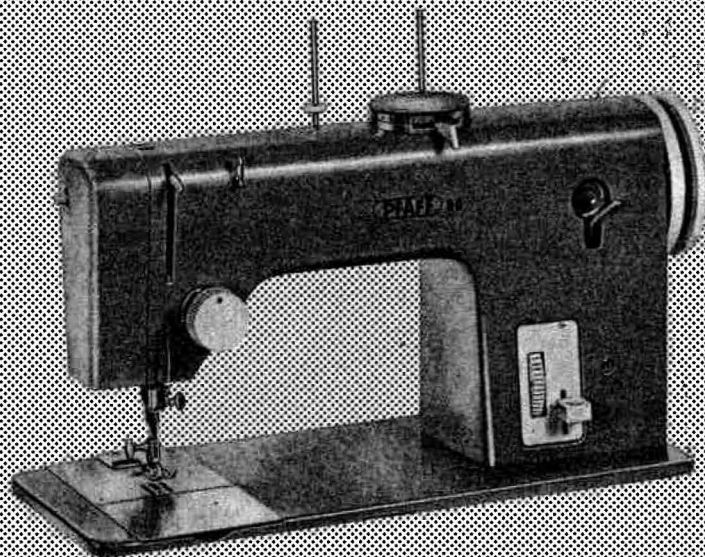


**PFAFF**

90



INSTRUCTION BOOK



# 90

## I N S T R U C T I O N S

### FOREWORD

Your dream has come true!

You are now the proud owner of a Pfaff 90, the sewing machine which will enable you to master all ordinary sewing, ornamental stitching and darning jobs that may come up in a home.

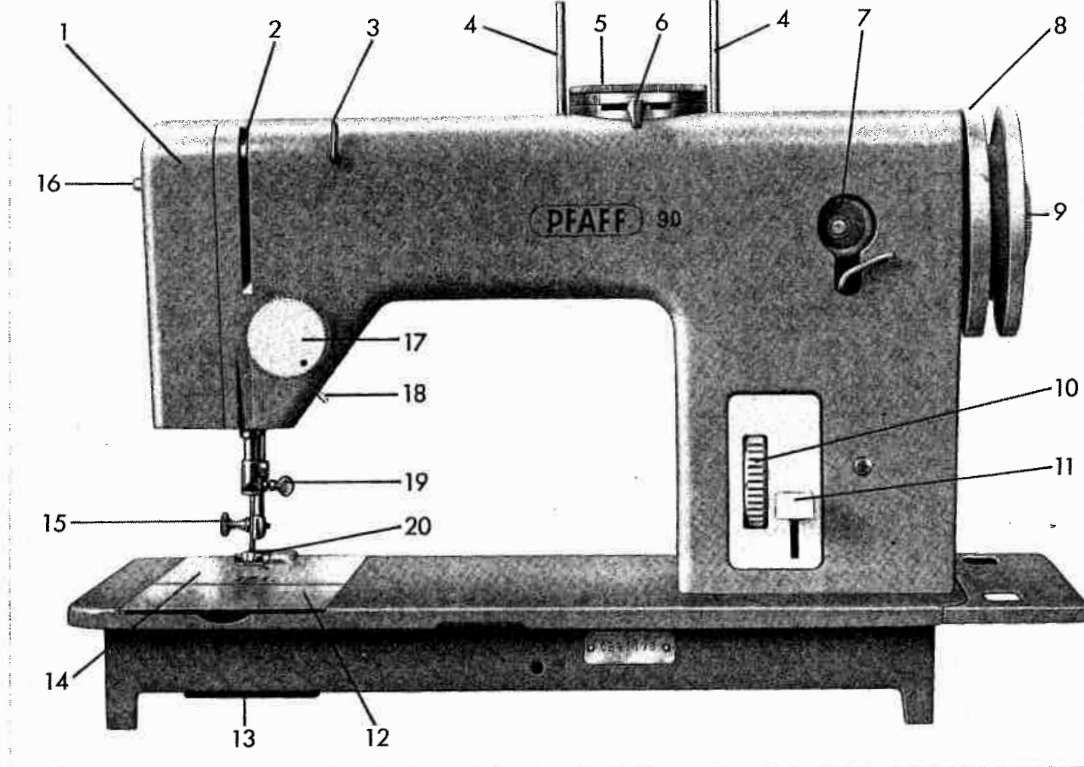
This instruction book will help you understand the machine and give you valuable tips to make sewing more fun for you.

Even if you are an experienced seamstress, you will find this book a valuable guide to easy sewing.

Follow these simple instructions and familiarize yourself with the exclusive features of your machine. You will find sewing exciting on your easy-to-operate Pfaff 90.

If you have any sewing problems, please contact your Pfaff dealer. He will be glad to help you at any time.

G. M. PFAFF AG  
Karlsruhe-Durlach Branch



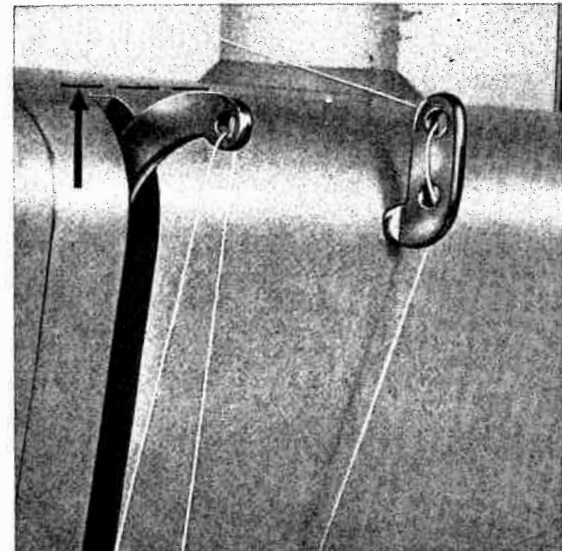
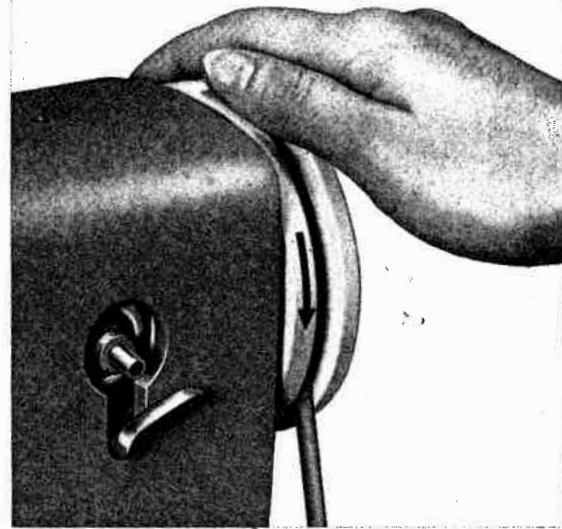
GR 022

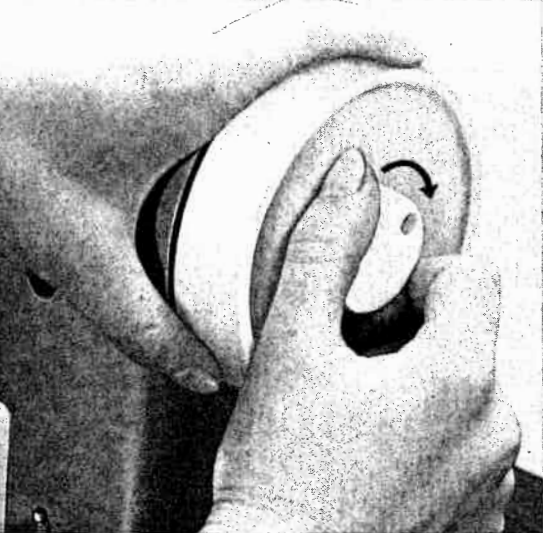
- |                         |                             |                              |
|-------------------------|-----------------------------|------------------------------|
| 1 Face cover            | 8 Balance wheel             | 14 Dual-purpose needle plate |
| 2 Take-up lever         | 9 Stop motion knob          | 15 Sewing foot thumb screw   |
| 3 Thread retainer       | 10 Stitch length control    | 16 Light switch              |
| 4 Spool pins            | 11 Reverse feed control     | 17 Needle thread tension     |
| 5 Stitch width dial     | 12 Bed slide                | 18 Presser bar lifter        |
| 6 Needle position lever | 13 PFAFF rotary sewing hook | 19 Needle set screw          |
| 7 Bobbin winder         |                             | 20 Sewing foot               |

