



Disc 10

TWIN NEEDLE DECORATIVE STITCHING

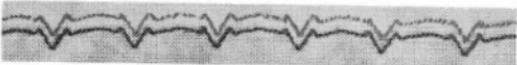
The following stitches are produced by using **one or more** levers and one Disc at the same time as listed. The bight is **limited to 3** and the stitch length is set between 25 and 0. The satin stitch foot is used for closed designs and the scalloping and running stitches are done with the general-purpose presser foot.



Levers A and D



Levers A and E



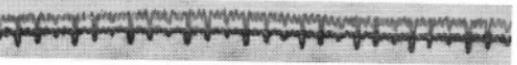
Levers B and C



Levers A, C and E



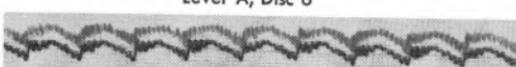
Lever E, Disc 5



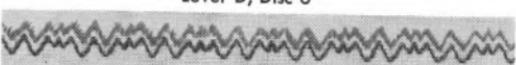
Levers A and B, Disc 5



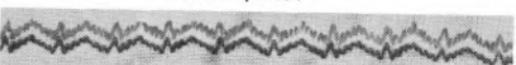
Lever A, Disc 6



Lever D, Disc 6



Lever B, Disc 7



Lever D, Disc 7



Lever A, Disc 10



Levers D and E, Disc 10

FABRIC, THREAD, NEEDLE AND STITCH LENGTH CHART

TYPES OF FABRICS	THREAD SIZES	NEEDLE SIZES	MACHINE STITCH SETTINGS FOR STRAIGHT SEWING	
			INSIDE SEAMS	TOP STITCHING
Filmy materials comparable to Net, Marquisette, Chiffon, Silk and Chiffon Velvets, Voiles, Nimon	50 Embroidery 100 Cotton 50 Silk Nylon Thread	9	15 to 20	15 to 20
Sheer materials comparable to Lawn, Dimity, Synthetic Sheers, Paper Taffetas, Pure Silks, Gossamer Silks, Silk or Synthetic Tricots, Synthetic Velvets, Satins	50 Embroidery 80 to 100 Cotton 50 Silk Nylon Thread	11	12 to 15	15 to 20
Lightweight materials comparable to Gingham, Chambray, Pique, Poplin, Percale, Cretonne, Chintz, Faille, Bengaline, Wool Flannel, Wool Jersey, Wool Crepe, Cotton Velvets and Velveteens, Lightweight Suitings	50 Mercerized 60 to 80 Cotton 50 Silk	14 or 16	12	15 to 18
Medium heavy materials comparable to Corduroy, Crash, Gabardine, Rep, Heavy Suitings and Coatings	Heavy Duty Mer. 40 to 60 Cotton Nylon Thread	16	10	12
Heavy materials comparable to Sailcloth, Denim, Ticking, Overcoatings	30 to 40 Cotton Thread	18	8	10
Plastic materials	50 Embroidery Nylon Thread 50 Mercerized	11 or 14	10	12

When ordering needles, always specify "Class and Variety 206 x 13" and state the size and quantity required.
 See page 43 for ordering TWIN NEEDLES.

NEEDLES AND THREAD

This machine uses a 206x13 Needle—available in Sizes 9, 11, 14, 16 and 18.

For best stitching results, thread should be selected according to fabric to be stitched. Needle must be of correct size for thread to pass freely through eye of needle. Select correct needle according to table on **page 16**. Be sure that needle is not blunt or bent.

NOTE: Thread breakage is sometimes caused by variations in the diameter of thread. Such breakage is overcome by using the next size larger needle.

Use like threads for needle and bobbin. Do not use silk on bobbin and mercerized thread in needle, or vice versa.

TO SET THE NEEDLE

Raise the needle bar to its highest position and loosen needle clamp thumb screw **B**, Fig. 5. Insert needle into clamp as far as it will go with **flat side to the back** and **long groove toward you**. Then tighten thumb screw **B**.

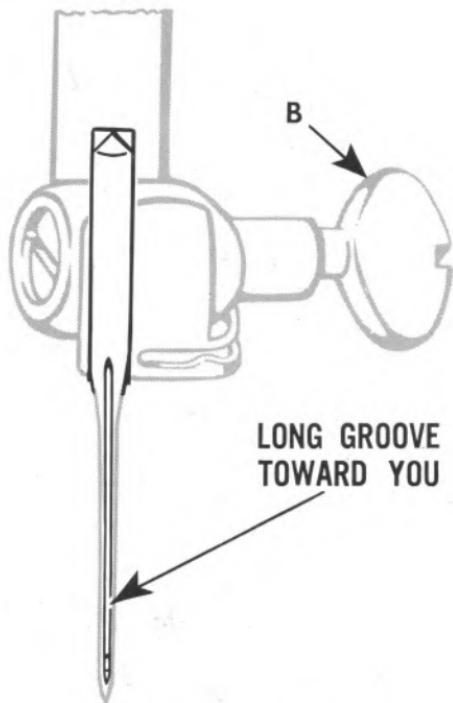


Fig. 5. Set Needle, Flat to Back,
Long Groove Toward You

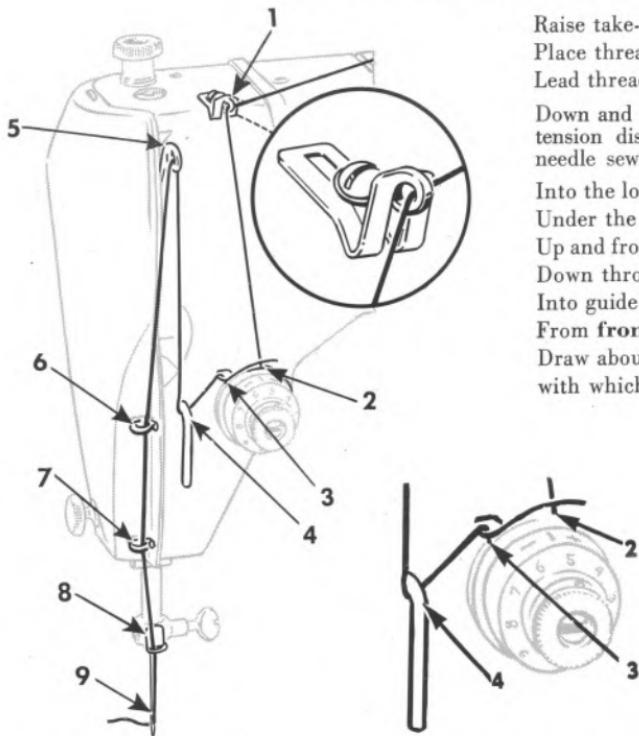
UPPER THREADING—SINGLE NEEDLE

Fig. 6. Upper Threading

Fig. 7. Threading Tension

Fig. 8. Threading Needle from Front to Back

Raise take-up lever 5 to its highest point.

Place thread on spool pin and hold with right hand.

Lead thread into self-threading guide 1 from under side,

Down and from right to left behind or in front of centre tension disc 2 (Centre disc separates threads for twin needle sewing.)

Into the loop of the take-up spring 3,

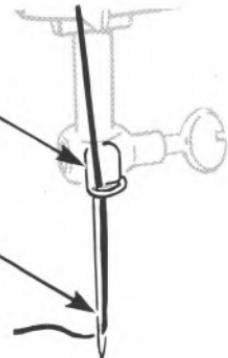
Under the slack thread regulator 4,

Up and from right to left through hole in take-up lever 5,
Down through guides 6 and 7 on face plate,

Into guide 8 on needle clamp,

From front to back through eye of needle 9.

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



TO REMOVE THE BOBBIN

1. Bring take-up lever to its lowest point.



Fig. 9

2. Swing open the hinged bed cover.

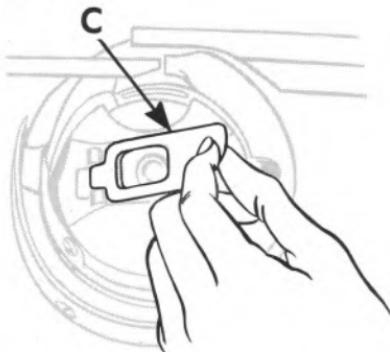


Fig. 10

3. Open bobbin case latch **C**.



Fig. 11

4. Lift case and release latch to remove bobbin.

TO WIND THE BOBBIN

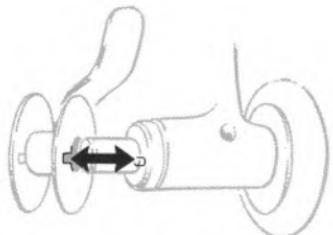


Fig. 12

1. Place bobbin on bobbin winder spindle and turn until pin enters slot in right side of bobbin.

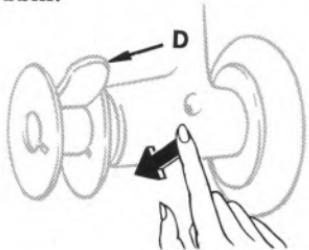


Fig. 13

2. Lock bobbin in place by pressing bobbin winder downward until latch **D** engages.

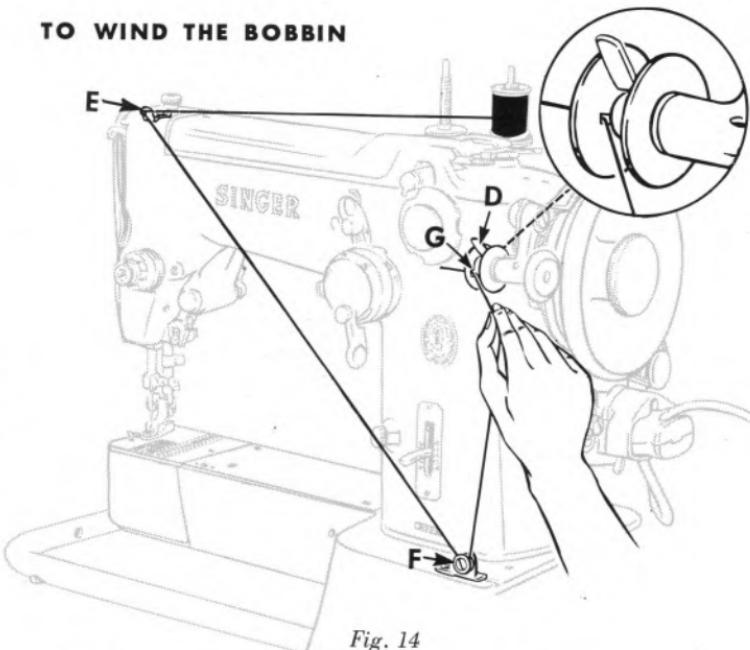


Fig. 14

3. Place spool of thread on either spool pin.

Draw thread through self-threading guide **E** on arm of machine and pass thread down and from left to right under tension **F** on bed. Lead thread up to bobbin and thread from inside, through slot in left side of bobbin **G**.

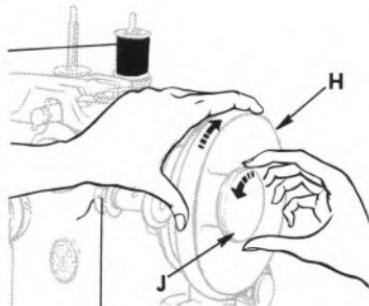


Fig. 15

4. Hold hand wheel **H** with left hand, and with right hand, loosen stop motion screw **J** to release hand wheel from stitching mechanism as shown above.

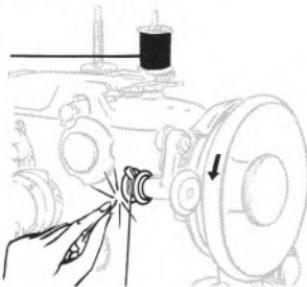


Fig. 16

5. Hold end of thread and press controller pedal as for sewing. End of thread must be held until it breaks off.

Allow tension discs **F**, **Fig. 14**, to control flow of thread so that it winds on bobbin in uniform, level rows. Do not guide or hold thread when winding bobbin.

The bobbin winder will stop automatically when the bobbin is filled. When less than a full bobbin is desired, lift latch **D**. Remove bobbin from spindle and retighten screw **J**, **Fig. 15**.

NOTE: If bobbin does not wind evenly, loosen screw which holds tension bracket **F** in position and move bracket to the left if bobbin winds high on the right; move bracket to the right if bobbin winds high on the left. When bracket is properly centered, thread will wind evenly across bobbin. Retighten tension bracket screw.

Bobbin can be wound while machine is sewing.

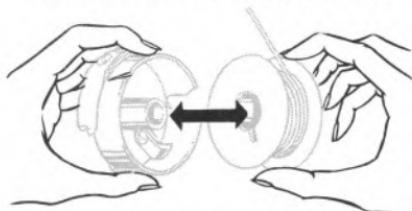
TO THREAD BOBBIN CASE

Fig. 17

1. Hold bobbin so that thread will unwind in direction shown.

Hold bobbin case as shown above and place bobbin into it.



Fig. 18

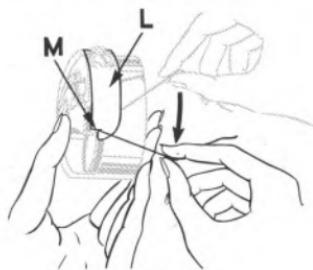


Fig. 19

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

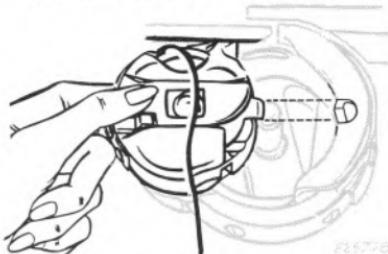
TO REPLACE BOBBIN CASE

Fig. 20

3. Grasp bobbin case between left thumb and forefinger at latch hinge point as shown.

Tilt right edge of bobbin case slightly to engage post.



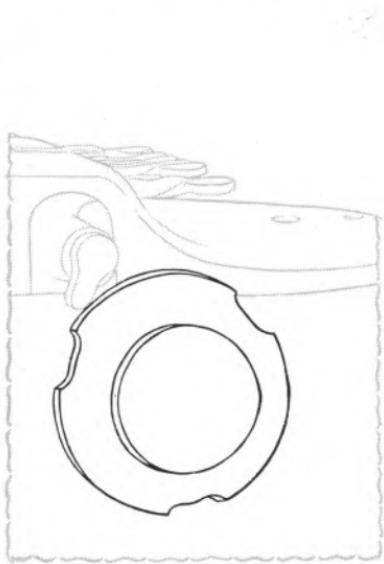
Fig. 21

4. Release bobbin case and press forefinger against bobbin case until it snaps in place as shown.

FOR GENERAL-PURPOSE STITCHING

This SINGER Class 320K machine comes equipped with five built-in stitch designs, one removable Disc, a General-purpose Throat Plate 173303, and a General-purpose Hinged Presser Foot 105250. This throat plate and

presser foot have the same wide opening to accommodate the swing of the needle. With the equipment listed below, the machine can perform straight, zigzag or open ornamental stitching.



*Fig. 22. Removable
FASHION Disc.*

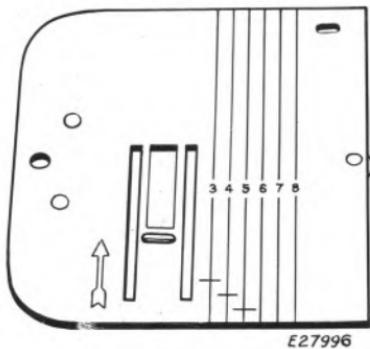
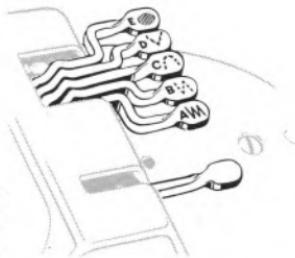


Fig. 23.

General-purpose Throat Plate with guide lines for seam width gauged from centre of needle hole and cross lines for gauging square corners.



*Fig. 24. General-purpose
Hinged Presser Foot*



*Fig. 25. Stitch Levers
A, B, C, D, E*

TO PREPARE FOR SEWING

STRAIGHT STITCHING—Set needle position lever S and bight lever T as shown in Fig. 26. Set stitch levers in downward position, as shown in Fig. 27.

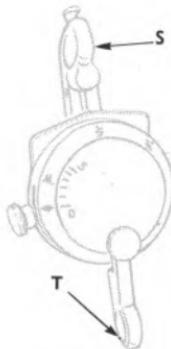


Fig. 26

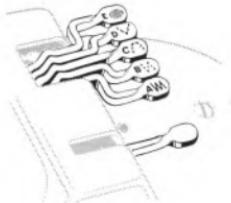


Fig. 27

ZIGZAG STITCHING—Set bight lever as desired between 1 and 5 as shown in Fig. 28, and lift Zigzag Lever A, as shown in Fig. 29.

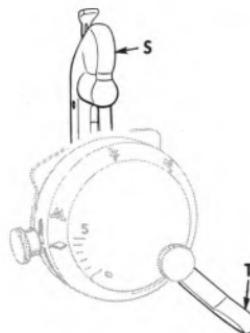


Fig. 28

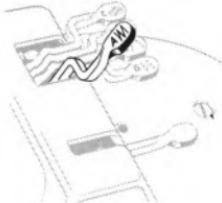


Fig. 29

TO PREPARE FOR SEWING (continued)



Fig. 30

1. Hold end of needle thread with left hand and turn hand wheel toward you until needle goes down and up again, and take-up lever returns to its highest point.

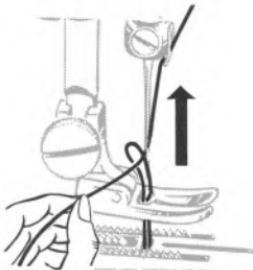


Fig. 31

2. Pull up needle thread and bobbin thread will come with it, as shown in Figs. 30, 31 and 32.



Fig. 32

3. Lay both threads back under presser foot diagonally across feed to the right or left depending upon which side of the needle the material is to be located. See Fig. 33. When the presser foot is lowered the threads will be firmly held between the feed and the presser foot.

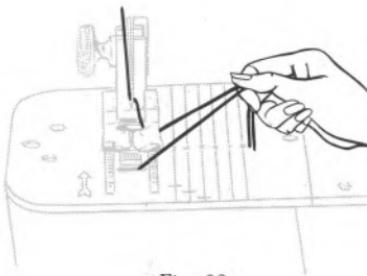


Fig. 33

TO START SEWING

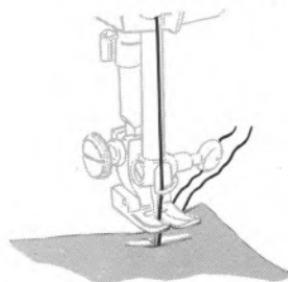


Fig. 34

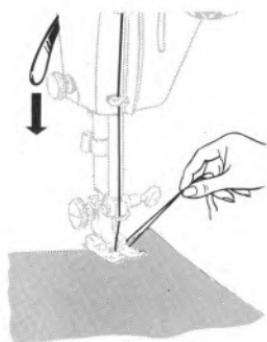


Fig. 35

1. Bring take-up lever to its highest point. Place material under presser foot.

2. Position needle in the fabric.

3. Lower foot. Hold threads which have been drawn to the back toward the right under the foot. Press controller pedal to start machine. The speed depends upon the amount of pressure on the controller pedal.