## *Fundamentals of Machine Operation*

- Whenever you have to turn the balance wheel, turn it toward you ► (counter-clockwise as shown by black arrow).
- Make sure stop motion knob on the balance wheel is tightened before you begin sewing.
- Never run a threaded machine unless you have fabric under the sewing foot.
- Place both threads back under the sewing foot before you put fabric into the machine.
- The machine will feed the material under the sewing foot automatically. All you have to do is guide the work.
- Always bring take-up lever to its highest position before you begin ► and after you have completed a seam.

Failure to observe this rule may cause the thread to slip out of the needle eye. Also, it is easier to remove the work with the take-up lever up.





R 8218 A

## *Operation of Your Sewing Machine*

### **Engaging the Sewing Mechanism**

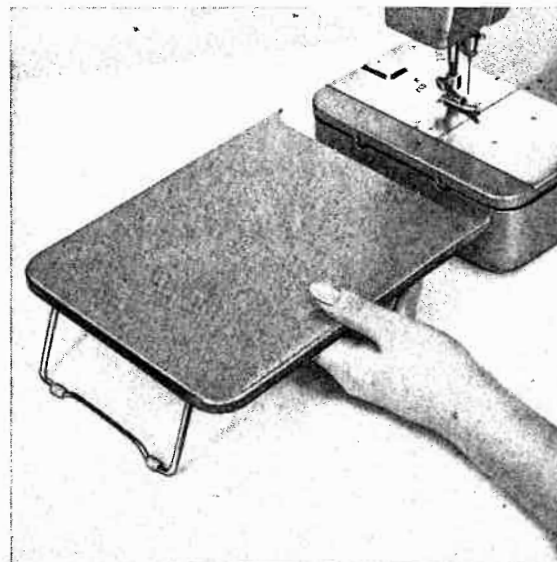
- ◀ Hold balance wheel and turn stop motion knob clockwise.

### **Disengaging the Sewing Mechanism**

Hold balance wheel and turn stop motion knob counter-clockwise (toward you). The sewing mechanism is then disengaged for bobbin winding.

## *Bedplate Extension*

To enlarge the sewing area of portable machines, an extension may ▶ be attached to the left side of the bedplate. This extension is kept on the left of the carrying case.



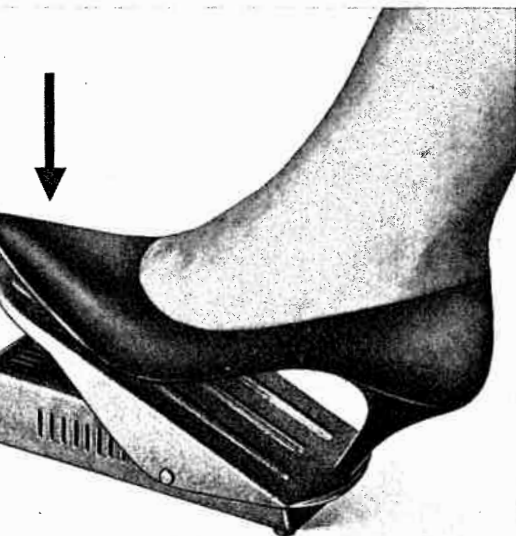
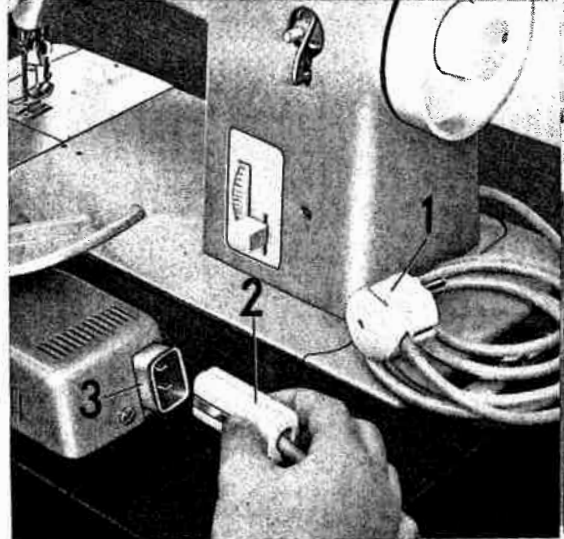
## Power Drive

Push plug 1 into wall outlet and plug 2 into receptacle 3 on foot control.

### Foot Drive

Push sewlight plug into wall outlet. Mount driving belt. To switch on sewlight, push button on face cover. Before you drop the machine remove the belt from the stand wheel, pulling it to the right.

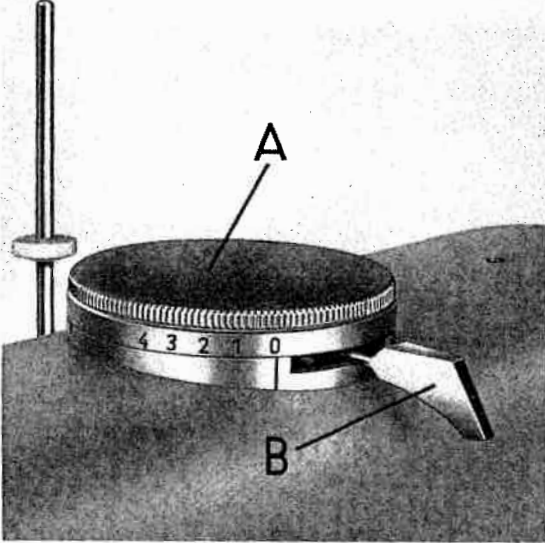
GR 010



### Foot Control

Place the foot control under the cabinet within easy reach of your foot. Rest the right foot on the control pedal and press. The harder you press, the faster the machine will run.

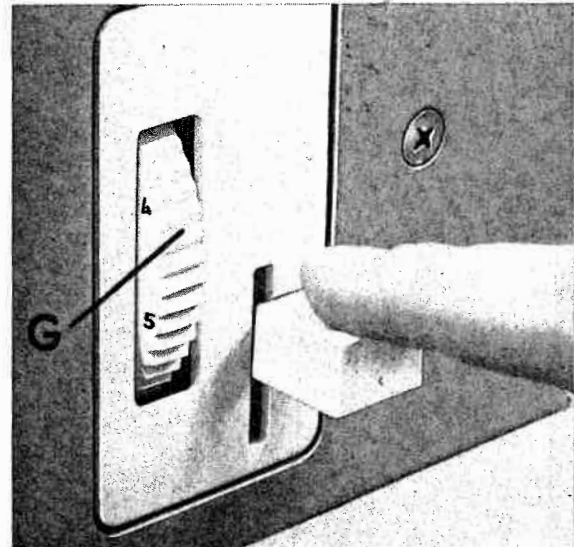
GR 018



## *Straight Stitching*

- ◀ For straight-stitch sewing set:  
Dial **A** — 0  
Lever **B** — Center ↓

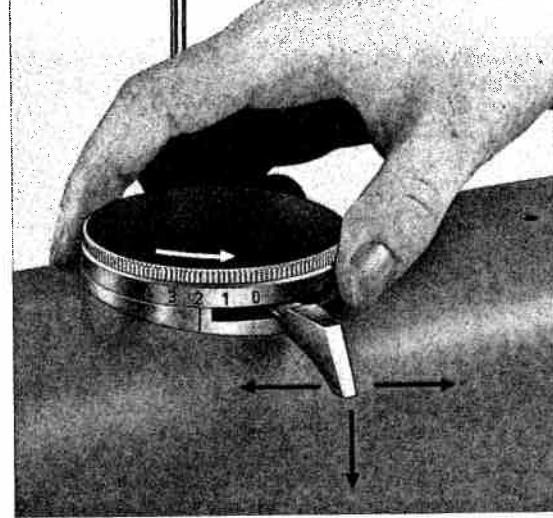
Control **G** regulates the stitch length. For detailed instructions please ▶ refer to page 18. To backtack the end of a seam, simply depress the finger-tip control.



## Zigzag Sewing

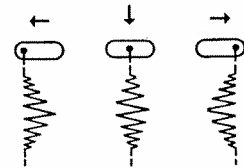
If you want to switch from straight (**A** on „0“) to zigzag stitching, turn dial **A** to desired stitch width (indicated by numbers 1 to 4).

Lever **B** changes the position of the needle in the needle plate slot. Thus the stitching can be moved from the center to the left or right of the slot, as desired.



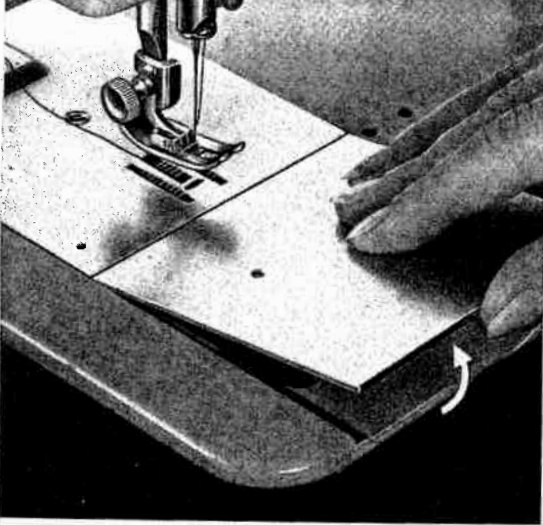
The position of lever **B** (left, center, right) indicates the position of the needle in the needle plate slot.

Control **G** lengthens zigzag stitches or packs them more closely together (satin stitch).



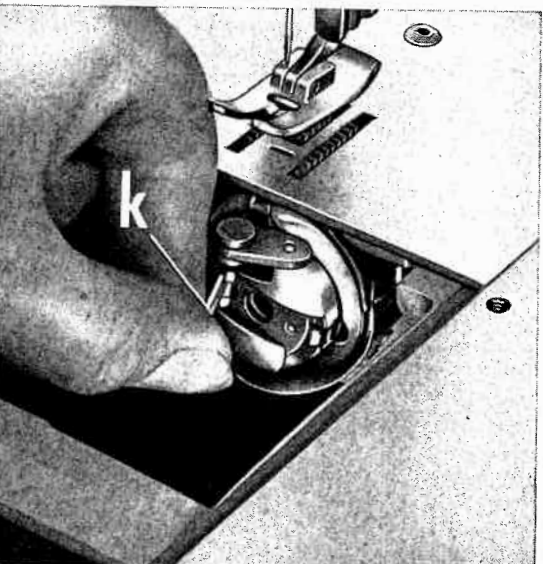


GR 014



## *Removing the Bobbin Case*

The needle has to clear the needle-plate. Lift front end of bed slide and pull.



Lift latch **k** with the thumb of your left hand and pull out bobbin case with bobbin. When you release the latch, the bobbin drops out.

GR 013

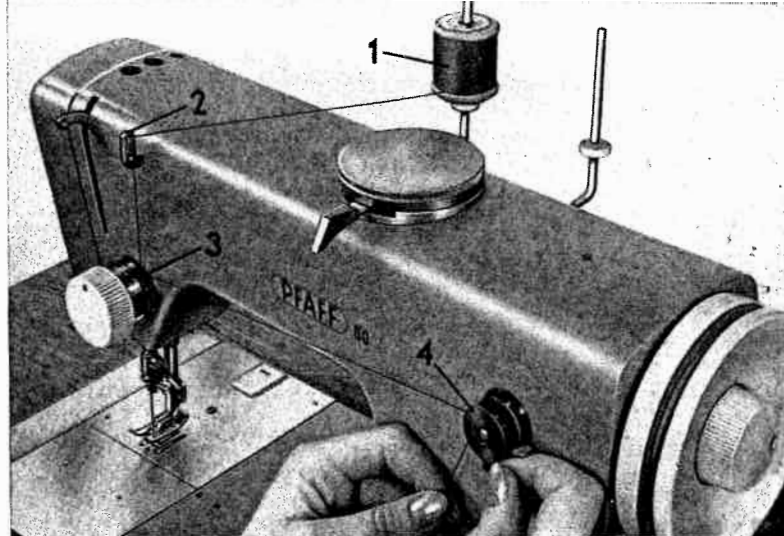
## *Winding the Bobbin*

Disengage the sewing mechanism (see page 4) and flick presser bar lifter to highest position. Raise the spool pins to the vertical position. Place spool of thread on one of the spool pins and set bobbin on bobbin winder spindle so that the key at base of spindle enters slot in bobbin.

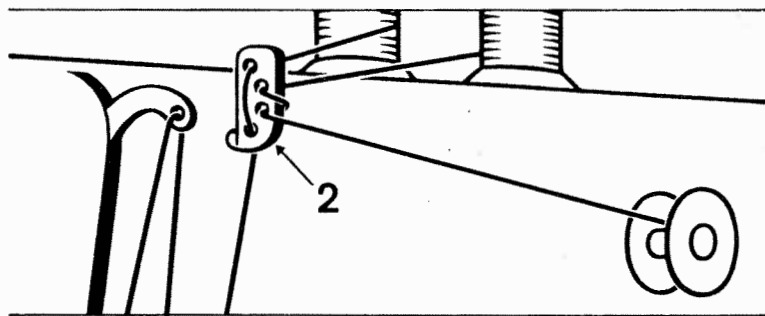
Thread retainer with two holes: Pull thread from spool **1** and pass it through the holes in thread retainer **2**, clockwise around tension **3** (between the rear and centre tension discs) and clockwise around bobbin **4**. Pass end of thread through slot in bobbin, from inside. Press bobbin winder lever toward bobbin and start winding. Having wound a few turns, break off end of thread. Bobbin winder will stop automatically when bobbin is full.

Thread retainer with four holes: Lead thread as shown by design below.

Before you drop the machine into the cabinet or place it in the carrying case (portable machines) the spool pins should be swung forward to the horizontal position.



GR 027



## *Inserting a Full Bobbin into Bobbin Case*

- ① As shown in illustration 1, hold bobbin in left hand so that the thread end falls from the top down toward you, and insert bobbin into bobbin case.
- ② Hold the bobbin firmly in the bobbin case and pull the thread into the case slot.
- ③ Pull the thread under the tension spring until it emerges from the opening at the end of the spring. Leave about three inches of thread hanging from the bobbin case.
- ④ Hold the case by its open latch so that the bobbin cannot fall out.