TO REMOVE THE WORK

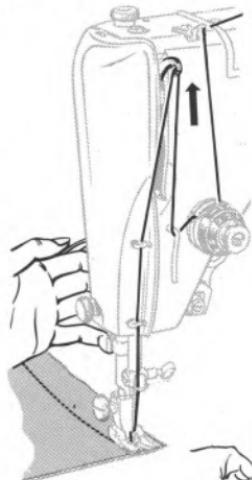


Fig. 36

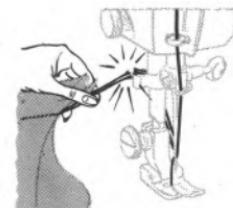


Fig. 37

4. Stop machine with take-up lever at its highest point.

5. Raise foot, draw fabric toward the back and left and sever threads on thread cutter.

TO GUIDE AND SUPPORT MATERIAL

To avoid uneven tension, length of stitching and distorted seams, **never pull the material when sewing.** Never operate the machine without material under the presser foot.



Fig. 38. Guiding Material While Sewing

Most materials require only guiding for best sewing results, as shown above.

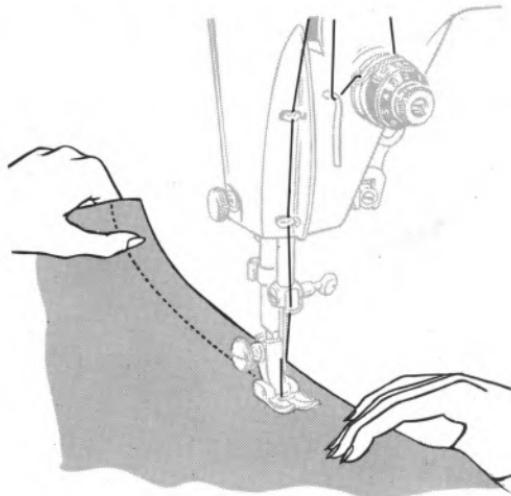


Fig. 39. Supporting Miracle Fabrics

Synthetic fabrics such as nylon, and blends with rayon, puffed weaves, sheers, jersey and tricot which by their nature require light pressure, require support while stitching. This support is given by holding the material taut in back and in front of the foot as the machine stitches and assures a smooth even seam, as shown above.

TO REGULATE LENGTH OF STITCH

Straight Stitching—The numerals on the left of the stitch indicator scale denote the approximate number of stitches per inch.

Zigzag Stitching—The lengthwise distance between needle penetrations is controlled by the stitch regulator.

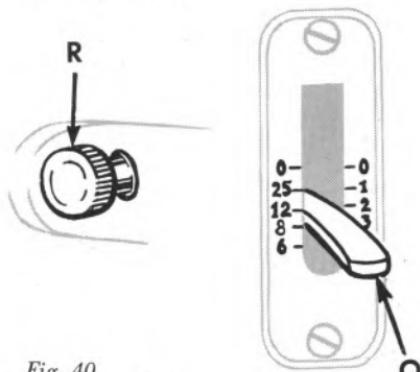


Fig. 40.
Stitch Length Regulator

To lengthen stitch, loosen limit screw **R** enough to allow **top** of stitch regulator lever **Q** to be lowered just below number desired.

Turn limit screw **R** until **top** of stitch lever **Q** rises to setting desired.

To Reverse the Direction of Feed—To feed the material **toward you**, raise the lever **Q**, Fig. 40 as far as it will go. The machine will then stitch in a reverse direction, thus making it easy to "back stitch" and to fasten ends of seams.

STITCH LENGTH FOR SATIN STITCHING



Fig. 41. Satin
Stitch Foot

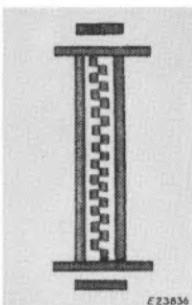


Fig. 42. Satin Stitching
EZ3836

Satin stitching, Fig. 42, is done with stitch regulator lever **Q** set between 25 and 0 position and with the Satin Stitch Foot Fig. 41.

SATIN STITCHING—(Continued)

While stitching on a scrap of material, set stitch regulator lever at 25, then carefully and slowly turn limit screw **R** until stitches are placed closely together, allowing material to feed smoothly and evenly without irregularity.

The exact setting of the stitch length for closed satin stitching will vary with the texture of the fabric, the amount of needle and bobbin thread tension, and with the operator depending upon whether she holds the fabric firmly or lightly. A light tension and light even handling are recommended for satin stitching. Foot 105251 provides a channel for satin stitching and gives smooth uniform results.

Loosely woven or soft fabrics give best results when backed with crisp lawn. This backing is cut away close to the stitching when work is completed.

Where satin or design stitching is to be done on a single thickness of the garment, a backing is essential on most fabrics.

TO START AT GIVEN PLACE IN A DESIGN

Stitch on a scrap of material until that point in the design is reached which is to be reproduced. Remove scrap from under the foot.

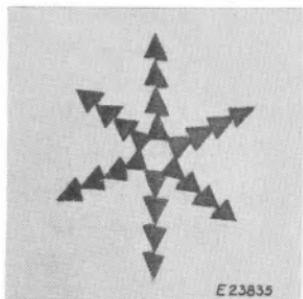


Fig. 43

Fig. 44

Place work under needle. Position needle, hold thread ends, drop presser foot and stitch. This procedure is recommended for scalloping and precise design stitching with all Discs.

BIGHT CONTROL

STRAIGHT STITCHING only is done with straight stitching presser foot 105248, Fig. 46, and throat plate 161242, Fig. 45. For straight stitching with these fittings, set needle position lever S in central position, bight lever T at "0" and all stitch levers in "down" position.

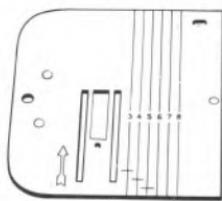


Fig. 45



Fig. 46

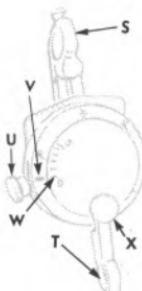


Fig. 47

To lock bight lever T for straight stitching bring "0" mark W opposite indicator V, loosen MAXIMUM BIGHT STOP SCREW X, then retighten. Loosen and move **intermediate** bight regulator screw U until it engages the notch, then retighten.

ZIGZAG AND STRAIGHT STITCHING are done with general-purpose throat plate 173303, Fig. 48, and general-purpose presser foot 105250, Fig. 49, or any of the special feet which have a wide opening. For Zigzag Stitching, lift lever A and set bight control lever T at 1, 2, 3, 4 or 5, depending upon the width of stitch desired. Needle position lever S may be set at right, left or centre, as shown in Fig. 49A.

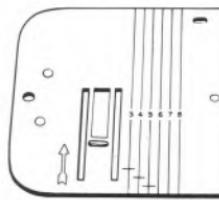


Fig. 48



Fig. 49

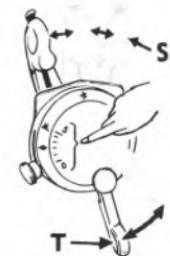


Fig. 49A

AUTOMATIC STITCHING requires the same throat plate and presser feet as for zigzag stitching. Levers B, C, D, E or any of the added Discs may be used. In addition combinations of levers may be used to produce an unlimited variety of combination stitches.

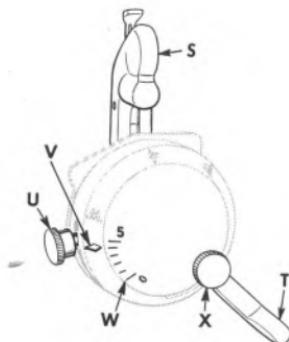


Fig. 50

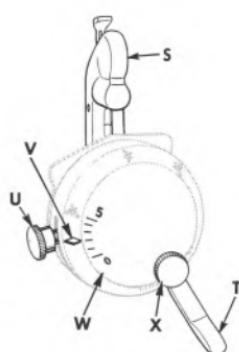


Fig. 51

BIGHT LEVER T, Fig. 50, regulates the width of zigzag stitch or stitch pattern.

BIGHT SCALE is marked "0" to "5". Each line between "0" and "5" denotes the width of stitch pattern obtainable up to a maximum of approximately $\frac{3}{16}$ inch.

BIGHT INDICATOR. Arrow V is the mark to which the desired point on the bight scale is set.

ZERO BIGHT indicates setting for straight stitching.

MAXIMUM BIGHT. The machine will sew the maximum width of stitch or stitch pattern when bight lever is set at "5", approximately $\frac{3}{16}$ inch.

MAXIMUM BIGHT STOP SCREW X restricts the movement of the bight lever to a maximum width of stitch less than 5 when set at a given position.

INTERMEDIATE BIGHT REGULATOR SCREW U, Fig. 51, acts as an intermediate spring-stop for a desired minimum bight. This spring-stop can be passed over to zero bight if desired.

These stops allow you to operate the bight lever manually between set positions without continual reference to the dial while sewing. For example: To limit zigzag stitching between "1" and "4", set bight lever at "4", loosen MAXIMUM BIGHT LEVER STOP SCREW X, then tighten. To set minimum position "1", set bight lever so that arrow V is at "1", loosen INTERMEDIATE BIGHT REGULATOR SCREW U and move it up or down until you feel the notch engaged, then tighten screw U. The bight lever is now set to limit the maximum bight at "4" and the minimum at "1". Other limits such as "1" and "3" or "2" and "3" can be obtained in the same manner, see Fig. 51.

When free movement of the bight lever is desired between zero and a given bight, screw U should be moved down as far as it will go and then securely tightened. Screw X is used to limit the maximum bight.

CAUTION: When Straight Stitching Throat Plate 161242 and Straight Stitching Presser Foot 105248 are used, bight lever T must be set at 0, needle must be set at central position, and all stitch levers must be down.

Do not make any zigzag stitch, needle position or stitch lever adjustments while needle is in material.

NEEDLE POSITION CONTROL

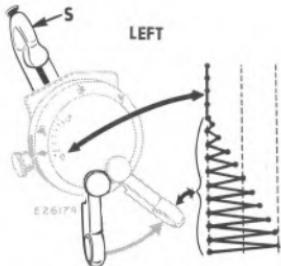


Fig. 52

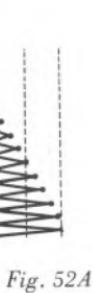


Fig. 52A

When needle position lever S is set to the **left** on the dial, as shown in **Fig. 52**, the machine sews at the extreme left for straight stitching and, as the bight is changed from "0" to "5," the **needle swings from the extreme left**, as shown in **Fig. 52A** for zigzagging.

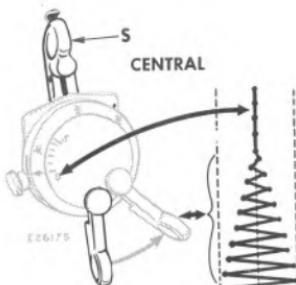


Fig. 53

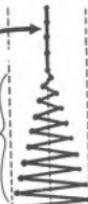


Fig. 53A

When needle position lever S is set at the **central** position, as shown in **Fig. 53**, and as the bight is changed from "0" to "5," the **needle swings equally to the left and right of centre**, as shown in **Fig. 53A**.

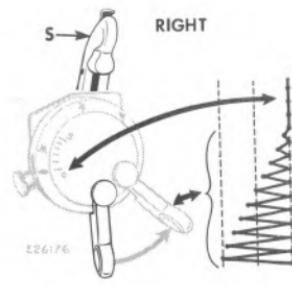


Fig. 54



Fig. 54A

When needle position lever S is set to the **right**, as shown in **Fig. 54**, and as the bight is changed from "0" to "5," the **needle swings from the extreme right**, as shown in **Fig. 54A**.

CAUTION: Left needle position, right needle position and stitch levers in "up" position are used **only** with the all-purpose throat plate, for straight stitching as well as zigzag stitching.

Raise needle out of fabric before changing positions of bight control, needle position and stitch levers.

TO CHANGE DISCS

Raise needle out of material.

Set stitch levers in "down" position.

Remove knurled nut **Y**.

Grasp edges of Disc **Z** and draw it off shaft.

Place new Disc on shaft so that pin **A2** engages at slot **B2**.

Replace nut **Y** and tighten securely. To avoid variation in stitching, Disc must be held in position firmly.

Set bight and needle position levers to desired settings and proceed as for regular sewing.

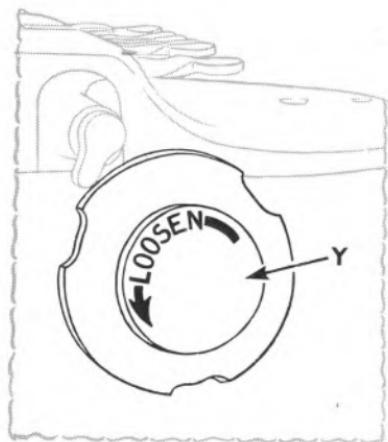


Fig. 55. Step 1. Removing Knurled Nut

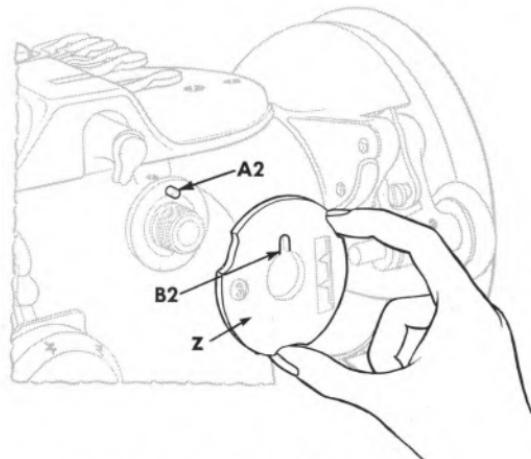


Fig. 56. Step 2. Changing Disc

TO REGULATE PRESSURE ON PRESSER FOOT

The amount of pressure influences the ease with which you achieve a straight seam and uniform stitching. The pressure should be heavy enough to prevent side creepage of material and light enough to carry the material without marking.

The surface finish on fabrics, as well as their weight, determine amount of pressure to be applied. The glazed surface of chintz and polished cotton, the loose nap surface of satin, the deep piled surface of velvet, the delicate and broken surface of lace and brocade, all require a lighter pressure.

To set a light pressure, turn thumb screw **A2**, Fig. 57 upward until fabric moves easily under presser foot without slipping and without showing feed marks.

To set a heavy pressure, turn thumb screw **A2** downward until the fabric moves easily and the seam edges are carried evenly by the foot and the feed. Heavy, spongy fabrics like toweling, chenille, coating, etc., require heavier pressure.

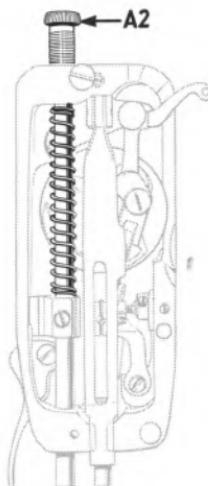


Fig. 57
*Thumb Screw
Adjusted for
Light Pressure*

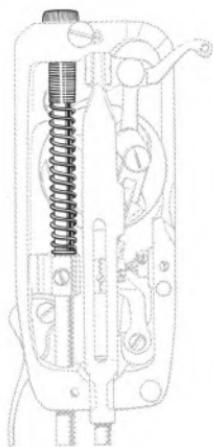
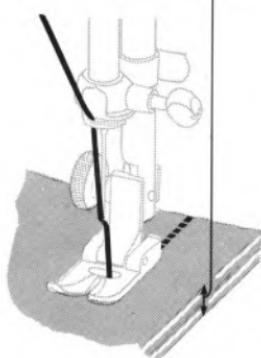
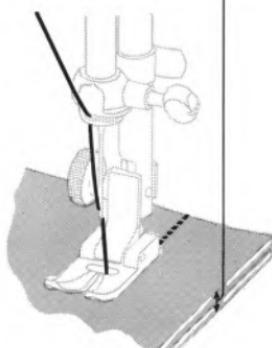
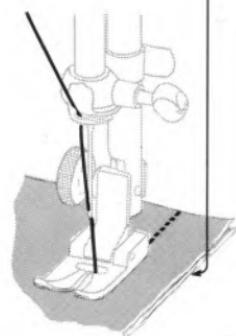


Fig. 58
*Thumb Screw
Adjusted for
Heavy Pressure*

TO REGULATE PRESSURE ON PRESSER FOOT



NEEDLE THREAD TENSION**Thread Tensions for Straight Stitching**

For perfect stitching, the tension on needle and bobbin threads must be heavy enough to pull threads to centre of material and make a firm stitch.

To Regulate Needle Thread Tension

The tension on needle thread can be tested **only** when presser foot is down.

The numerals "0" to "9" on dial **B2** indicate different degrees of tension that can be obtained. The higher the number the greater the tension. The numbers do not denote size of thread.

When tension has been correctly set for average sewing, note number at indicator line **C2**. This setting may be quickly regained should the tension be altered for special work or change in size of thread.