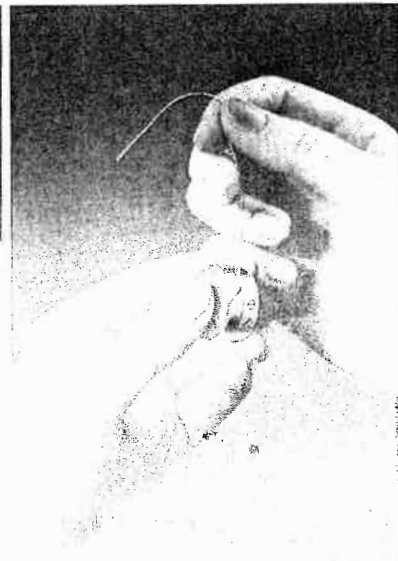
R 5867

1



R 5869

2



R 5870

3



R 5868

4

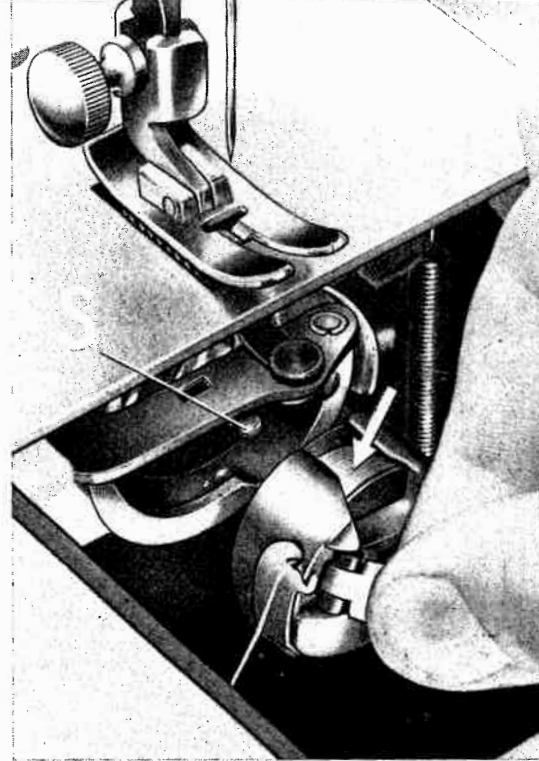


## *Inserting the Bobbin Case*

Raise take-up lever to its highest point and lift the latch with the thumb and forefinger of your right hand. Turn bobbin case until slot points up (see arrow). Place bobbin case on center studs of hook.

In replacing the bobbin case, it is best to hold the loose end of thread so that it will not get jammed between bobbin case and hook. Release the latch and press against bobbin case until you hear it snap into place. An improperly inserted bobbin case will cause needle breakage.

GR 015



Types of Fabrics	Mercerized Cotton	Silk	Needle Size
<b>Fine Fabrics</b> such as georgette, chiffon, batiste, voile, lawn, silk.	80 to 100	0 to 000 twist	60 or 70
<b>Lightweight Fabrics</b> such as dress silks and cottons, sheer woolens, shirting, draperies.	70 to 80	A & B twist	80
<b>Medium Fabrics</b> such as lightweight woolens, madras, muslin, brocades, heavy silks and rayon, gabardine.	50 to 70	B & C twist	90
<b>Heavy Fabrics</b> such as coating, denim, corduroy, slipcover fabrics, bed tickings, lightweight canvas.	40 to 50	C & D twist	100
<b>Synthetics, Rayon, Acetate</b> including nylon, orlon, dacron, plastics, etc.	Determined by weight of fabric 40 to 50		Determined by thread size 60 to 80

## *Recommended Needle and Thread Sizes*

The appearance of the finished seam is dependent on the correct relationship between needle, thread and fabric. Select the proper thread sizes and needles from this chart.

The same size threads should be used in the needle and on the bobbin. Some experienced seamstresses prefer a somewhat thinner bobbin thread. However, the bobbin thread never should be thicker than the needle thread.

For embroidery and darning work, a No. 50 thread should normally be used.

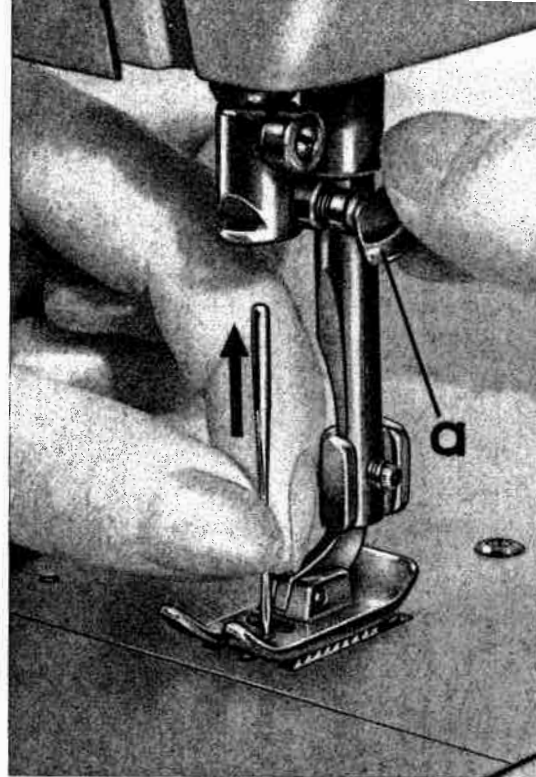
## *Important Facts about Needles*

On Pfaff 90 sewing machines, System **130 R**, flat-shank needles are used for all ordinary sewing and embroidery work. The last column in the chart on page 12 gives you the needle size required for the material in hand. Genuine Pfaff needles, System 130 R, are available from every Pfaff dealer. Bent or blunt needles should not be used.

## *Changing the Needle*

Bring needle bar to its highest point and lower sewing foot.

Loosen needle set screw **a** half a turn and pull old needle out of needle clamp. Make sure that the flat side of the shank faces toward the back and long groove toward you. Insert new needle into opening of needle clamp and push it up as far as it will go. Tighten needle set screw **a**.