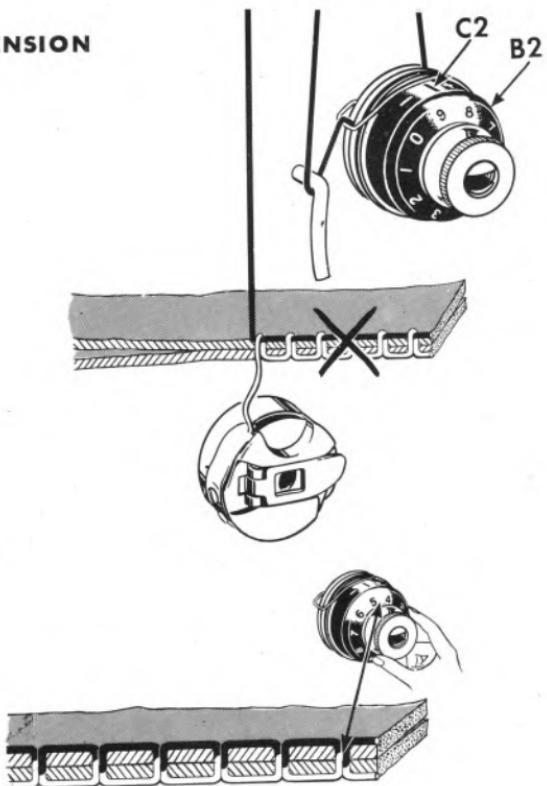


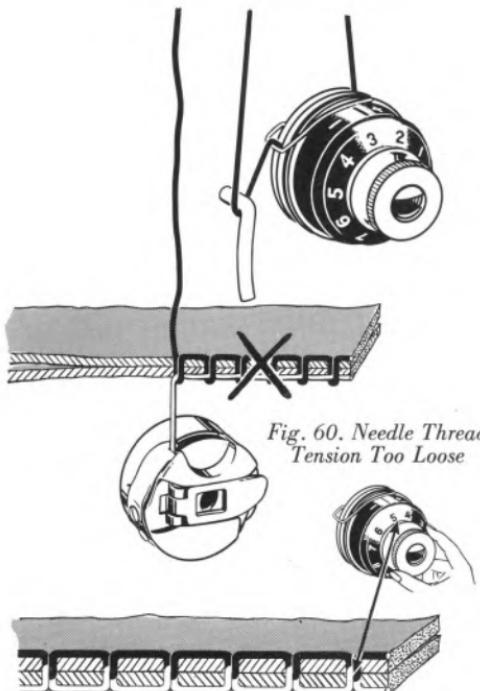
Fig. 59

NEEDLE THREAD TENSION (continued)

In the unbalanced tensions of **Fig. 59**, the needle thread lies straight along top side of material, caused by too heavy tension on needle thread.



In the unbalanced tensions of **Fig. 60**, the bobbin thread lies straight along under side of material, caused by too light tension on needle thread.



Tensions Balanced

TO REGULATE BOBBIN THREAD TENSION

The tension on bobbin thread is regulated by the larger screw nearest the centre of the tension spring, as shown in **Fig. 61**.

When adjusting bobbin thread tension, a slight turn of the screw is all that is needed to make a fine adjustment, because the full range of tension from zero to a maximum is made within $1\frac{1}{4}$ turns of tension regulating screw.

To increase tension, turn this screw gradually over to the right.

To decrease tension, turn this screw gradually over to the left.

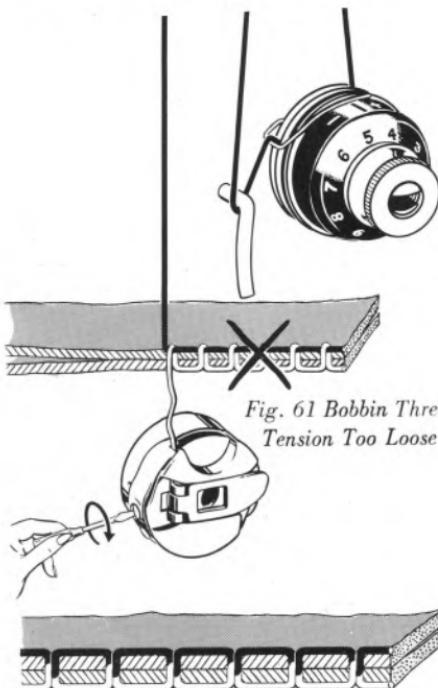
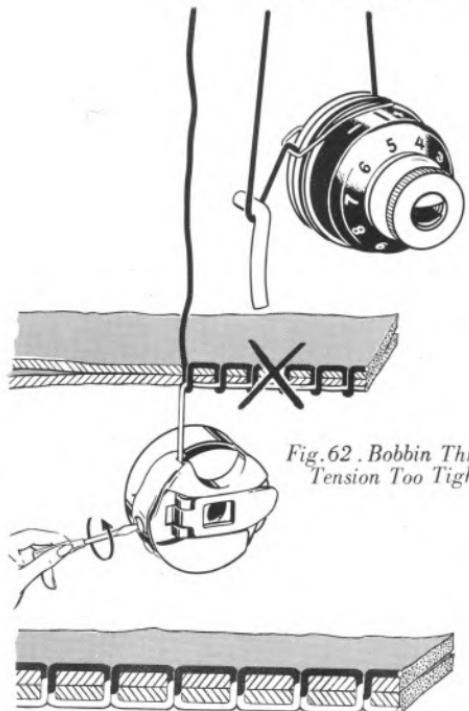
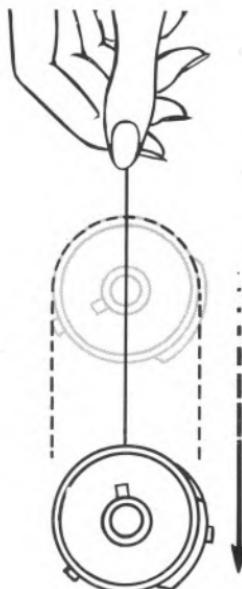


Fig. 61 Bobbin Thread
Tension Too Loose

Balanced Tensions

BOBBIN THREAD TENSION (continued)

Wind bobbin with a 50 yard spool of **fine silk thread**.



Thread bobbin case and adjust tension so that weight of bobbin case with a bobbin of 50 yards of fine silk will cause the case to slide slowly, when held suspended by the thread. See **Fig. 63.**

For correct tension, its downward movement should be **very slow**.

Fig. 63

Satin Stitching

Satin stitching and solid, closed design stitching require a lighter needle thread tension than for straight stitching or open design stitching.



Fig. 64

At "0" there should be a very slight pull on the thread to indicate there is a minimum tension.



Fig. 65

For narrower satin stitching, slightly more tension may be used. Set the dial between 2 and 4, as shown in Fig. 65.

NEEDLE THREAD TENSION

Soft fabrics should be backed with crisp lawn or organdie to prevent cording and the dial should be set at 2 or less, as shown in Fig. 66.



Fig. 66



*Fig. 67.
Corded Satin
Stitching resulting
from excessive
tension*



*Fig. 68.
Smooth Satin
Stitching Produced
with correct
tension*

SHOULD IT BECOME NECESSARY TO REMOVE AND DISASSEMBLE NEEDLE THREAD TENSION

Turn thumb nut **E2** to the left (counter-clockwise) until "O" on dial **G2** stops at centre line on indicator **L2**. To separate pin **F2** in thumb nut **E2** from dial

G2, press in dial, unscrew thumb nut and remove it. Then remove tension parts from stud **N2**, as shown in Fig. 69. **Do not remove stud N2.**

TO REASSEMBLE AND REPLACE NEEDLE THREAD TENSION

Make sure that tension releasing pin **R2** is in place in stud **N2**. Replace the tension parts on the stud **N2** as follows: Replace the three tension discs **M2** with the thick flat disc separating the convex surfaced discs. Then replace the indicator **L2**, open side out, on stud with plus and minus signs at top, then insert tension spring **K2** in indicator with the first (half) coil of this spring straddling the lower half of the stud. Place stop

washer on stud with extension **J2** above stud, so that it clears the first (half) coil of tension spring. Next, place dial **G2** on stud with No. 2 opposite stop washer extension **J2**, then push dial to compress tension spring and at the same time screw thumb nut **E2** on stud, inserting pin **F2** on nut in one of the holes in dial **G2**. Then lower presser bar and turn thumb nut **E2** to left until "O" on dial **G2** stops at centre line on indicator **L2**. Thread the tension and pull thread through tension discs to test amount of tension on thread at "O" position.

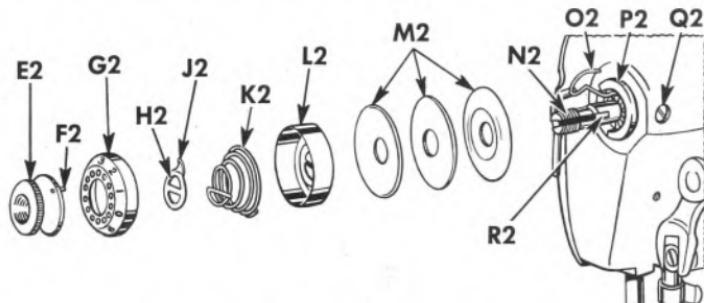


Fig. 69. Needle Thread Tension Assembly

At this point there should be a slight pull on the thread to indicate that there is a minimum tension which gradually increases with the turning of thumb nut **E2** to the right, providing a full range of tensions with one revolution of the thumb nut. If the pull is too strong for a minimum tension, press in dial **G2** to disengage pin **F2** on nut from dial, and

reset pin in one of holes at **left** of previous setting. This resetting will produce less tension at "0". Repeat this process until minimum desired tension is obtained.

If there is no tension at "0", press in dial **G2** and reset pin **F2** on nut in one of holes at **right** of previous setting, repeating this process until a slight minimum tension is obtained. The tension on thread take-up spring **02** and stroke of this spring should be just sufficient to take up slack of needle thread until point of needle reaches fabric in its descent.

To adjust tension on thread take-up spring **02**, remove tension disc assembly, disengage end of spring from groove in tension stud, revolve spring and place its end in the groove which produces correct tension.

To regulate stroke of thread take-up spring **02** loosen screw **Q2**, Fig. 69, and turn the thread take-up spring regulator **P2**, Fig. 69 until correct stroke is obtained, then tighten screw **Q2**.

TO CHANGE THE THROAT PLATE

When changing from General-purpose Throat Plate to Straight Stitching Throat Plate or Embroidery Plate, FIRST raise needle to its highest point, set the needle position lever at its central position and set bight lever at "0". Remove presser foot.

To remove the throat plate. Using screwdriver furnished with machine, raise the **left front corner** of the throat plate enough to clear the pins **B3** and feed dog, as shown in **Fig. 70A**. Then draw the plate to the left.

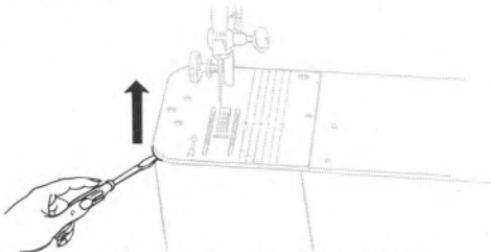


Fig. 70. Removing Throat Plate

To insert the throat plate, slip the screw **C3** which is underneath the plate under the edge of the bed plate, as shown in **Fig. 70A**. Push the plate to the right as far as it will go, then press it down into position so that the pins **B3** and feed dog enter the holes and slot in the plate.

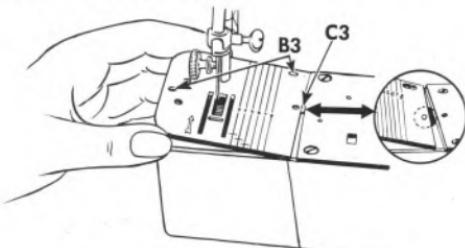


Fig. 70A. Replacing Throat Plate

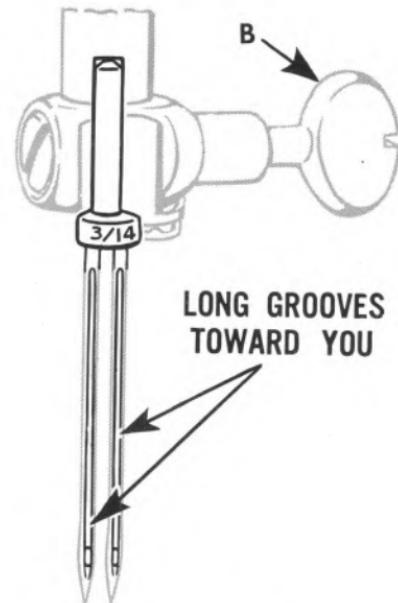
TO SET TWIN NEEDLES

This machine uses a Twin Needle 306 x 1 or 306 x 3 in size 3/14. The markings on the needle indicate the spacing (3) and size of the needle (14).

Follow procedure described for setting single needle (see **page 17**).

CAUTION—Before stitching with Twin Needles be sure the needle position lever is set at central as shown in **Fig. 26, page 24** and that the machine is operated at a bight not exceeding 3. Set bight limit screw **X, Fig. 50, page 31** to lock the bight lever at the point desired but not to exceed 3.

For Twin Needle work the wide slotted throat plate **173303**, and the wide slotted general-purpose presser foot **105250** or the satin stitch foot **105251** must be used. Heavy, closely stitched, solid patterns require the satin stitch foot while straight stitching, scalloping or running stitch designs are more effectively done with the general-purpose presser foot. Failure to use the proper throat plate or presser feet with the wide openings will blunt or break needles.



*Fig. 71. Inserting Twin Needles Into
Needle Clamp*

UPPER THREADING—TWIN NEEDLES

Place a spool on each of the two spool pins.

Thread each point with one thread at a time in the same manner as for single needle threading with exception of the tension. **Pass one thread between the rear and centre tension discs and the second thread between the centre and front tension discs.** Thread the eye of each needle from front to back. Threads must not cross or bind each other.

Start to sew with threads positioned in the same way as when stitching with single needle.



Fig. 72

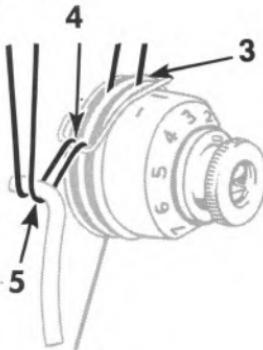


Fig. 73

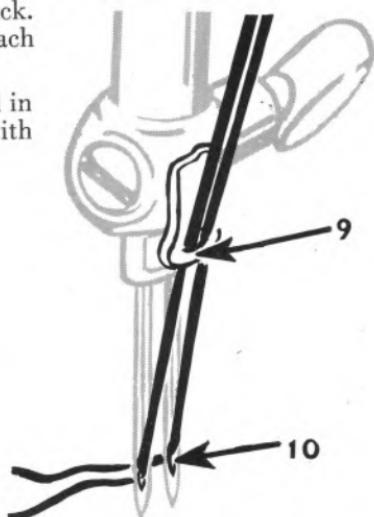


Fig. 74

TWIN NEEDLE STITCHING

Use : General-purpose Throat Plate Central Needle Position
General-purpose Presser Foot 0 Eight
Twin Needle 12 to 25 Stitch

Simple decorative stitching is effective when used to produce a design of straight or diagonal lines of stitching. The two threads carried by the twin needles interlock with a single bobbin thread and when the tensions are increased the fabric between the lines of stitching is raised.

When stitching parallel lines, spacing should be such that foot does not ride over a previously stitched row, unless when using a special air tucking foot (see Form K6071) with parallel clearance grooves in its sole provided for the air tucks previously sewn.

Square corners are made by turning twice while the needles are out of the fabric.

Stitch until the inside needle has reached the corner. Raise presser foot when needles are out of the fabric. Make a one-eighth turn of the fabric, allowing the inside needle to enter for the second time into the corner stitch penetration. Turn hand wheel until the needles go down and up again and rise out of the fabric.

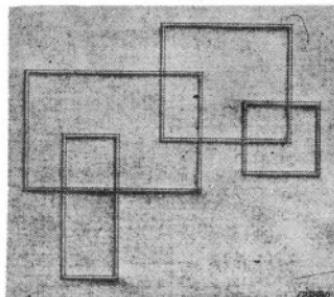


Fig. 75. Twin Needle Stitching

Make the second eighth turn of the fabric. Allow the inside needle to enter for the third time into the corner stitch penetration. Continue to stitch in a straight line. When design is completed draw threads to the underside and tie.

Select thread of a size appropriate for the size of needle being used as well as a thread appropriate for the fabric. The Fabric, Thread, Needle and Stitch Length Chart on **Page 16** is a helpful guide.

SEWING SUGGESTIONS

Breaking of needles might be caused by:

1. Wrong size of needle for thread and material—see page 16.
2. Wrong throat plate or presser foot for the type of work being done.
3. Wrong setting of needle position lever and/or bight lever—see pages 24, 30, 31 and 32.
4. Pulling of material when stitching—see page 27.
5. Loosely fastened presser foot or special fittings.
6. Wrong class of needle—see page 16.

Breaking of needle thread might be caused by:

1. A knot in thread.
2. Thread too coarse for needle—see page 16.
3. Wrong threading—see pages 18 and 44.
4. Upper tension too tight—see pages 36 to 42.
5. Needle blunt or bent.
6. Needle set incorrectly—see pages 17 and 43.
7. Roughened hole in throat plate.
8. Wrong arrangement of threads when starting to sew—see page 25.
9. Needle thread tension too light.
10. Damaged sewing hook.

Breaking of bobbin thread might be caused by:

1. Wrong threading of bobbin case—see page 22.

2. Bobbin thread tension too tight—see pages 36 to 42.

3. Bent Bobbin.
4. Damaged Bobbin Case.

Skipping of stitches might be caused by:

1. Wrong setting of needle—see pages 17 and 43.
2. Needle blunt or bent.
3. Needle too small for thread—see page 16.
4. Damaged presser foot.
5. Damaged throat plate.

Looped stitching might be caused by:

1. Wrong threading—see pages 18 and 44.
2. Tensions set incorrectly—see pages 36 to 42.
3. Needle too fine for thread used.
4. Improper presser foot.

Gathering or Puckering of material might be caused by:

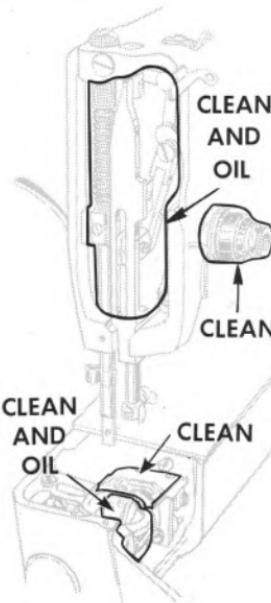
1. Failure to use crisp lawn or organdie backing when zigzag stitching with a very wide bight and/or on sheer materials.
2. Excessive needle and bobbin thread tensions.
3. Improper presser foot.

If machine runs heavily after standing idle for a long period, apply a few drops of paraffin at all oiling points, run the machine for a few minutes, then wipe clean and apply SINGER* Oil as described on pages 47, 48 and 49.

If the suggestions offered here do not correct your sewing problems, call your local SINGER SEWING CENTRE.

PROTECTION AGAINST RUST DAMAGE

Your sewing machine was built to exacting standards of precision and workmanship. Its performance depends on the care and treatment it receives when in use and especially before storing away.



Lint and fluff, if not removed prior to storage will, during humid periods, absorb and hold moisture, and thus accelerate rust damage to highly polished thread handling and other exposed parts. The extent of rust damage would depend upon the length of time the machine remained in idle storage in an unventilated closet, attic or basement room.

Sudden drops in temperature will cause moisture to form on parts, which if not protected by a film of oil, would rust and damage while in storage.

Proper storage care suggests thorough brush-cleaning to remove all traces of lint and fluff, followed by swabbing of all the exposed parts with a lint-free brush, saturated with SINGER oil. See **Fig. 75A** for the areas which should be cleaned and coated with a protective coat of oil.

Fig. 75A

TO OIL THE MACHINE

Preparation

Remove face plate and throat plate and swing back cover plate toward hand wheel.

Remove dust and lint with brush.

CAUTION: Do not brush sewing hook with fine bristle brush. (Fine bristles break off and clog the hook.) Use only brush with stiff bristles.

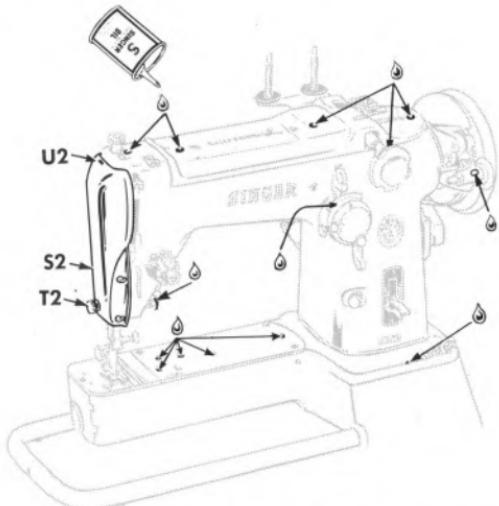


Fig. 76. Front View, Showing Oiling Points

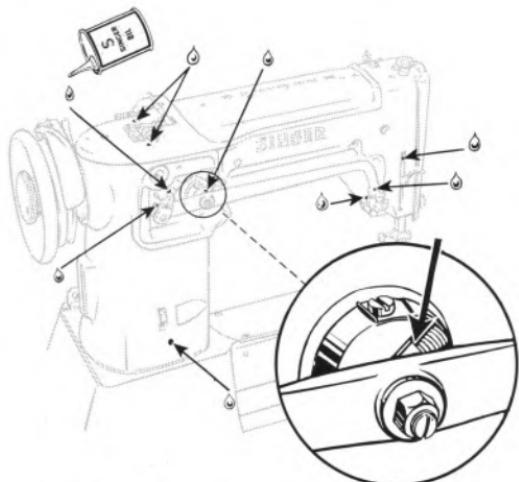


Fig. 77. Rear View, Showing Oiling Points

Oiling

Apply a drop of oil to all points indicated in Figs. 76, 77, 78 and 79.

The Motor Requires No Lubrication.

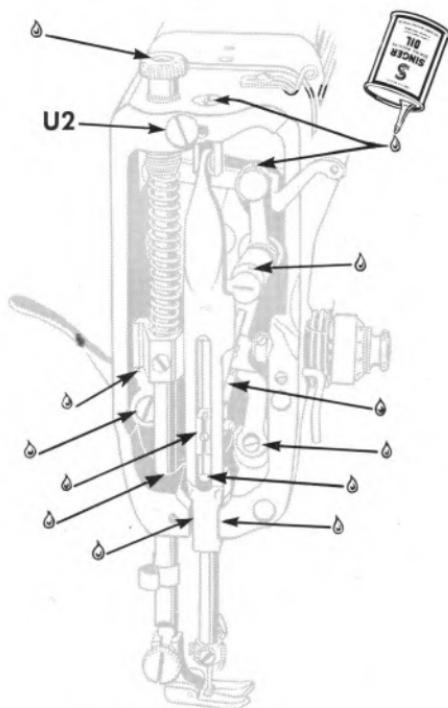


Fig. 78. Face Plate Removed,
Showing Oiling Points

Remove face plate S2, Fig. 76 by taking out thumb screw T2 and slipping plate up and off screw at U2. Oil the points indicated in Fig. 78 and then replace plate S2.

Apply a drop of oil to race of bobbin case holder as shown in Fig. 79.

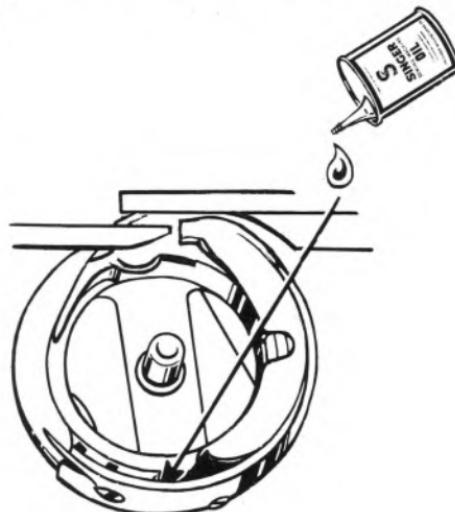


Fig. 79. Oiling Point in
Bobbin Case Holder

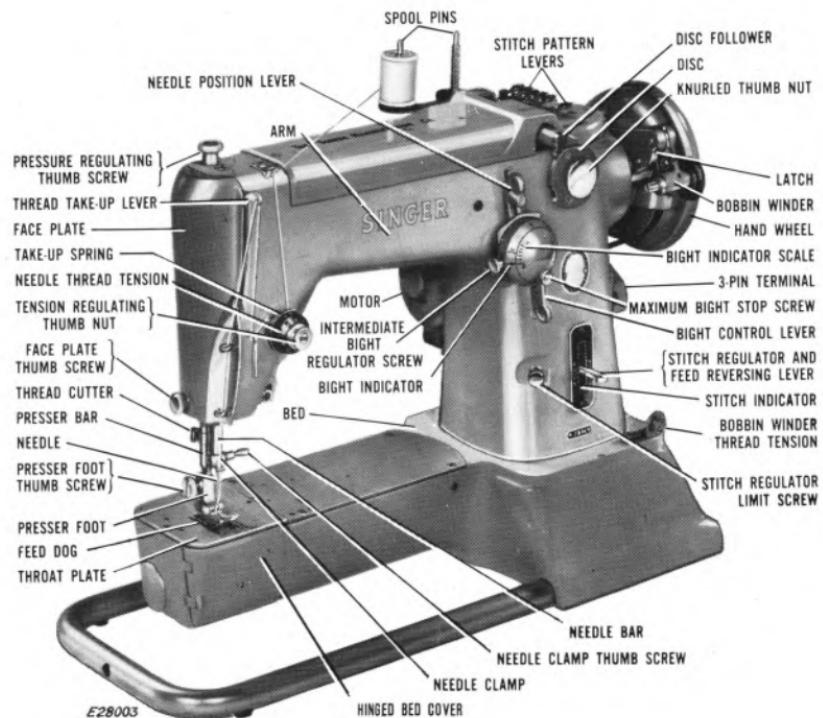


Fig. 80. Names of Principal Parts of 320K Machine

LIGHT

To turn light on reach over machine arm and turn switch **X2**, Fig. 81, to right. To extinguish turn switch to left.

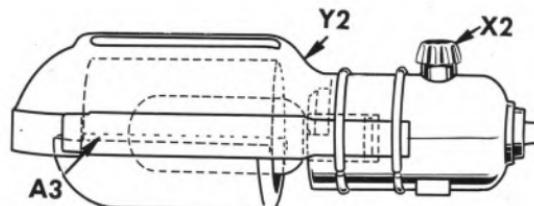
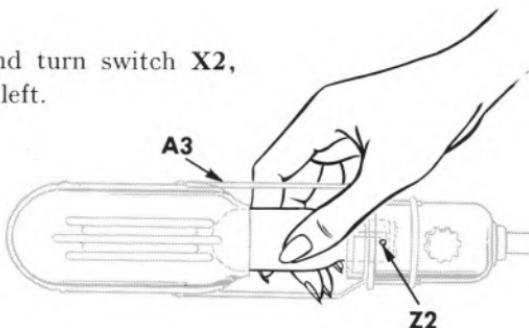


Fig. 81. Light



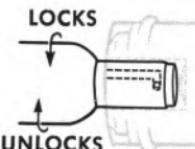
*Fig. 82. Removing
and Replacing the Bulb*

To remove the Bulb

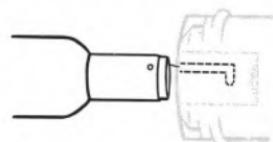
Grasp light socket so that thumb extends over switch **X2**. Then press shade with thumb at **Y2** to release shade from two catches and slide it halfway out of shade holder **A3**. Then press bulb into socket and at same time turn bulb over from machine as far as it will go to unlock pin **Z2** (see Fig. 83). Withdraw the bulb.

To Insert a New Bulb

Press bulb into socket and turn it over toward machine until pin **Z2** enters notch in socket (see Fig. 83). Return shade to its normal position as shown in Fig. 81.



*Fig. 83. Locking or
Unlocking Bulb Pin*



*Fig. 84. Inserting
Bulb in Socket*

**APPLICATION OF SINGER AUTOMATIC
TO CONSTRUCTION OF GARMENTS AND FURNISHINGS**

STRAIGHT STITCHING

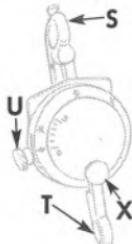


Fig. 85

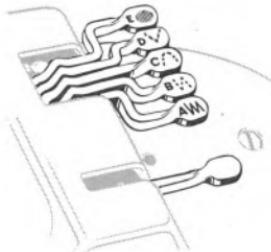


Fig. 86

Straight stitching is accomplished with all stitch levers in a downward position and with the bight set at zero as shown in **Figs. 85** and **86**.

Central needle position is used for straight stitching except in the unusual situation when it is desirable to alter the location of the needle in relationship to the centre of the presser foot.

The Straight Stitching Throat Plate and Straight Stitching Presser Foot (see page 30) are designed to accommodate all fabrics, but especially delicate, soft fabrics, sheers, crepe weaves and all fabrics where the

weave or finish causes the fabric to cling to the needle, either on its upward or downward stroke.

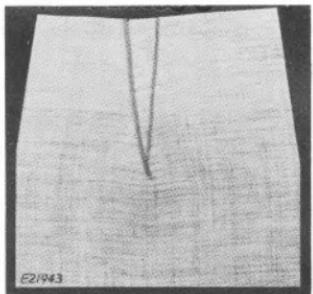
The Straight Stitching Presser Foot is convenient for stitching curved seams, following the edge of a lapped seam, the fold of a pleat or when placing an edge-stitching on a yoke or collar. The narrow right toe affords an excellent view at the right of the needle for such work.

To Lock Bight Control for Straight Stitching. When straight stitching, set needle position lever **S** at central bight lever **T** at zero and set maximum bight stop screw **X** as shown in **Fig. 85**. Then bring the intermediate bight regulator screw **U** upward or downward until you feel the notch engaged.

Test Stitch. It is a good practice to test stitch on a scrap of fabric before stitching a garment to determine the correctness of tensions, length of stitch and pressure. The Fabric, Thread, Needle and Stitch Length Chart on **page 16**, is a useful guide to the correct needle, thread and stitch length for a wide variety of fabrics.



*Fig. 87. Dart Thread
Being Tied*



*Fig. 89. Contour Dart
Along Raw Edges*

FITTED DARTS

Darts are conveniently stayed at the points by stitching beyond the fabric about one-half inch to form a thread chain. Tie these chained threads into a plain knot. The last three or four stitches of a dart must be very close and parallel to the fold, resulting in a smooth shaping of the garment.

TORSO OR SHAPED DARTS

Torso and shaped darts are stronger and more flexible when stitched with a shallow zigzag. Stitch the points for a distance of one inch with straight stitching. Zigzag centre portion.

Use: General-purpose Throat Plate and Presser Foot

Central Needle Position

$\frac{1}{2}$ to 1 Bight

25 Stitch for Zigzag and 12 Stitch for Straight
Stitching

Lever A

CONTOUR DARTS IN INTERFACINGS

Contour darts in interfacings provide permanent shaping without bulk when cut, lapped and zigzag stitched along raw edges as in **Fig. 89**. The dart is often cut away, edges abutted and stayed with straight grain strip of muslin as in **Fig. 90**.

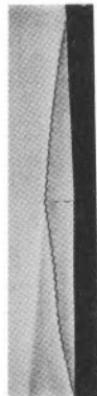
Use: General-purpose Throat Plate and Presser Foot

Central Needle Position

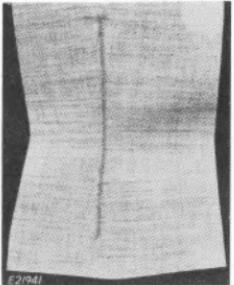
5 Bight

25 Stitch

Lever B



*Fig. 88
Torso or Shaped Darts*



*Fig. 90. Contour Dart
with Abutted Edges*

ZIGZAG SEAMING

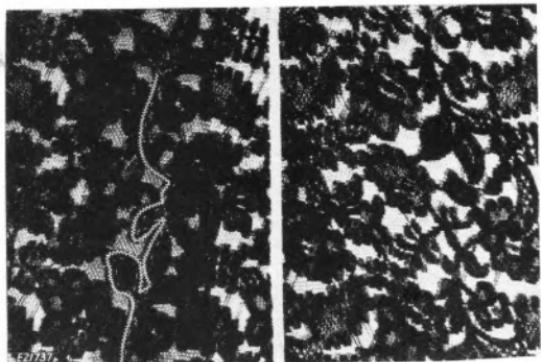


Fig. 91. Invisible Seam for All-Over Lace

Use: General-purpose Throat Plate and
Satin Stitch Foot 105251
Central Needle Position
 $1\frac{1}{2}$ Bight
Above 25 Stitch
Lever A

After seams have been basted and fitted, mark outline of seam on both sections of garment with hand basting. Remove basting that joined seams and lay one section over other with seam lines matching and hand baste. Remove marking stitches. Satin Stitch Foot 105251 is used to follow outline of lace motif that runs through seam lap.

Cut away excess seam up to stitching on both right and wrong sides, using curved embroidery scissors.

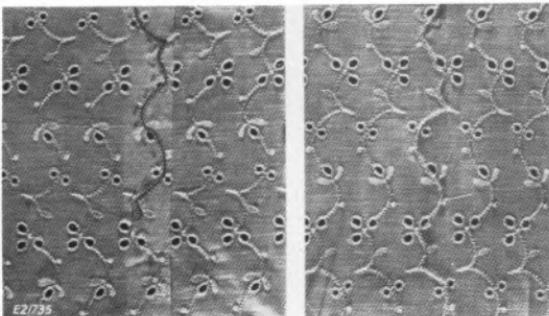


Fig. 92. Invisible Seam for All-Over Lace Embroidery

CORDING SEAM WITH SATIN STITCH FOOT 105251

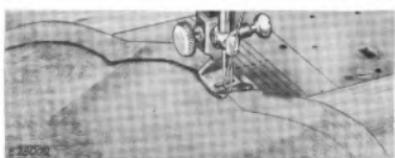


Fig. 93. Cording a Seam with
Satin Stitch Foot 105251

Place a thread through the eye at the front of the foot and lead it underneath the foot. Cover thread with closely spaced zigzag stitches.

Use:
General-purpose Throat
Plate and Satin Stitch Foot
105251
Central Needle Position
2 Bight
Above 25 Stitch
Lever A

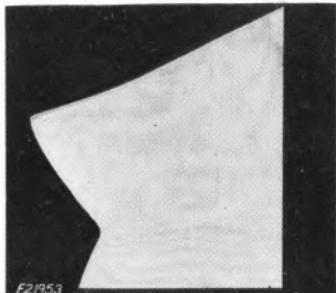


Fig. 94. Hairline Seam in Sheers

HAIRLINE SEAM IN SHEERS

For a dainty hairline seam in sheers that is also fray-proof, follow shaped seam line with a fine cording stitch, then cut surplus seam away close to line of stitching. This type of seam may be used either inside or outside.

RIP-PROOF SEAM FOR LINGERIE

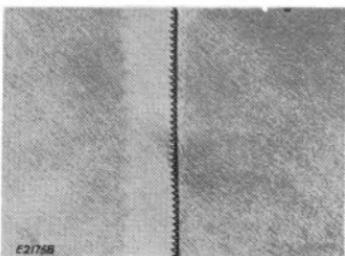


Fig. 95. Rip-proof Seam for Lingerie

For rip-proof seams in lingerie, first straight stitch fitted seam on wrong side and press both edges to one side.

Use:
0 Bight
15 Stitch for Straight Stitching

On right side of garment, top stitch with a fine zigzag stitch allowing needle to enter alternately channel of seam and seam thickness.

Use:
General-purpose Throat Plate and General-purpose
Presser Foot
Central Needle Position
2 Bight
25 Stitch
Lever A for Zigzag Stitching.

INVISIBLE SEAM FOR HORSEHAIR OR NET BANDINGS

Use: General-purpose Throat Plate and
General-purpose Presser Foot
Central Needle Position
1½ Bight
25 Stitch
Lever A

Guide braid or banding so that edges are abutted as they meet
when passing under slot of foot.



Fig. 96. Invisible Seam in Horsehair

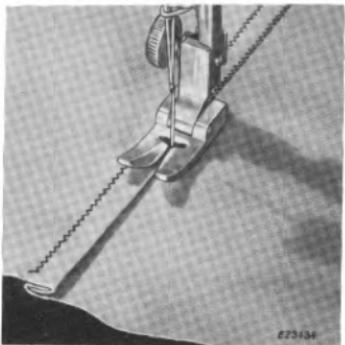


Fig. 97. Heavy Duty Reversible Seam

HEAVY DUTY REVERSIBLE SEAM

Use: General-purpose Throat Plate and Presser Foot
Central Needle Position
2 Bight
Above 12 Stitch
Lever A

For heavy duty, strain-proof seams, use double interlocked seam, zigzagged on both sides. Turn **under** raw edge of one section, and turn **up** raw edge of joining section. Interlock two raw edges and zigzag across one seam on right side and across other seam on wrong side, producing a double fell, doubly reinforced, with elasticity against strain when wearing.

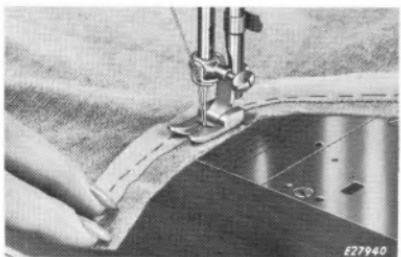
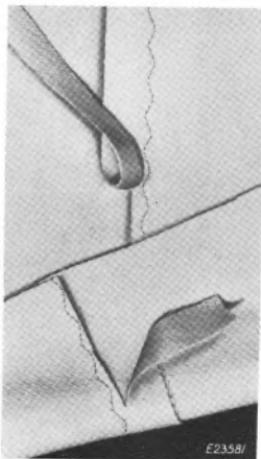
STAYED SEAM FOR JERSEY OR CREPE

Fig. 98. Stayed Seam in Jersey

Seams in fabrics that stretch or bias seams in firm fabrics are often stayed with seam tape for durability. Position seam tape with edge exactly on seam line. If seam is curved, shape seam tape by steaming at the ironing board. Hand baste if necessary. Stitch with fine zigzag stitching. Press seam open, after clipping on curve.