GR 028

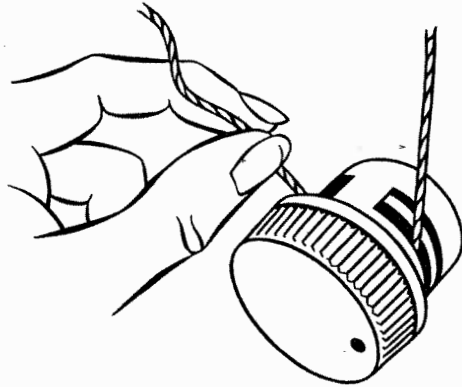
## Upper Threading

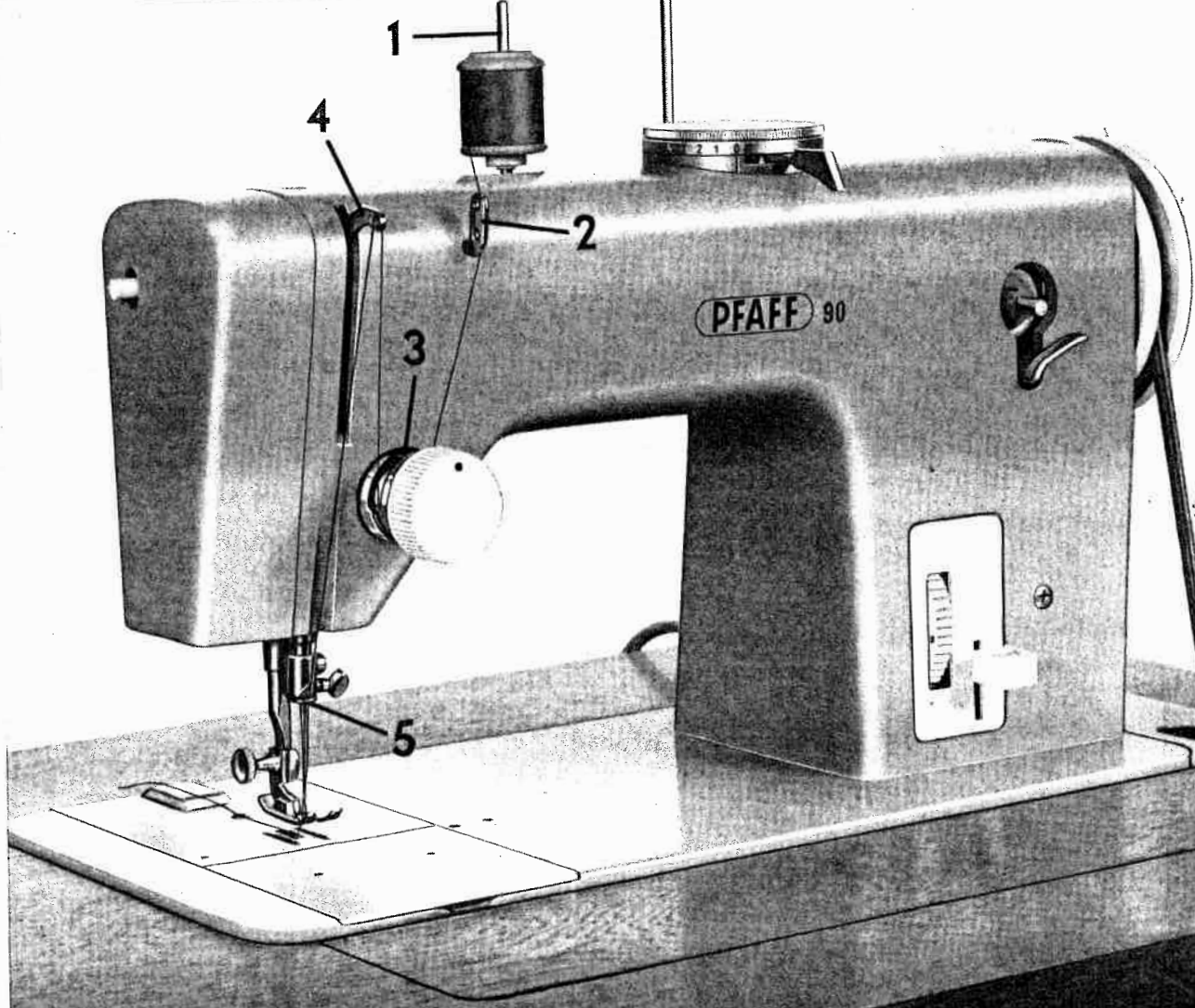
Place spool of thread on one of the spool pins **1** and lead thread end through both thread retainer openings **2**.

Lead thread clockwise around tension and pull it between any two of the tension discs **3**. Make sure that the presser bar lifter is at its **top** position II (see page 21).

Bring take-up lever **4** as high as it will go and pass thread from right to left through the hole at its end and into slot at left of thread guide **5**. Then thread needle, front to back.

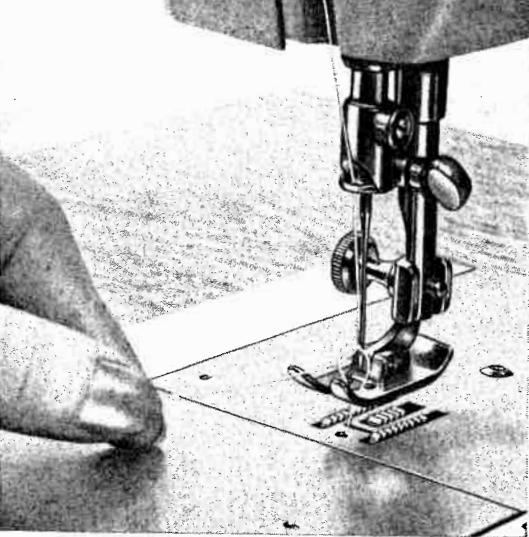
For thread retainer with four holes see page 9.





GR 026





GR 046

## *Drawing Up the Bobbin Thread*

▲  
Hold needle thread lightly in your left hand. Turn balance wheel toward you until the needle moves once down and up again. Lightly pull needle thread to draw bobbin thread up through the needle hole. Place both threads back under the sewing foot.

## *Correct Tension Regulation*

Balanced tensions are essential for sewing. If your tension is correct, you will have perfect seams as sketched below (III).

Sketch I — The threads interlock on the underside of the fabric.

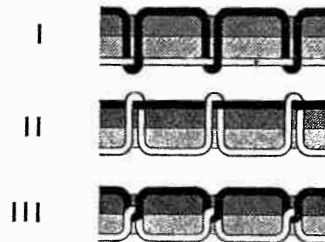
Cause :

Upper tension too loose or lower tension too tight.

Sketch II — The threads interlock on the surface of the fabric.

Cause :

Upper tension too tight or lower tension too loose.



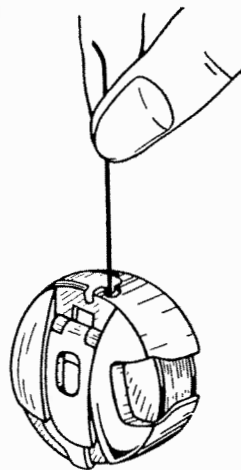
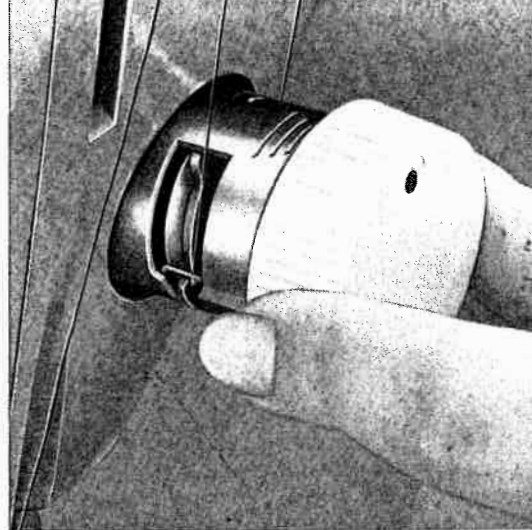
## Regulating the Thread Tension

The **bobbin thread tension** has been set for a medium grade and need not be adjusted for all ordinary sewing operations. If a special sewing operation should require a looser or tighter tension, turn the small knurled screw on the bobbin case with the tip of your thumb as follows:

Turn it left ← — for looser tension.  
Turn it right → — for tighter tension.

Determine whether the bobbin thread tension is set for a medium grade by holding the thread end between thumb and forefinger and letting the bobbin case hang freely. The tension should be strong enough to keep the bobbin case from being pulled down by its own weight. However, as you jerk your hand slightly, the bobbin case should gradually slide down. Do not turn the knurled screw too far to the left to keep it from falling out. Choose the lower tension slightly stronger when doing ornamental stitching to be sure you always have a neat satin stitch on the right side of the fabric.

GR 012



▲ The final stitch appearance can be regulated by the **upper tension** knob, as follows:

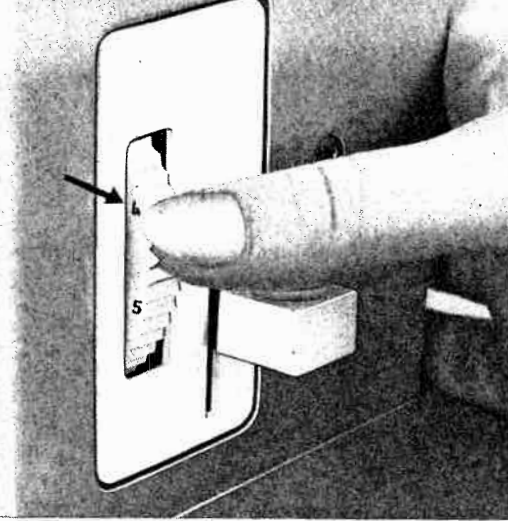
Turn left ← — for looser tension.  
Turn right → — for tighter tension.