Use: General-purpose Throat Plate and Presser Foot
Central Needle Position
 $\frac{1}{2}$ to 1 Bight
12 to 25 Stitch
Lever A

**OVERLAPPED SEAM FOR INTERLINING**

The seams of an interlining are always overlapped to avoid excessive bulk in a garment. Care must be taken to use the full seam allowance. Stitch in the centre of the overlap with multiple stitch zigzag. Trim excessive width from seam edges. This seaming is durable, flexible and free of bulk.

Use: General-purpose Throat Plate and Presser Foot
Central Needle Position
5 Bight
12 Stitch
Lever B

Fig. 99. Overlapped Seam
for Interlining

SEAM FINISHES**TO OVERCAST OPEN SEAMS**

Turn raw edge toward wrong side and, while stitching, let it pass over flanged toe of General-purpose Presser Foot and through slot. Guide material so that needle, when swinging to the right, pierces material exactly at edge.

Use: General-purpose Throat Plate and Presser Foot
Central Needle Position

2 Bight
15 Stitch
Lever A

TO FINISH SEAMS IN TRICOT OR SHEERS

Step 1. Stitch seam with short straight stitching using Straight Stitching Throat Plate and Straight Stitching Presser Foot. Support material when stitching as described on page 27.

Step 2. Finish seam edges together with stitching controlled with the Blind Stitch Disc No. 3. Trim seam allowance close to stitching. This finish prevents fraying and provides a fine smooth edge.

Use: (for seam finish) General-purpose Throat
Plate and Presser Foot
Central Needle Position
1 or 2 Bight
25 Stitch
Blind Stitch Disc No. 3

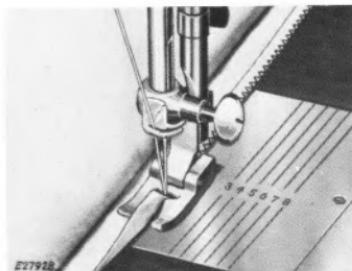


Fig. 100. Overcasting
Open Seams

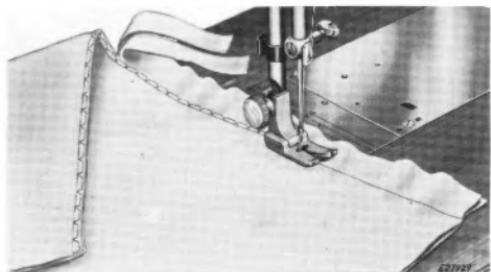


Fig. 101. Finishing Seam in Tricot

TO OVEREDGE SEAMS

Seam edges support the garment and should always carry a durable finish if fit is to be maintained after long wearing. The stitch made with the Blind Stitch Disc is especially durable and free of bulk when used as a seam finish.

When seam edges are pressed in the same direction, they are overedged together, and when pressed open, they are overedged separately.

Use: General-purpose Throat Plate and Presser Foot.

Central Needle Position

4 or 5 Bight

25 Stitch

Blind Stitch Disc No. 3

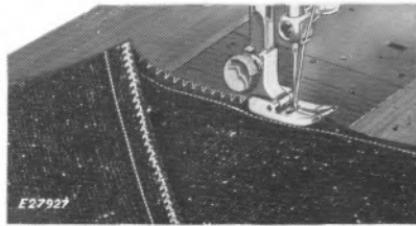


Fig. 102. Overedging Seam Edges Together

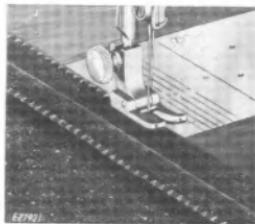


Fig. 103. Overedging Open
Seams in Process

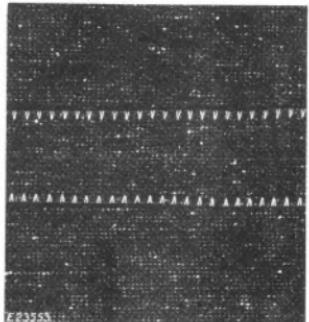


Fig. 104. Overedged Open
Seams—Completed

TO SEW ON BUTTONS

Use: Darning and Embroidery Throat Plate 161238
Button Sewing Foot 189648
Left Needle Position
Approximately 3 Bight
0 Stitch
Lever A

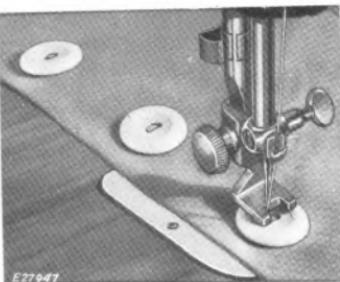


Fig. 105. Sewing on Buttons

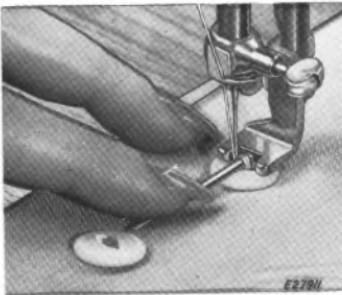
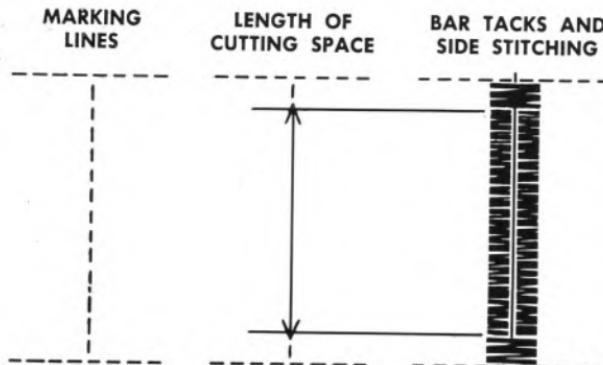


Fig. 106. Sewing on Buttons with Thread Shank

With bight at 0, position button, drop needle through centre of left hole. Then lower button sewing foot. Turn hand wheel over toward you until needle rises. Set bight at approximately 3 or so that needle, on its right swing, enters centre of right hole. Then stitch. Needle should enter each hole six times. To fasten stitch, set bight at 0 and take 3 stitches in left hole of button.

TO SEW ON BUTTONS WITH THREAD SHANK

Follow steps outlined above and in addition, hold pin or needle between holes in button to deepen stitches and provide thread shank. A long thread shank results when the heavy end of sewing machine needle is used in place of a pin. Tighten needle thread tension if stitches appear to be loosely set.

TO MAKE BUTTONHOLES**SETTING THE MACHINE**

Use: Lever A

- Left Needle Position (See page 32)
- General-purpose Throat Plate
- Buttonhole Foot (See Fig. 107, page 63)
- Stitch Length Above 25
- 2 Bight for Side Stitching (Use intermediate bight regulator screw) (See page 31)
- 4 Bight for Bar Tacks (Use maximum bight stop screw X) (See page 31)

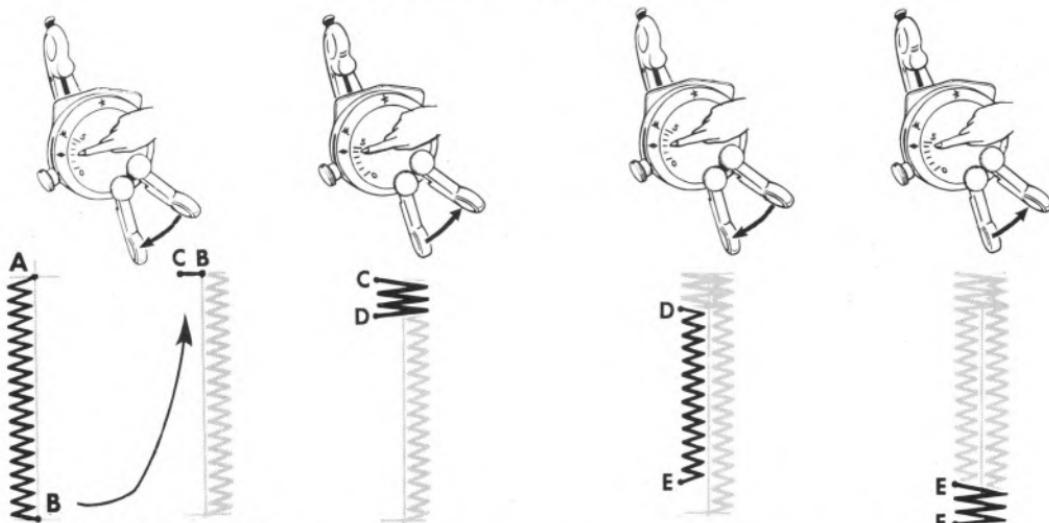
MARKING THE MATERIAL

Mark the position and length of buttonholes with basting stitches or marking chalk. The length of the finished buttonhole will be the cutting space plus $\frac{1}{8}$ inch for bar tacks. The length of the cutting space, the opening through which the button passes, is measured by the width plus the thickness of the button.

NOTE: Bight settings of $2\frac{1}{2}$ for side stitches and 5 for bar tacks make slightly heavier buttonholes. Fabric weight will determine the selection.

Test stitch length and bight setting on a double fold of the same fabric as the garment. Include interfacing if this has been used.

TO MAKE BUTTONHOLES



STITCHING PROCEDURE

Place work under needle, aligning centre marking of buttonhole with point of buttonhole foot. Turn hand wheel toward you so that needle enters fabric at point A.

SIDE STITCHING: Lower foot and stitch to end of marking, leaving needle in fabric at point B.

PIVOTING: Raise foot and using needle as a pivot, turn work. Lower foot and take one stitch without changing bight setting, thus bringing needle to point C. Leave needle in fabric.

BAR TACK: Adjust bight lever to 4 and take no less than six stitches. Stop at point D, needle in fabric.

SIDE STITCHING: Return bight lever to 2 and complete work to point E, approximately six stitches from end of buttonhole. The end marking will appear at lower edge of opening in buttonhole foot.

BAR TACK: Move bight lever to 4 and duplicate tack previously made, ending with needle in work at point F.

TO MAKE BUTTONHOLES



FINISHING: To secure stitching, set bight lever at 0 and take three stitches. Remove work and draw thread to underside, fasten and trim. With sharp embroidery scissors cut opening for the button.

Raised or Gimp Buttonholes



*Fig. 107. Making
Gimp Buttonholes*

Insert No. 8 perle cotton or buttonhole twist thread through eyelet in front of buttonhole foot, as shown in **Fig. 107** and proceed as for regular buttonholes as instructed on **pages 61, 62 and at the left.**

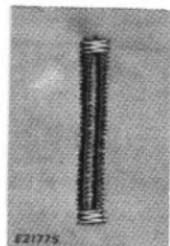
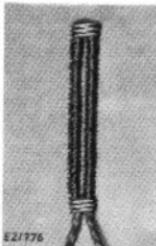
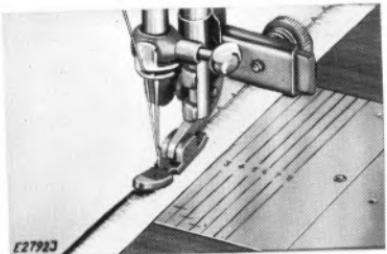


Fig. 108. Gimp Buttonholes

BLIND STITCHED AND DECORATIVE HEMS**BLIND STITCHED HEMS WITH FOLDED EDGE**

*Fig. 109
Blind Stitched Hem in Process*

Blind Stitched hems are appropriate for curtains, draperies, table linens and fabric furnishings. Fold, press and baste hem, keeping basting stitches at least $\frac{1}{4}$ " from upper fold of hem.

Place hem against feed, turning the bulk of the work back in a soft fold. Position needle into folded edge of the hem near this soft fold. The Blind Stitch Disc produces four straight stitches separated by a single sideward stitch to the left. The sideward stitch should pierce the soft fold, resulting in a Blind Stitched hem. The bight is regulated at 2 or 3, depending on the weight and texture of the fabric.

The length of stitch regulates the distance between the Blind Stitches.

Use: General-purpose Throat Plate and
Zipper Foot 161127
Central to Left Needle Position
2 or 3 Bight
12 to 25 Stitch
Blind Stitch Disc No. 3

CAUTION: Left needle position must be used when bight 3 or 4 is used with Zipper Foot at right of needle.

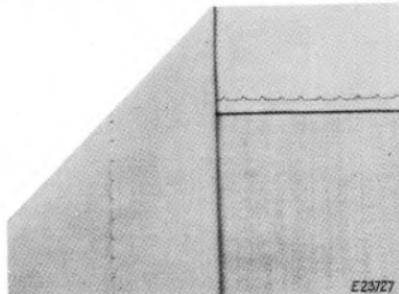


Fig. 110. Blind Stitched Hem Completed

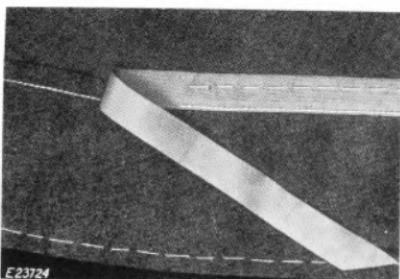
BLIND STITCHED HEM FINISHED WITH SEAM TAPE

Fig. 111. Seam Tape Basted to Hem Edge Before Blind Stitching

Hems in skirts, dresses or coats have extra width at the top of the hem which must be considered. When the garment is flared or circular, there is more fullness in the hem than in straight cut styles. This fullness must be controlled before the hem is finished, if a smooth hem is to result.

After the length of the garment is marked, pin and baste with silk thread one-quarter inch from crease of hem. Press, to shape hem allowance, then measure and cut hem to desired width.

Control fullness by placing a line of straight stitching one-quarter inch from top edge of hem and draw bobbin thread, easing fullness and shaping top of hem to garment. Steam to shrink excess fullness.

Baste and stitch seam tape along this quarter inch control thread. Hand baste through centre of seam tape in preparation for Blind Stitching.

Position hem against feed with inside of garment rolled to the left to form a soft fold at basting line. Blind Stitch hem with the machine equipped as follows:

Use: General-purpose Throat Plate and Presser Foot
Central to Left Needle Position
1 to 3 Bight
12 to 25 Stitch
Blind Stitch Disc No. 3

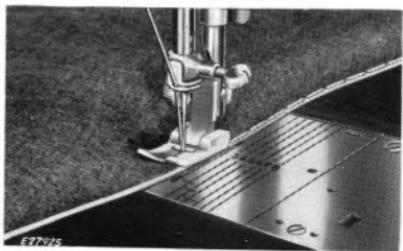


Fig. 112. Blind Stitching Hem Finished with Seam Tape

BLENDED CIRCULAR HEM

Circular hems in heavy coatings are smoothly finished, when the fullness is removed, by cutting away narrow wedges at regular intervals to allow the hem to conform exactly to the shape of the garment. The cut should not extend beyond one inch from the lower fold of the hem. Garments where this treatment is used are usually lined and the lining is carried to one inch from the edge.

Bring cut edges together and stitch with Multiple Stitch Zigzag Disc. Should the fabric be loosely woven, an underlay of thin lawn may be used as a stay on the underside.

Use: General-purpose Throat Plate and Zipper Foot
Central Needle Position
5 Bight
25 Stitch
Lever B

The edge of the hem is finished by overedging with Blind Stitch Disc No. 3, 5 bight, and 25 stitch, as described on **page 59**.

Hand baste hem to garment three-eighths inch

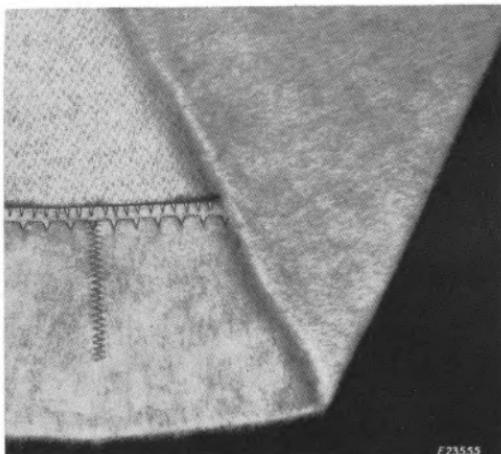
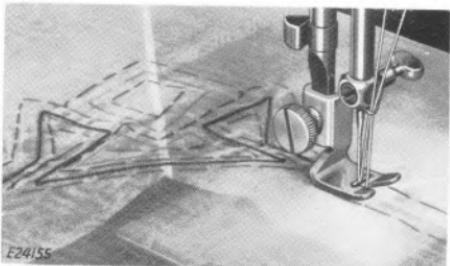
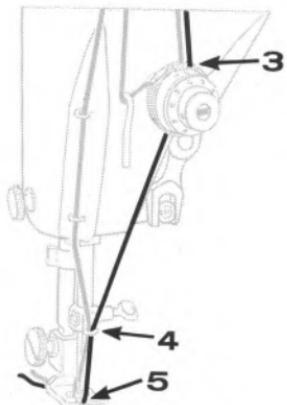
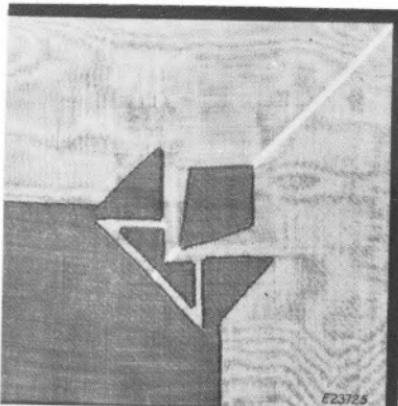


Fig. 113. Blended Circular Hem

from top edge of hem. With Zipper Foot adjusted to right of needle, place hem against feed and turn garment to form a soft roll at basting line as in **Fig. 112, page 65**.

Use: General-purpose Throat Plate
Zipper Foot 161127 (set at right of needle)
Needle Position, slightly left of Centre
2 to 3 Bight
Blind Stitch Disc No. 3

APPLIQUE SHADOW HEMSFig. 114. *Applique Shadow Hem in Process*Fig. 115. *Threading Satin Stitch Foot with Filler Cord*Fig. 116. *Applique Shadow Hem Completed.*

Shadow hems are lovely for table linens of crisp organdie or fine linen, and for dresses or aprons of sheer, crisp fabrics. Baste hem to full depth of design, corners mitred where necessary. Mark design on right side. Draw filler cord through opening in front of Satin Stitch Foot and follow design with fine, closely spaced zigzag stitching. When applique is complete, cut away surplus edge from wrong side close to stitching. See **Fig. 115** for threading of cord. Note that cord is carried from the first thread guide down between centre and front tension discs, **but not into take-up spring**. Carry cord into needle clamp thread guide and then through the opening in the front of the Satin Stitch Foot.

Use: General-purpose Throat Plate
Satin Stitch Foot 105251
Central Needle Position
1 Bright
Almost 0 Stitch
Lever A

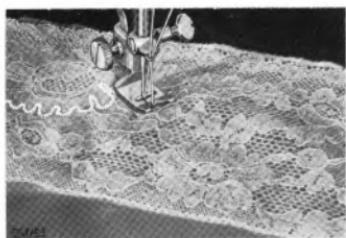
EMBROIDERED LACE OR VIENNA WORK

Fig. 117. Outlining Lace Motif with
Satin Stitch Foot 105251

Use wide lace edging with a definite floral design, and baste into position, where desired, on right side of fabric. First follow upper lines of motif nearest edge, covering filler cord with tiny stitches along lines of motif, and continuing in an unbroken, continuous line. Then choose a section of the motif nearest edge and fully outline this separate motif, repeating at evenly spaced intervals for length of the lace. Finally, remove bastings, cut away surplus lace close to stitches of corded outlines and, from wrong side of garment cut away surplus satin along edge, close to lines of cording.

Embroidered Lace or Vienna Work is characteristic of high-priced lingerie. Yet it may be very quickly and easily accomplished with Satin Stitch Foot, using fine rayon or silk crochet thread as the filler cord to be covered. See page 67 for threading of cord.

Use: General-purpose Throat Plate
Satin Stitch Foot 105251
Central Needle Position
1 Bight
Almost 0 Stitch
Lever A



Fig. 118. Lace Motif Embroidered Into Satin

SHELL STITCHED HEMS

Shell stitched hems provide a soft, ornamental finish for delicate fabrics, particularly when material is cut on the bias.

Lower shell hemmer over raw edge of fabric on wrong side of material. Take one stitch, raise shell hemmer. Draw the work back and cut threads. Holding both ends of attached needle thread, lead raw edge of fabric lightly into scroll of hemmer, drawing on threads to carry it through. On reaching slot of hemmer, lower the needle into hem, then lower hemmer and stitch.



Fig. 120
Shell Stitched Hem in Process

The automatic stitch designs lend further variation and interest to shell hems.

The shell hems illustrated are stitched with Blind Stitch Disc at 3 bight and 25 stitch (Fig. 121), and with Multiple Stitch Lever B at 5 bight and 25 stitch (Fig. 122).

Use:
General-purpose Throat Plate
Shell Hemmer 189653
Central Needle Position
5 Bight
8 Stitch
Lever A or B, Blind Stitch
Disc No. 3 or Shell Edge
Disc No. 7

Many variations of the soft
scallop may be obtained by
using different stitch settings
and threads.



Fig. 119. Leading Raw Edge Into Scroll of Shell Hemmer

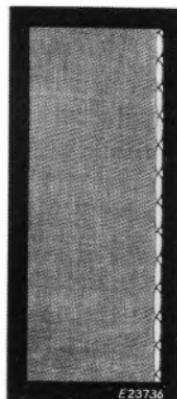


Fig. 121
Completed Shell Hems

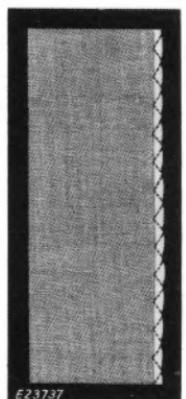


Fig. 122
Completed Shell Hems

THE BINDER

*Fig. 123. Binder
No. 161233*

BIAS BOUND EDGES

The Binder is used to apply commercial binding as well as self-fabric bias to an unfinished edge.

This colourful trim is attractive when applied to children's wear, aprons and fabric furnishings. It is a practical finish for seam edges that ravel and for making bound seams.

The oval needle hole of the attachment will accommodate both straight and zigzag stitching.

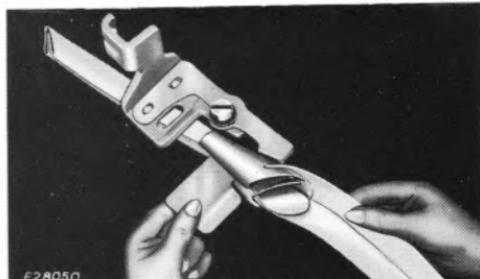


Fig. 124. Inserting Folded Binding in Binder

THREADING BINDER

Pre-folded commercial bias is inserted from the right into the outside slot in the binder scroll.

Cut the binding diagonally to form a long point. Insert the pointed end into the slot and pull through the scroll until the evenly folded edges are under the needle.

Use: General-purpose Throat Plate and Binder

Lever A Zigzag Stitch or Straight Stitch

2 to 5 Bight

8 to 12 Stitch Length

Central Needle Position

0 Bight

10 to 15 Stitch Length

Central Needle Position

BIAS BOUND EDGES

ADJUSTMENT AND OPERATION OF BINDER

The edge to be bound is guided into the centre of the scroll. Stitching is positioned close to the edge of the binding by adjusting the scroll portion of the attachment. Loosen the adjusting screw and move the scroll to the right to bring the stitching closer to the binding edge, and to the left for a wider adjustment. Care should be taken to see that the screw is well tightened after making an adjustment. Never pull the binding as it feeds through the scroll. Allow the attachment to do the work, merely guide the edge to be bound well into the centre of the scroll as you stitch.

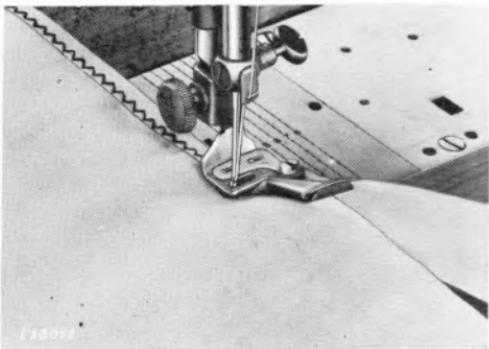


Fig. 126. Applying Unfolded Bias Binding With Zigzag Stitch

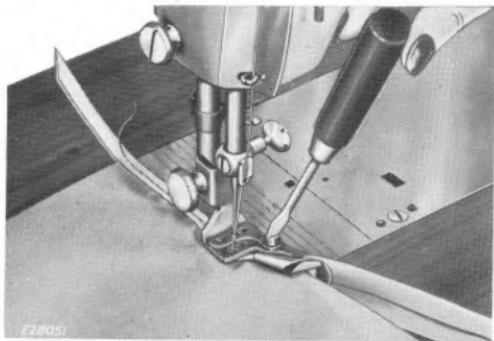


Fig. 125. Adjusting the Binder

SELF-FABRIC BINDING

Self-fabric bias binding should be cut $1\frac{5}{16}$ " wide on the true bias. Insert the unfolded binding directly into the two folds at the end of the scroll and draw it back under the needle. As the binding passes through the scroll the raw edges are turned in. Use either straight or zigzag stitching. Adjust the position of the scroll, being sure that the needle enters the double fold of the binding on both sides of the work.

BINDING CURVED EDGES

Curved edges can be bound as easily as straight edges, but require slightly different fabric handling. Inside curves are straightened as they are fed into the binder. If the fabric is soft and has a tendency to stretch, reinforce the edge with a single row of stitching before binding.

Outside curves tend to lead away from the centre slot of the scroll and should be guided so that a full seam width is taken at the needle point. Do not attempt to pull or straighten fabric into the full length of the scroll.

Zigzag stitched binding affords a particularly elastic and durable flat finish for curved edges. When using a straight stitch a wider adjustment of the binder scroll is required than is necessary when binding a straight edge.

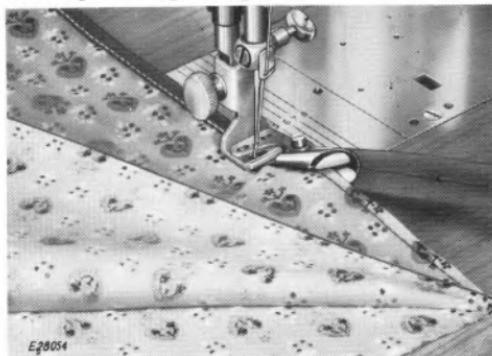


Fig. 128. Binding a Seam

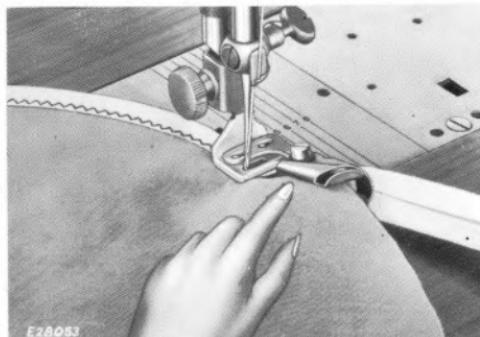


Fig. 127. Binding Curved Edge

BOUND SEAMS

Two seam edges may be bound together to form a durable seam that is especially useful in household articles, such as cushions or simple slip-on covers of fabric or plastic. The seam edges are first joined with straight stitching (wrong sides together), the seam allowance trimmed to a scant $\frac{1}{4}$ ", and then inserted into the scroll of the Binder, and bound as a single edge.

NET BOUND SEAMS

Delicate fabrics that fray easily, like chiffon, velvets, sheer metallics, etc., may have seam edges bound with nylon net. Cut net into strips a half-inch wide, and insert, unfolded, into outside slot of binder.

Use: Central Needle Position
12 to 25 Stitch Length

Bight 2
Lever A

Feed seam edges into binder scroll with right side of fabric up. This finish will insure against fraying without adding bulk.

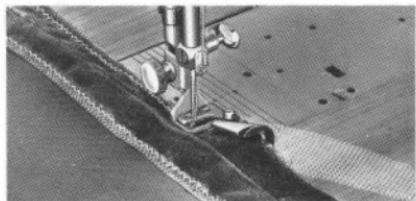


Fig. 129. Net Bound Seam on Velvet with Zigzag Stitch

DECORATIVE BOUND EDGES

Bindings are given added interest when stitched with decorative automatic designs. Merely select the disc, regulate stitch length, bight and needle position and stitch as easily as if straight stitching.

Use: General-purpose Throat Plate
Central Needle Position
Stitch Length Above 25
Stitch Pattern (Select desired disc)
Binder
Bight 3 to 5

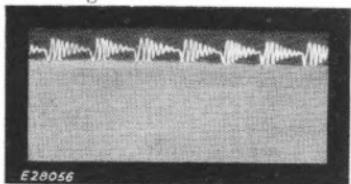


Fig. 130. Binding with Design made with Disc No. 5

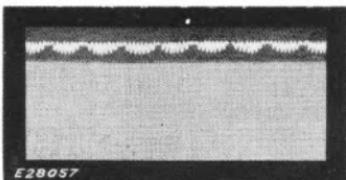


Fig. 131. Binding with Design made with Disc No. 8

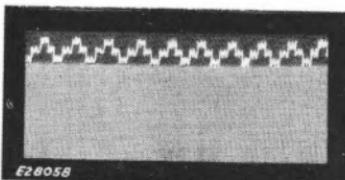


Fig. 132. Binding with Design made with Disc No. 12

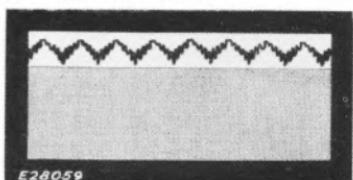


Fig. 133. Binding with Design made with Lever D

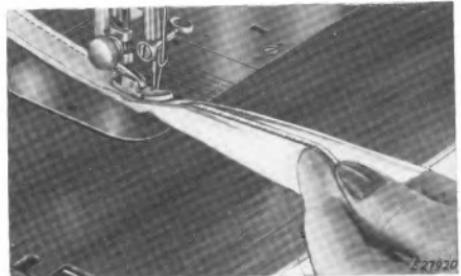
CORDED EDGES WITH FABRIC COVERED CORD

Fig. 134. Covering Cord with Zipper Foot

Use: General-purpose Throat Plate, or
Straight Stitching Throat Plate
Central Needle Position
0 Bight
Zipper Foot 161127

To cover Cord, cut bias strip twice the width of the seam allowance plus cord, adjust Zipper Foot at left of needle, fold bias over cord, raw edges even, and position needle close to cord, but not into it, and lower the foot. Stitch, guiding the edge of the foot next to the cord, but do not crowd the foot against it.

Machine Baste Cord to right side of garment using Zipper Foot adjusted to right of needle.

Apply facing and position under needle, with facing next to feed and garment next to foot, so that basting stitch will be in view. Stitch, this time crowding the foot against the cording and making stitches between the basting and the cording.

Before turning work, blend seams by cutting away seam allowances, the bias to $\frac{1}{8}$ " and the garment and facing to $\frac{1}{4}$ ".

Corded seams and edges lend smartness to tailored garments. Cushion covers and slip covers are usually finished with corded seams. The Zipper Foot is essential for making corded seams and edges and has many applications in addition to stitching zippers and hems.

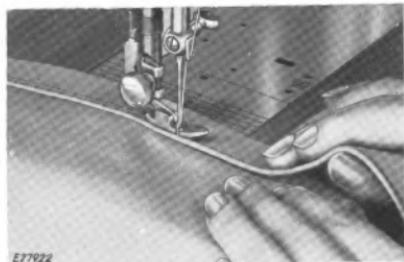


Fig. 135. Machine Basting Covered Cord to Garment

SCALLOPED EDGES

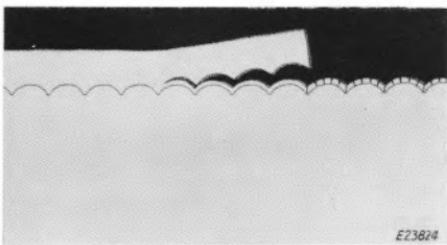


Fig. 136. Scalloped Edge in Process

Use: General-purpose Throat Plate and
General-purpose Presser Foot
Central Needle Position
5 Bight
12 to 25 Stitch, as desired
Lever C

Stitch in the same way as when making a straight seam. The garment section will pass straight under the presser foot while the needle follows a scallop pattern. Trim seam allowance to less than $\frac{1}{8}$ " and clip into each point between scallops.

Blend this narrow seam by clipping small wedges at regular intervals. When the scallop is turned, the seamed scallop edge will have a smooth even contour.

When the Scallop Disc is in use, the needle moves to form a scallop while the fabric moves in a straight line under the presser foot. The depth of the scallop is controlled by the bight setting. A 5 bight produces a scallop approximately $\frac{3}{16}$ " deep and each bight setting of less than 5 produces a correspondingly narrower scallop.

The length of scallop varies with the stitch length. A 12 stitch and a 5 bight produce a scallop approximately $1\frac{1}{4}$ " in length, a 25 stitch and 5 bight give approximately a $\frac{3}{4}$ " scallop, while a stitch length above 25 produces a scallop of $\frac{1}{2}$ " in length or less depending upon the stitch.

A single straight stitch separates each scallop providing space for cutting when the seam edges are trimmed and turned to form the finished, faced scallop edge.

Scalloped edges are used extensively on blouses, dresses and on children's wear.

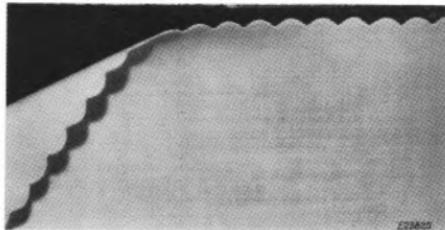


Fig. 137. Scalloped Edge Completed

MONOGRAMS

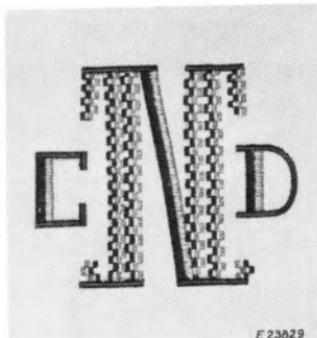
E23628

Fig. 138

Attractive variation is given simple monograms when one or more automatic stitch patterns are introduced. Select a monogram from the many transfer designs available or sketch one to suit your purpose.

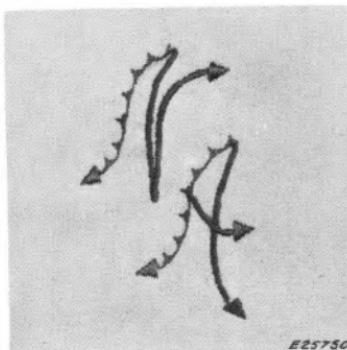
Back fabric with tarleton, crisp lawn or organdie. Trace or stamp design on right side of material. Cut away backing when stitching has been completed.

The monograms on this page are suggestive of the wide range and many variations which can be achieved.



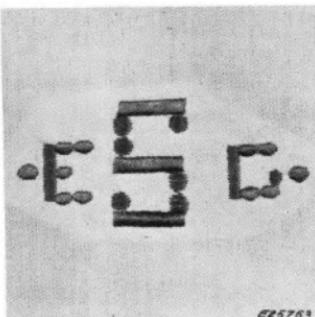
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Fig. 139



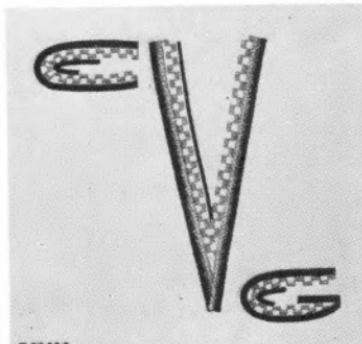
E25750

Fig. 140



E25764

Fig. 141



E23630

Fig. 142

SCRIPT STITCH

Use: Darning and Embroidery Throat Plate No. 161238

Darning and Embroidery Foot No. 161236

Darning and Embroidery Hoop No. 161240

or Conventional Embroidery Hoops

Central Needle Position

3-5 Bight 0 Stitch Lever A

Script stitch is most effective for marking baby blankets,

children's wear, household linens, lingerie or accessories.

After tracing or marking lettering on right side of fabric,
place in embroidery hoops with right side up. (See page
88 for assembling hoops.) Place work under needle, lower
the presser bar, position the needle and follow the outline

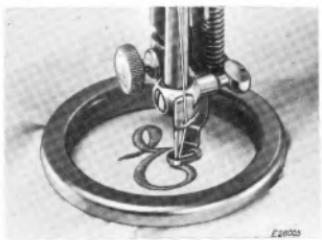


Fig. 143. Script Stitching with Hoops

traced. Should thread breakage occur, check setting of needle, decrease tension and use crisp lawn or organdie as an underlay.

SHADOW MONOGRAM

Shadow monograms have a dimensional appeal accomplished with threads of different colours or shades and with twin needles.

Proceed as for script stitch. **Limit bight to 3 or less** and use a needle thread tension slightly lighter than for script stitch. Stitch more slowly when crossing one line of stitching over another. Where lines cross, stitch the first line less dense and allow the second line of stitching to be more prominent.

Move embroidery hoops in forming letters so that most of the motion is away from you. Move hoops with the stroke of the needle, taking care not to bend or deflect needles.

Shadow monograms are equally appropriate for linens and wearing apparel.