The marks on the tension housing and the dot on the tension knob make it easy to restore any tension setting whenever you have had to change the tension for another sewing job. (The longer the mark, the tighter the tension.) The upper tension has a third disc for two-needle work.

## *Stitch Length Regulation*

The stitch length control serves to regulate the stitch length and to limit it in sewing backwards.

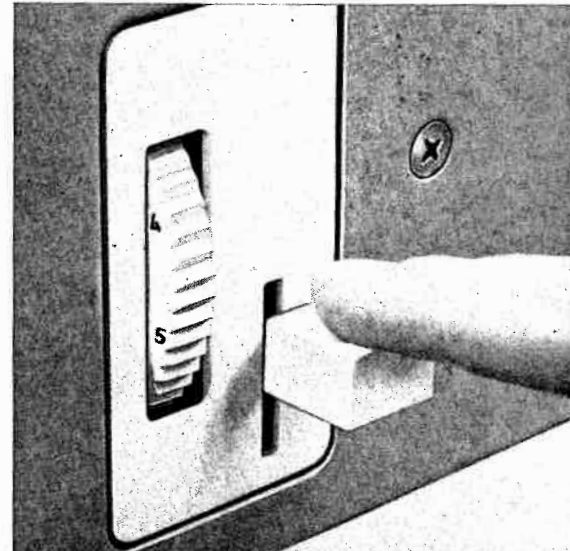
Numbers 0 to 9 on the control indicate the stitch length (the higher the number, the longer the stitch). When the control is set on "0", the machine ceases feeding, the longest stitch is obtained by setting the control on "9" (about 6 stitches to the inch). To regulate the stitch length, turn the control until the desired number is fully visible at the top of the slot (see arrow).



## *Reverse Sewing*

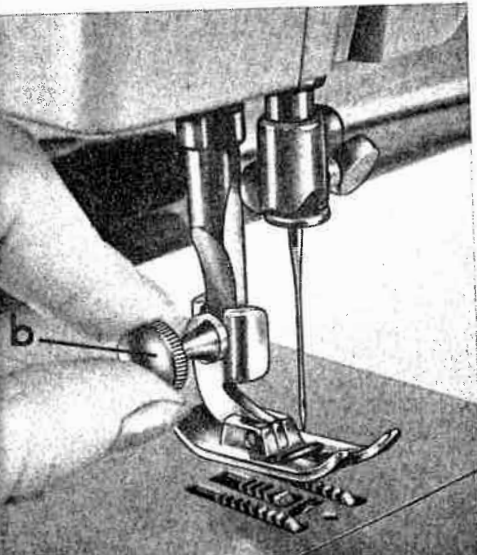
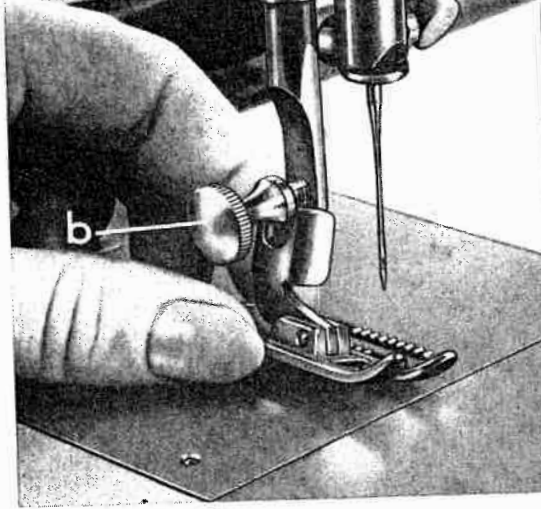
To sew in reverse, simply press the finger-tip control down. When the control is released, the machine resumes forward sewing.

This feature is ideal for backtacking the beginning or end of a seam and for darning rips.



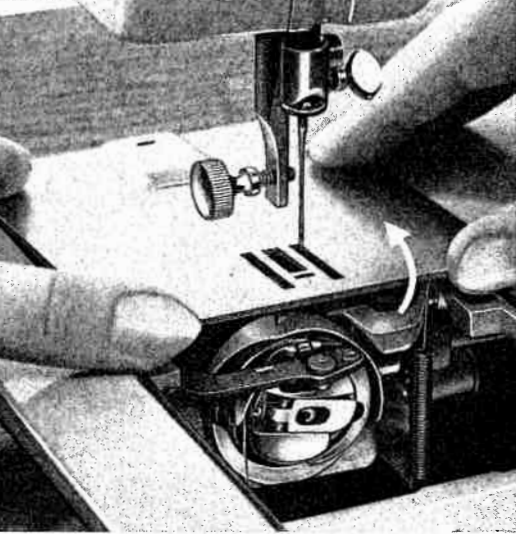
## *Changing the Sewing Foot*

Lift both needle and presser bar to their highest positions and turn sewing foot thumb screw **b** to the left. Tilt the foot sideways and pull it down.



Reverse procedure to slip on new foot and tighten screw **b** securely.

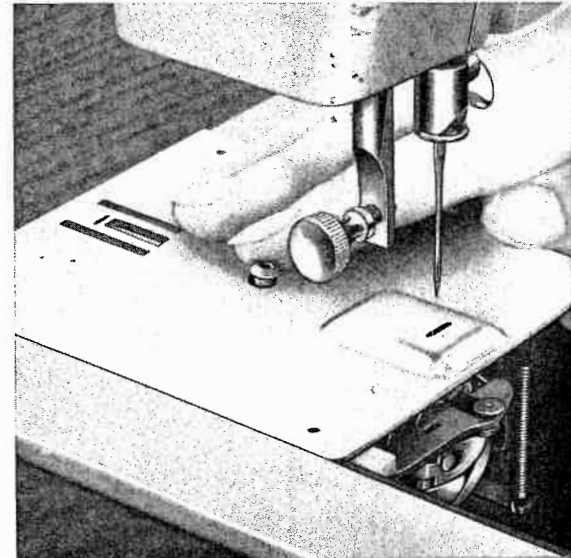
GR 006



## *Preparing Your Machine for Darning*

Remove the sewing foot and the bed slide. Lift front end of needle plate and tilt out.

Turn needle plate half a turn so that raised portion is at the front (see illustration) and replace. Press down stud and replace bed slide. Thread the needle with darning wool and flick presser bar lifter to position I (see page 21).

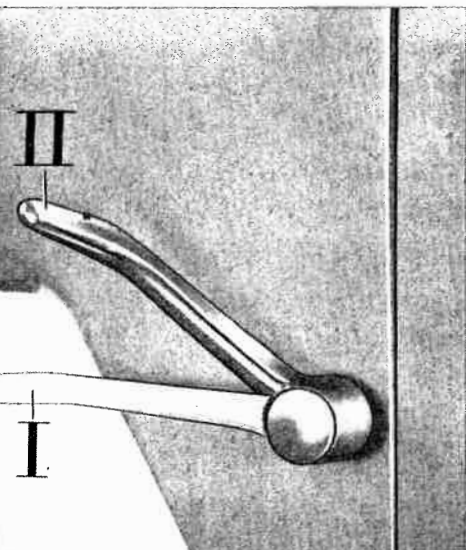
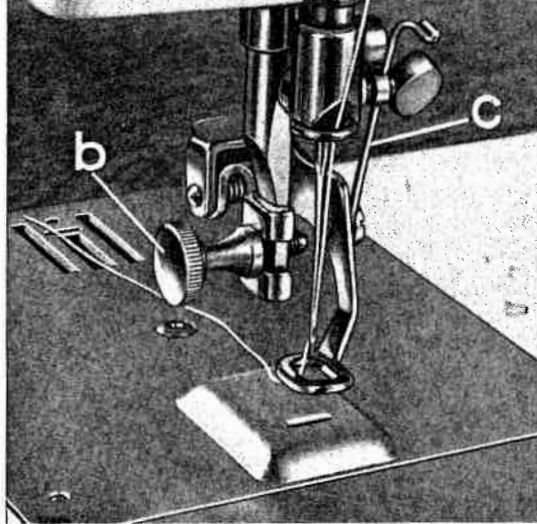


## *Darning Foot*

Remove the sewing foot. Attach darning foot No. 847 610 from the rear. Hold spring clip **c** so that it is behind the needle set screw, and tighten screw **b**.

If your sewing machine has a presser bar lifter with only position II, use darning foot No. 93-100154-91.

R 047



## *Positions of Two-Position Presser Bar Lifter*

When the presser bar lifter is flicked to position I, the presser bar is raised but the needle thread tension is still activated (important for embroidering and darning).

When set at position II, the presser bar lifter disengages the needle thread tension (which facilitates winding the bobbin and removing the work from the machine).


Some machines have a presser bar lifter with only position II.

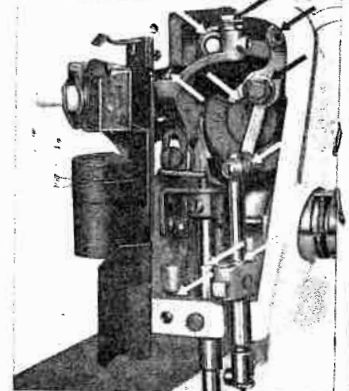
## Care and Maintenance

Longevity and smooth machine performance are dependent on regular and proper cleaning and oiling.

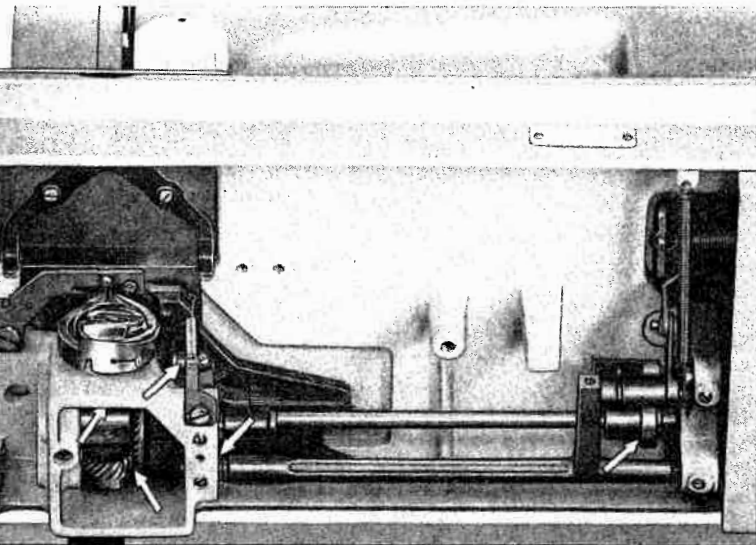
Use Pfaff sewing machine oil only. Never lubricate machine with animal or vegetable oils.

All moving and rotating parts require regular lubrication. Begin under the bedplate. If you have a portable machine, tilt it back, loosen the large thumb screw on the underside of the machine base, and remove the base.

In replacing the machine base, make sure that the cable sheath is located in the appropriate hole in the base. Lightly tighten thumb screw .



GR C53

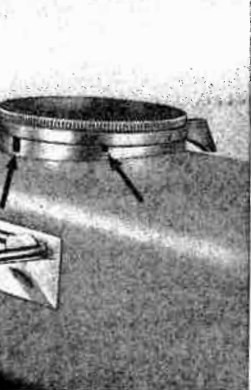


R 8220

From time to time, lubricate the needle bar frame bearings in the sewing head.

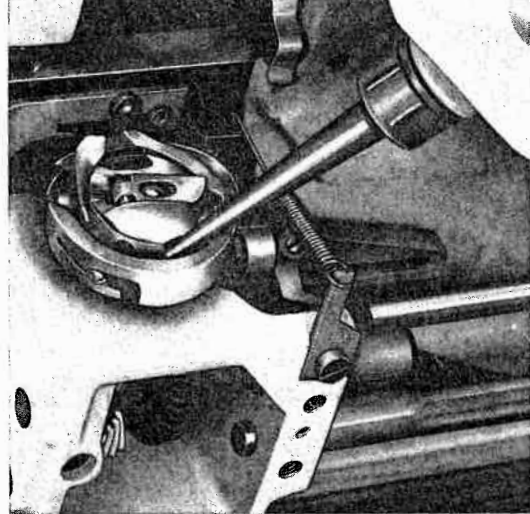
Removing the face cover see page 24.

The principal oiling points are marked by arrows in the illustrations on these pages.



GR 054

There are two openings in the rim of the stitch width dial, one on the left and the other at the back (see arrows). These openings are the oil holes of the zigzag mechanism.

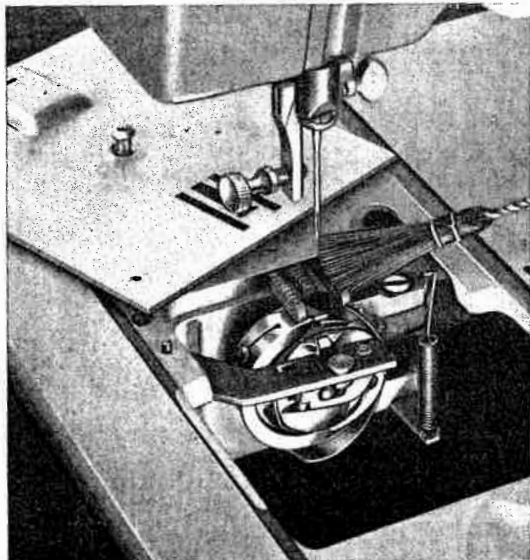


Do **not** lubricate the bobbin winder.

The raceway in the sewing hook is the most important oiling point. Put one drop of oil into the raceway **each day you sew** (see picture at top right).

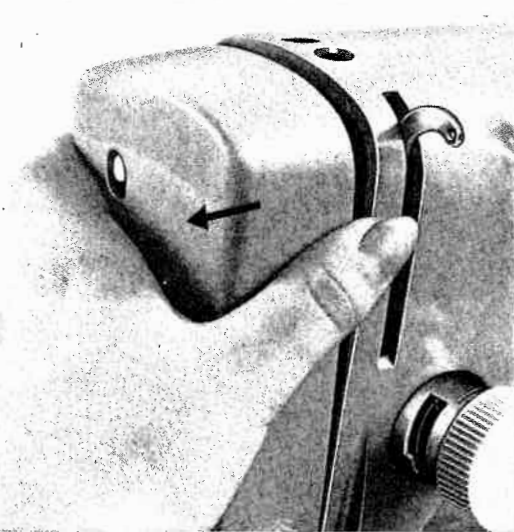
From time to time, remove the needle plate and clean the machine feed with a soft brush. Take a toothpick and remove accumulations of packed lint. Take out the bobbin case and the bobbin and clean the vicinity of the sewing hook.

Before you begin to oil the mechanism under the bedplate and at the needle-bar end of the machine, remove the dirt and lint which has accumulated on these parts.