Fig. 144. Shadow Monogram

DESIGNS AND MOTIFS

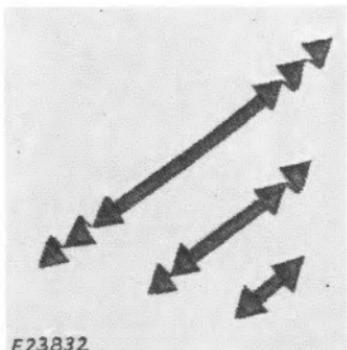


Fig. 145

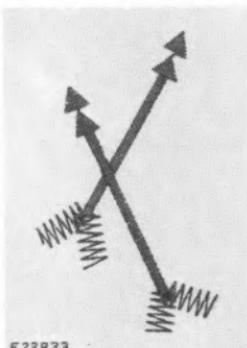


Fig. 146

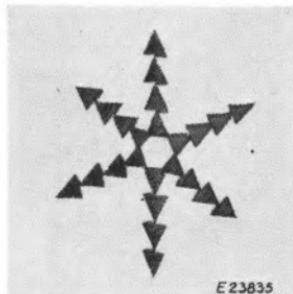


Fig. 147

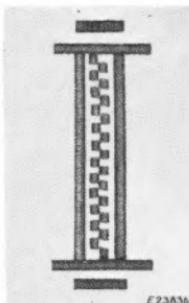


Fig. 148

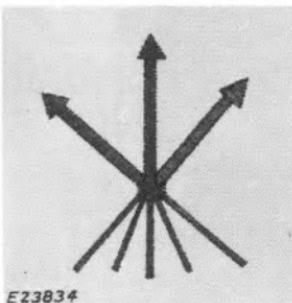


Fig. 149

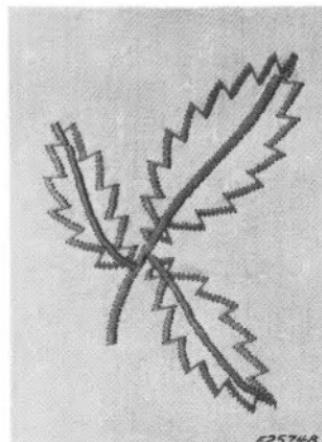


Fig. 150

BORDER DESIGNS

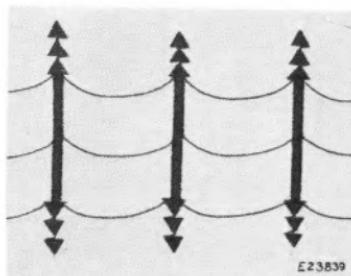


Fig. 151

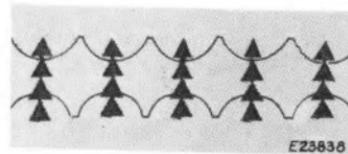


Fig. 152

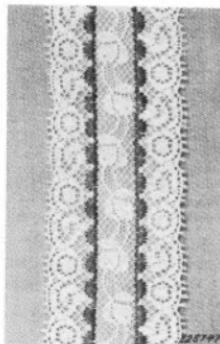


Fig. 153

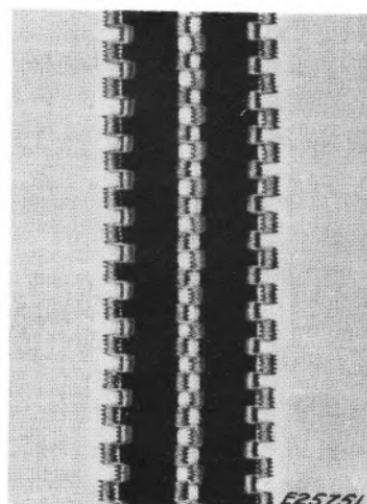


Fig. 154

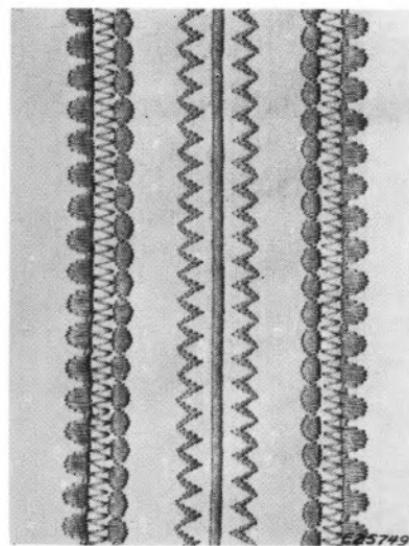
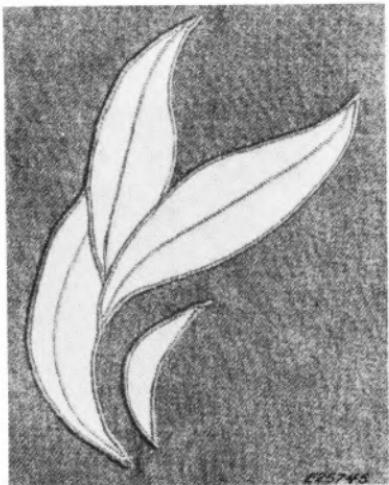


Fig. 155

APPLIQUE*Fig. 156*

Applique is effective on many types of apparel and fabric furnishings. Fabrics of like textures, as well as fabrics of different textures and weaves, are often used in appliqueing. For example, in lingerie, lustrous satin is appliqued

to dull crepe to create beauty and interest by contrast in texture. Print fabrics are sometimes applied to plain fabrics in dresses, children's clothes, play clothes or linens, for accent. In draperies, motif and border prints may be applied to plain fabric of similar texture. When large motif designs are used in applique, the lines or sections of the design are frequently accented by continuing the stitching around these sections to bring out the design. In fabric furnishings such design sections are frequently padded to further accent the design and to give it a dimensional quality. Shadow applique on sheer fabrics is an important variation of plain applique and is described on **page 67**.

After stitching, portions of the design are cut away giving shadow contrast between portions of the design having double and single thickness.

Bold monograms of contrasting fabrics may be applied to bedspreads, blanket covers or other furnishings for the home.

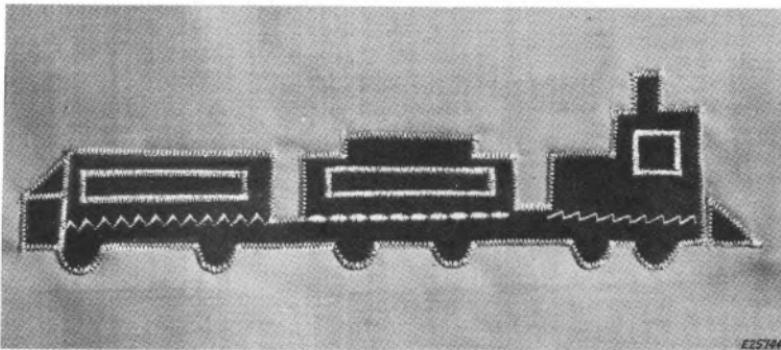


Fig. 157. Child's Appliqued Train Motif

A closely spaced satin stitch is usually used for applique making it unnecessary to turn raw edges to underside. The width of the satin stitch may be varied to accommodate the weave. Fine fabrics are appliqued with a narrow satin stitch, while coarse fabrics require a wide satin stitch. In many cases the design is stitched to the garment with a satin stitch and the edges are trimmed away later. An alternate procedure is often used where the design is stitched to the fabric with a short

straight stitch, the raw edges trimmed, and the satin stitch used to complete the outline, resulting in a smooth, lustrous edge. A trial sample is always made to determine the method most appropriate for the particular work being done, since applique is appropriate on such a diversity of fabrics.

Gay motifs from everyday life are spirited and smart for resort wear, play clothes or furnishings in children's rooms or recreation rooms.

THE RUFFLER

Use: Straight Stitching Throat Plate
 Ruffler 86642
 Central Needle Position
 0 Eight

PRINCIPAL PARTS OF RUFFLER

- A—Foot**—attaches ruffler to presser bar.
- B—Fork Arm**—straddles needle clamp.
- C—Adjusting Screw**—regulates fullness of gathers.
- D—Projection**—engages slots in adjusting lever.
- E—Adjusting Lever**—sets Ruffler for gathers or pleats.
- F—Adjusting Finger**—regulates depth or size of pleats.
- G—Separator and Seam Guides**—separates ruffle strip from fabric and facing—guides seam edges evenly.
- H—Ruffling Blade**—the upper, blue steel blade with teeth.
- J—Separator Blade**—lower blue blade keeps Ruffling Blade Teeth separate from Feed Dog Teeth.

TO OIL THE RUFFLER

The ruffler requires oiling at the beginning of

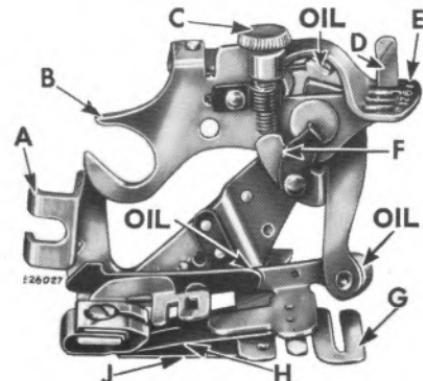


Fig. 158. Principal Parts of Ruffler

each working day to insure smooth operation and to prevent rust and wear.

Apply **one** drop of oil at each point indicated in Fig. 158, then wipe off excess oil. Operate ruffler with a piece of waste material until there is no oil on parts that come into contact with the work.

To Attach the Ruffler, raise needle to its highest point, loosen presser foot thumb screw and attach ruffler in place of presser foot, at same time placing fork arm **B** astride needle clamp. See that needle enters centre of needle hole in ruffler.

To Adjust Ruffler for Gathering, swing adjusting finger F away from needle. Raise adjusting lever E and move it until projection D can be entered in slot marked "I". Insert material to be ruffled between two blue blades and under separator guide following the line marked 2 in **Fig. 159.** Draw material slightly back of needle, lower presser bar and sew. For fine gathering, turn adjusting screw C upward to shorten stroke. Set machine for a short stitch. For full gathering, turn adjusting screw C downward to lengthen stroke. Set the machine for a longer stitch.



Fig. 159. Correct Position for Material to be Ruffled

To Make a Ruffle and Sew It to a Garment in One Operation, insert material to be ruffled between two blue blades and under separator guide. Place material to which ruffle is to be attached under separator blade and under separator guide. Proceed the same as for plain gathering.

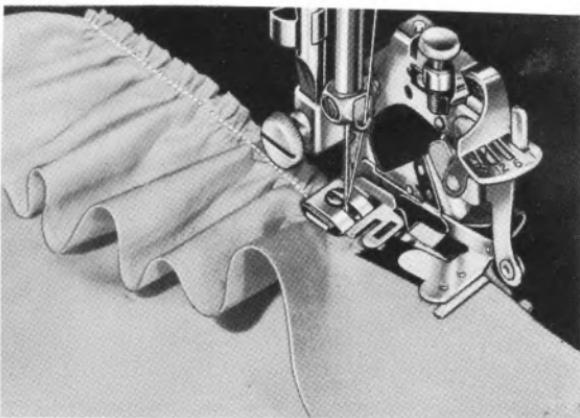


Fig. 160. Making a Ruffle and Attaching It in One Operation

To Adjust Ruffler for Pleating, raise adjusting lever **E** and move it until projection **D** can be entered in slot marked "6". The ruffler will then pleat once every 6 stitches. To pleat once every 12 stitches, have projection **D** enter slot "12" in adjusting lever **E**. Insert material to be pleated between two blue blades and under the separator guide.

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

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

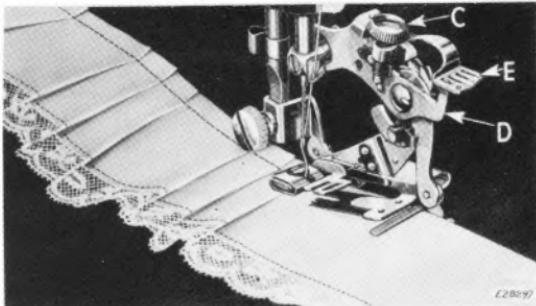


Fig. 161. Group Pleating with Ruffler

When desired space is made, set projection **D** in either of slots "6" or "12". Insert material to be pleated between two blue blades and under separator guide.

FAMILY MAINTENANCE SEWING**MENDING A RENT OR TEAR**

Household linens, sheets, towels and pillow cases are quickly mended on the SINGER Automatic Swing-Needle Machine by holding an underlay of straight or bias fabric underneath the tear and stitching with the multiple stitch zigzag over the tear bringing the edges of the tear together and reinforcing them. The ends or corners are given added strength by using a shorter stitch length.

Use: General-purpose Throat Plate and Presser Foot

Central Needle Position

5 Bight

25 to almost 0 Stitch

Multiple Stitch Zigzag Lever B

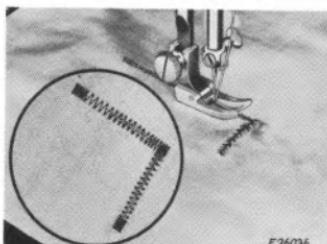


Fig. 162. Mending a Tear

MENDING TROUSER POCKET

Regulate machine in the same way as for mending a tear, and stitch pocket together allowing the needle to stitch very close to the edge on its right stroke, reinforcing the edge and closing the seam at the same time.

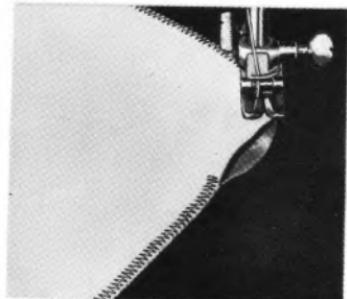


Fig. 163. Mending a Trouser Pocket

GIRDLE REPAIRS

Zigzag stitching is well suited for use on garments of an elastic nature that require firm, flexible stitching. The multiple stitch zigzag, as well as the plain zigzag, is appropriate for such repairs. The stitch length and bight are regulated according to the need. A needle slightly larger in size than is used for regular stitching is sometimes necessary to accommodate the multiple layers of fabric and elastic. Where both lengthwise and crosswise elasticity is important, multiple stitch zigzagging is best suited.

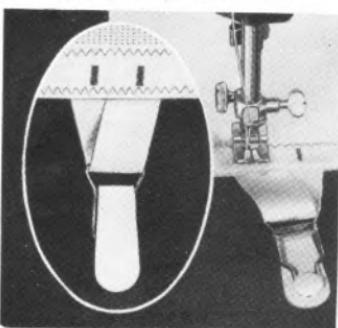


Fig. 164. Repairing a Girdle

ELASTIC WAISTBANDS

Use: General-purpose Throat Plate and
Presser Foot
Central Needle Position
2 Bight
12 Stitch
Lever A

Stretch elastic while stitching to provide the degree of fullness required in the garment. If a waistband, fit elastic for snugness on the individual and join ends of elastic. Divide both elastic and garment into quarters and pin at these intervals. Stretch elastic between these points to dimension of garment while stitching. With top edge of elastic in line with raw edge of garment, zigzag two rows, following the cords in the elastic. Trim away raw edge of garment near top line of stitching.

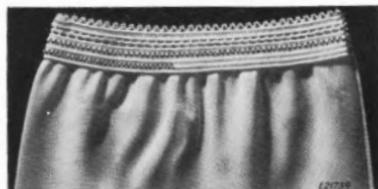


Fig. 165. Renewed Elastic Waistband

REPLACING BLANKET BINDING

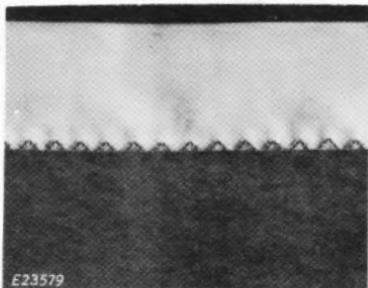


Fig. 166. Blanket Binding Replaced

The multiple stitch zigzag is an excellent stitch for applying blanket bindings and affords both a decorative and durable finish. Remove worn binding. Baste new binding securely in place. Stitch, using the General-purpose Throat Plate and Presser Foot, **5 bight, 12 to 25 stitch** and Multiple Stitch Zigzag Lever B. Increase pressure adjustment to accommodate the thickness of the blanket.

DARNING

Stockings, children's balbriggans, leggings, and knit wear of all kinds as well as household linens can be conveniently darned on Machine 320K. The area near the worn section must be held taut in the embroidery hoops furnished with the machine, or in conventional embroidery hoops.

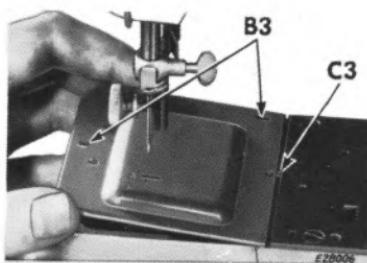


Fig. 167. Attaching Darning and Embroidery Throat Plate

Remove presser foot, then remove throat plate as instructed on **page 42**. Place Darning and Embroidery Throat Plate in position on machine as shown in **Fig. 167**, so that screw **C3** is underneath the edge of the bed plate and the pins enter the holes **B3** in the plate.

Use: Darning and Embroidery Foot 161236
 Darning and Embroidery Throat Plate 161238
 Darning and Embroidery Hoop 161240
 or Conventional Embroidery Hoops
 Central Needle Position 0 Eight

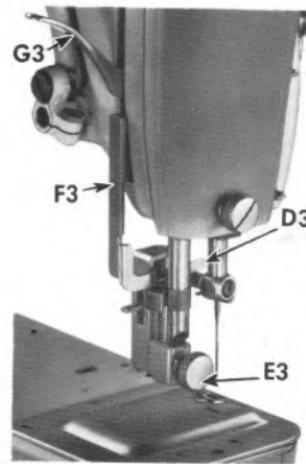


Fig. 168. Attaching Darning and Embroidery Foot

Attach Darning and Embroidery Foot to presser bar with thumb screw **E3** so that extension **F3** is directly under presser bar lifter, lug **D3** is above needle clamp and the needle passes through centre of hole in foot, as shown in **Fig. 168**.

DARNING—Continued

To attach Embroidery Hoop **J3**, Fig. 169 to machine, remove solid ring **H3** from split ring **J3** and insert stud **K3** in hole **L3** in bed of machine. Place material to be darned over split ring **J3** so that hole to be repaired is centred in the hoop. Then place



Fig. 170. Attaching Embroidery Hoop

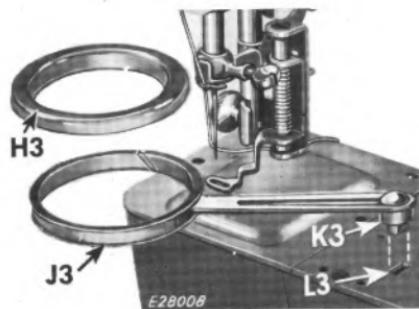


Fig. 169. Attaching Embroidery Hoop

solid ring **H3** over the material and press it down firmly on the split ring to clamp material taut between the rings.

Raise foot lifter **G3**, Fig. 168 and needle bar and swing hoops with material under the darning foot, as shown in **Fig. 171**.

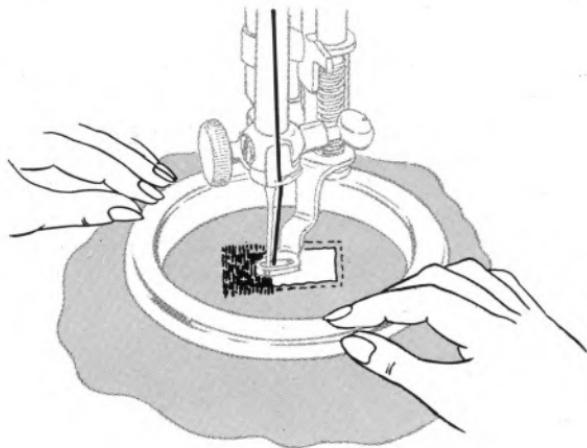
DARNING—Continued

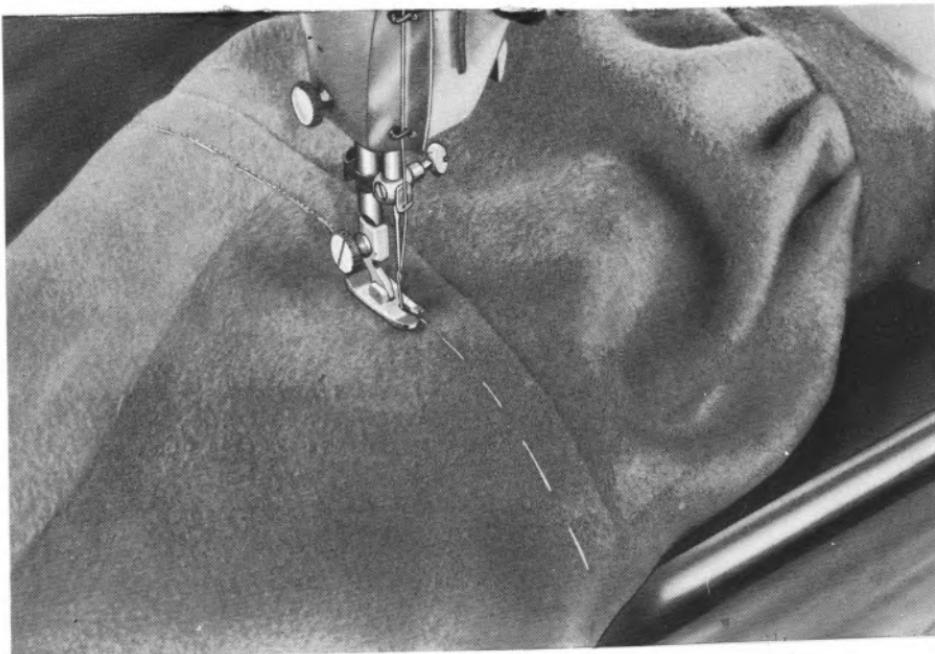
Fig. 171. Darning in Process

Reinforce opening by positioning needle $\frac{1}{4}$ " outside of hole, lower the presser bar to engage tension discs, and run reinforcing stitches $\frac{1}{4}$ " from edge completely around hole, moving hoops with both hands. This reinforcement may be omitted for firm fabrics whenever it seems to be desirable.

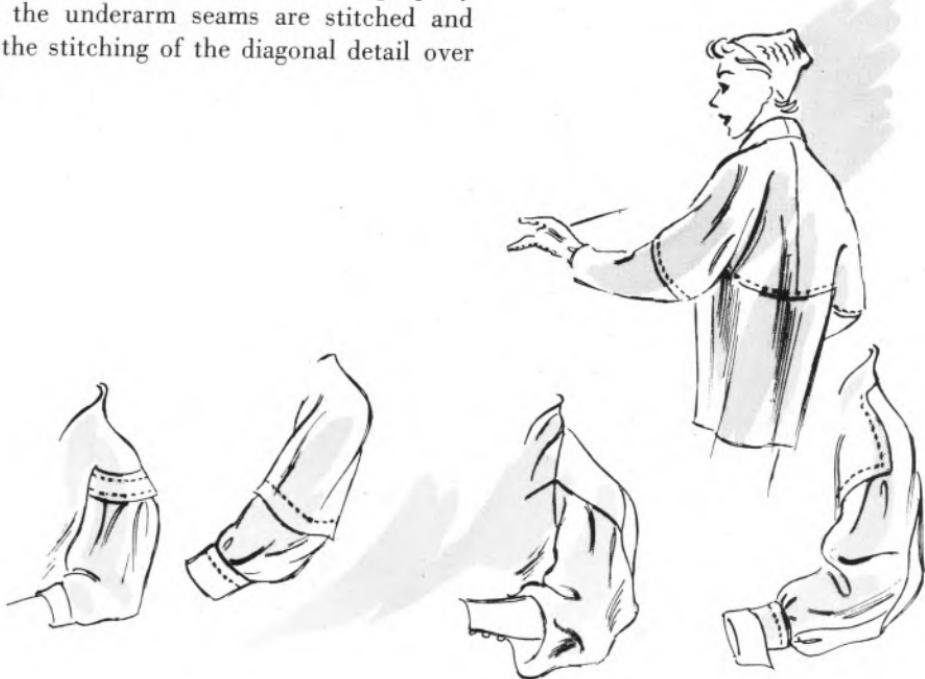
With a steady, continuous movement, move hoops backward and forward across hole, keeping the lines of stitching closely spaced and even in length. Slow movement of hoops will produce a short stitch while rapid movement will produce a long stitch. For knit and tricot fabrics a longer stitch is best, because it is softer when the garment is worn. A short stitch is best for cottons and household linens, because it approximates the weave of the fabric and is strong enough to withstand many launderings.

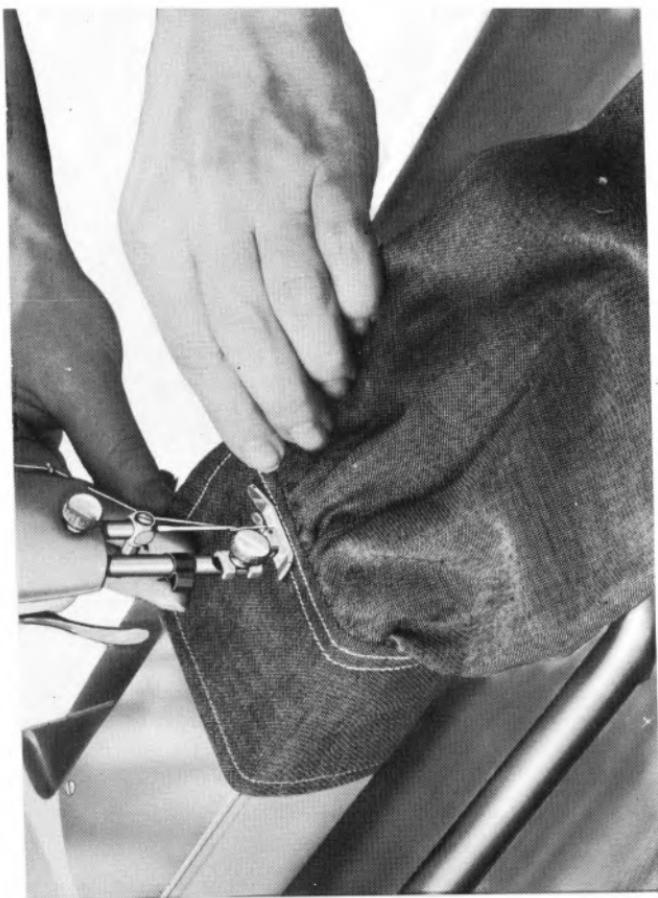
After darning, remove the darning and embroidery foot and embroidery hoop. Replace the throat plate and presser foot for ordinary sewing and raise the presser bar lifter to its highest position.

APPLICATIONS OF THE TUBULAR BED FEATURE

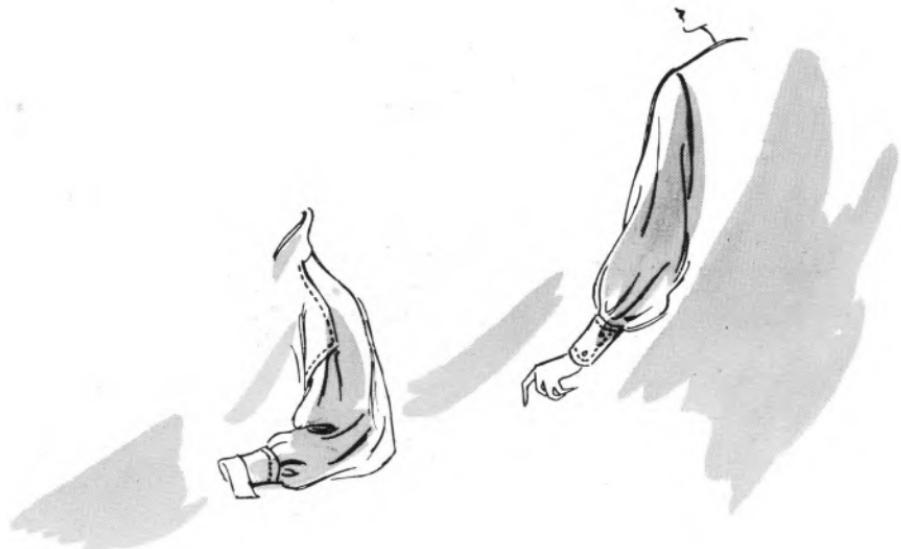


Sleeves that carry crosswise or diagonal seams are properly assembled when the underarm seams are stitched and pressed prior to the stitching of the diagonal detail over the tubular bed.



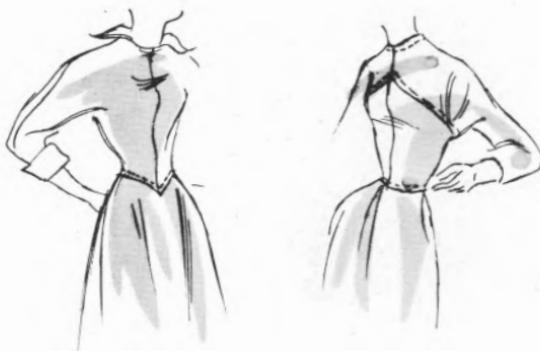


Cuffs are attached with a more convenient handling of the bulk of the sleeve. The tubular bed extends inside the sleeve, as illustrated.



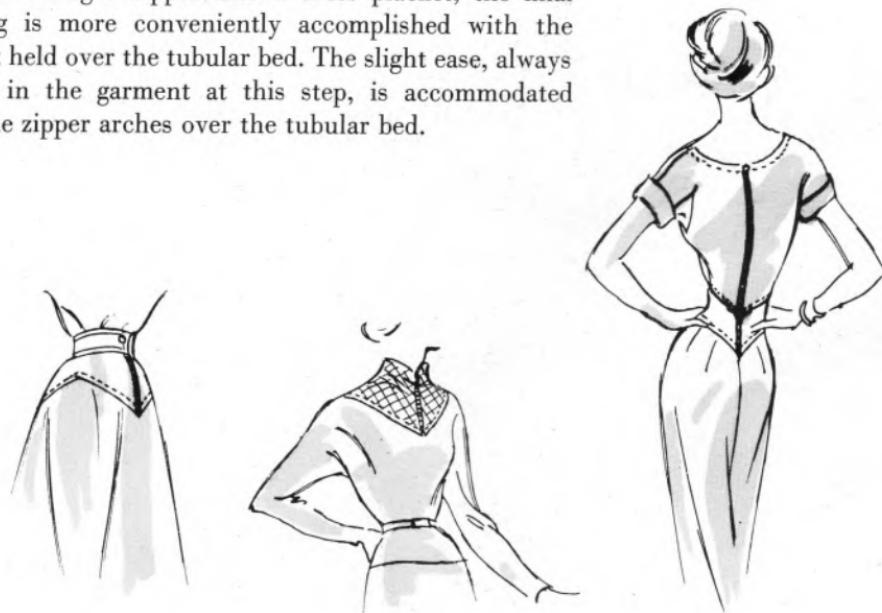


Stitching at the waistline of a garment is accomplished with greater facility over the tubular bed. Often a styled garment calls for a slotted seam, a welt seam or a top stitched seam at the waistline which must be completed after the bodice and skirt sections are joined. All such stitchings are easily done over the tubular bed.





When inserting a zipper into a dress placket, the final stitching is more conveniently accomplished with the garment held over the tubular bed. The slight ease, always present in the garment at this step, is accommodated when the zipper arches over the tubular bed.





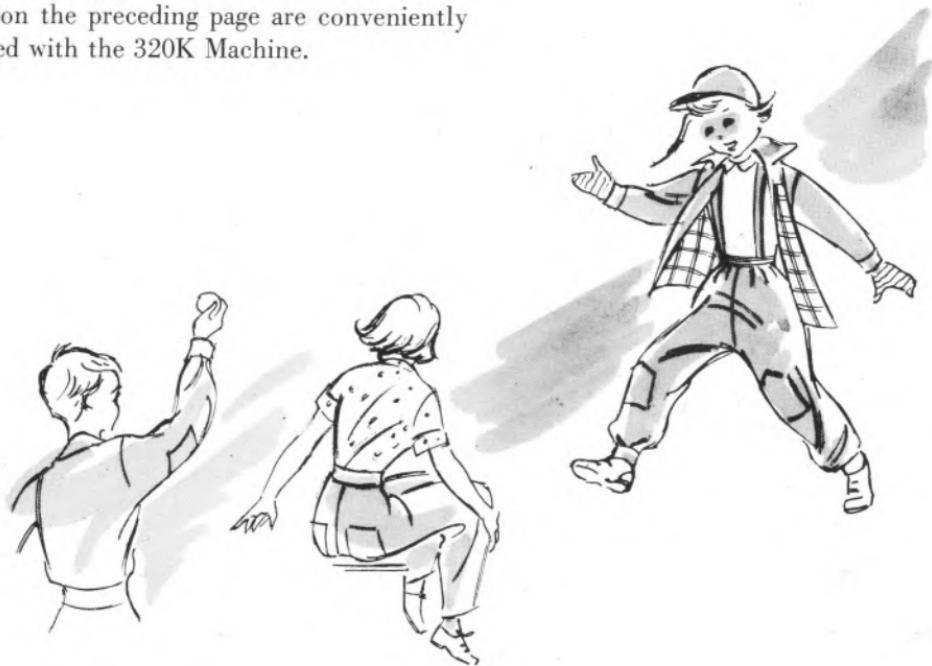
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Flat felled seams in pyjamas, slacks, blue jeans, jodhpurs, trousers, snowsuits, leggings, and the like are more accessible since the tubular bed extends inside the shaped section, providing greater visibility for stitching.





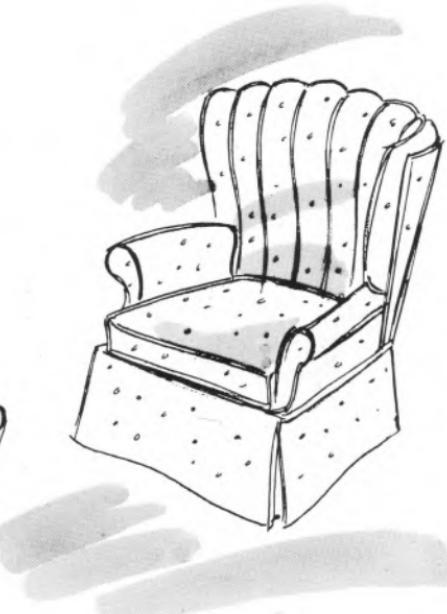
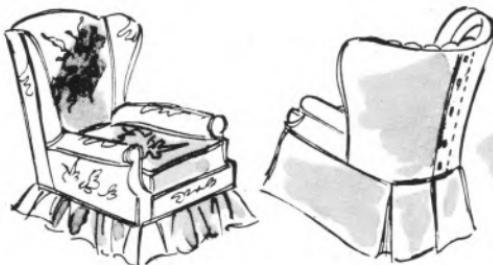
Repairs and mending of garments such as those mentioned on the preceding page are conveniently accomplished with the 320K Machine.





Household sewing, cushions, slip covers, lamp shades and all articles of cylindrical shape are conveniently and accurately stitched on the 320K Machine.

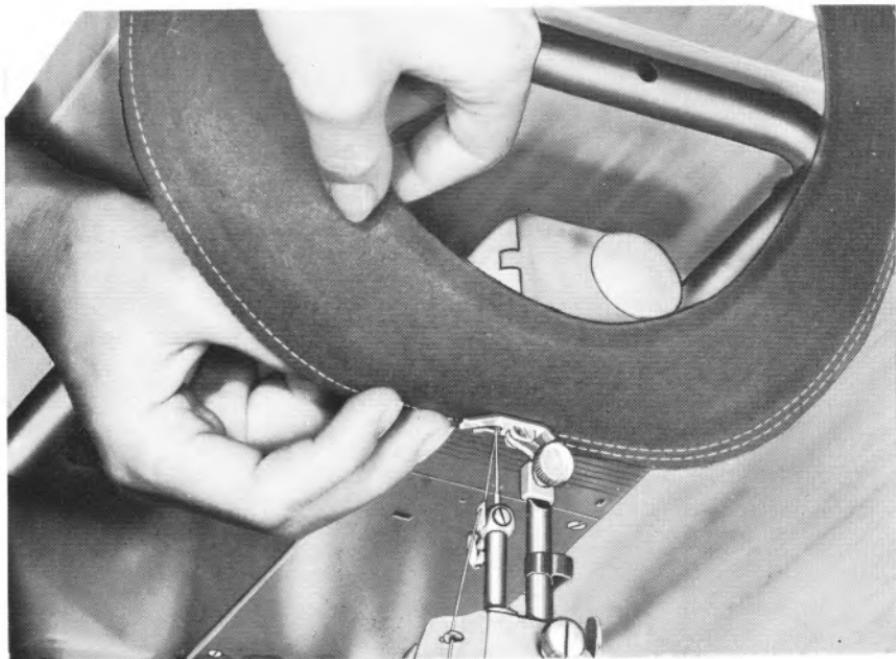
A popular method of assembling sections for a slip cover attaches the welting to the shaped section, with the zipper foot. The shaped section is then pinned to its adjacent section and stitched from the outside through the welting and the seam allowance of the newly joined section. The cording rolls over this outside stitching making it hardly discernible.





Especially suitable for millinery, the tubular bed extends inside the crown or brim sections of a hat and places stitching without interfering with the shaping of these sections.





The brim and crown sections may be joined with machine stitching following hand basting to properly shape and distribute the ease. This joining is always covered with detail of trimming or banding on the outside and a head-size ribbon on the inside.



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