GR 023  
GR 017





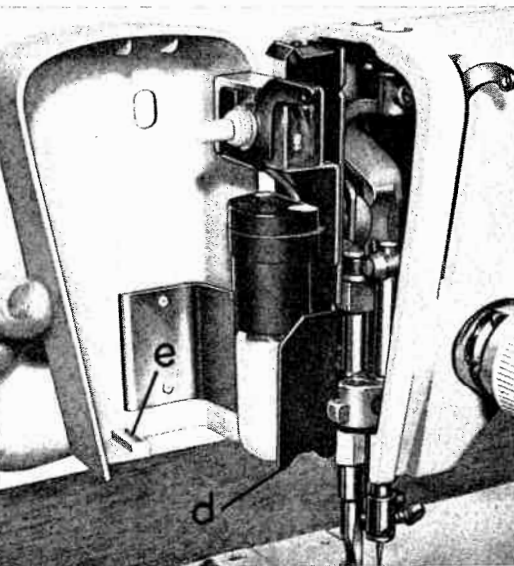
GR 024

## *Changing the Light Bulb*

The built-in 15-watt sewing light illuminates the area of stitching perfectly. To change the light bulb, remove the face cover, push the bulb into its socket, turn left, and pull out. When inserting a new light bulb, be sure to slide bulb pins into socket slots. Press bulb in and turn right.

## *Removing the Face Cover*

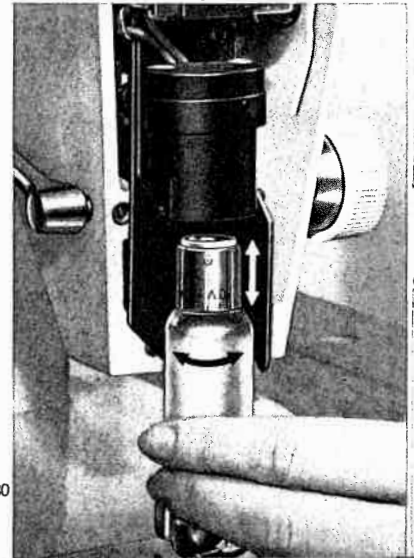
To change the light bulb or oil the parts at the needle-bar end, remove the face cover by pulling it upwards.



## *Replacing the Face Cover*

Slip tip **d** into slot **e** and push face cover up until it snaps into place.

GR 029



GR 030

# *Trouble Shooting*

## **1. Machine Skips Stitches**

Cause :

Needle incorrectly inserted.

Wrong needle.

Needle bent.

Machine threaded improperly.

Needle too fine or too thick for the thread.

Remedy :

Push needle up as far as it will go and be sure that the long groove faces toward you, and flat side of shank away from you.

Choose the correct needle from chart on page 12. (For ordinary sewing, use System 130 R needles.)

Insert new needle.

Check and correct threading as instructed on pages 14 and 15.

Use correct needle and thread (see chart on page 12).

## **2. Needle Thread Breaks**

Cause :

The above mentioned may cause thread breakage.

Thread tension too tight.

Poor or knotty thread used.

Hook raceway is jammed with thread or needs oiling.

Burrs or sharp edges on needle plate slot.

Remedy :

See remedies listed under 1. above.

Adjust tensions as instructed.

Use good quality threads only.

Clean and oil hook raceway.

Polish needle plate slot with fine emery cloth.

### 3. Needle Breaks

#### Cause :

Bent needle strikes point of sewing hook.

Needle too thin or thread too heavy.

Fabric pulls needle so it bends and strikes needle plate.

Bobbin case inserted incorrectly.

#### Remedy :

Replace needle at once to prevent further damage.

Use correct needle and thread sizes.

Don't force the feeding motion. Guide the material lightly.

Push bobbin case until you hear it snap into place.

### 4. Faulty Stitch Formation

#### Cause :

Improper tension.

Thread too heavy, knotty or hard.

Bobbin unevenly wound.

Pieces of thread between tension discs.

#### Remedy :

Adjust tensions as instructed.

Use only first-rate thread — the correct size for the needle and fabric.

Don't run thread over finger when winding the bobbin, but lead it around needle thread tension.

Raise presser bar lifter and remove thread.

### 5. Machine Feeds Improperly

#### Cause :

Machine does not feed because stitch length control set on "0".

Accumulations of lint packed between feed teeth.

#### Remedy :

Regulate stitch length, as desired.

Take off needle plate and remove lint with a stiff brush.

## 6. Machine Works Heavily

### Cause :

Hook raceway lacks oil or is obstructed by pieces of thread.

Mechanism clogged by inferior oil.

Bobbin winder working while sewing.

### Remedy :

Clean and oil hook raceway.

Use only Pfaff sewing machine oil — never salad oil or glycerine.

Stop bobbin winder.

## Thread Jamming

**The new PFAFF rotary hook will not normally jam, even if the machine should be handled improperly.**

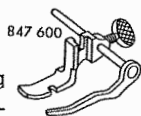
**If thread should happen to jam in the raceway of the sewing hook, jerk the balance wheel back and forth to overcome hard working of the mechanism. Thread jamming can be avoided, however, by following the instructions on page 3.**

## Using Sewing Feet and Attachments (setting see page 6)

### Zipper Insertion

Machine Setting: A—0 · B—↓

Pin or baste closed zipper on wrong side of fabric. Position of zipper depends on whether or not you want the edge of the fabric to overlap the zipper. Turn fabric to right side. Run a straight seam close to left edge of zipper, stitch across end and up the other side in one continuous operation. Use right edge of foot as a guide.

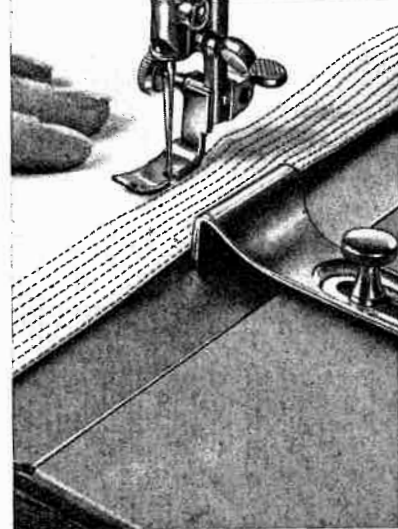


### Edge Stitching

Machine Setting: A - 0 to 4 · B - ↓

Sew parallel rows of straight or zigzag stitches at various distances from the fabric edge by using adjustable seam guide No. 53 077 and the edge stitcher (without quilting gauge). The seam guide is fastened to the machine bed with the long thumb screw. For wider marginal stitching, turn edge guide half a turn and use low end as a guide.

▶ GR 032



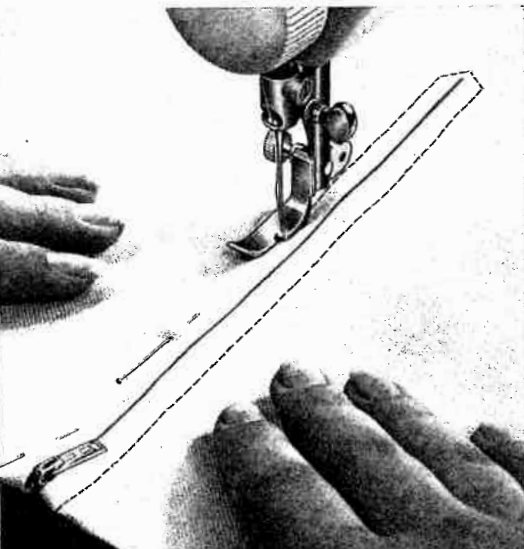
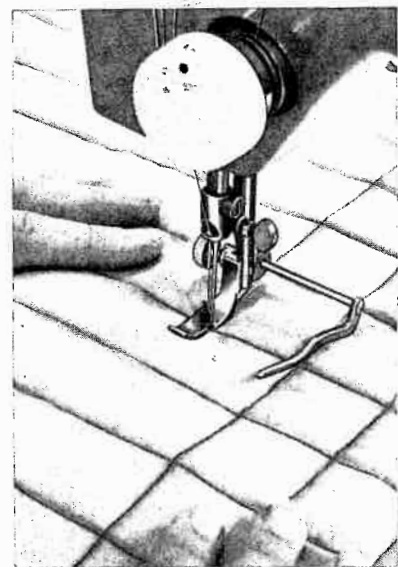
### Quilting

Machine Setting: A—0 · B—↓

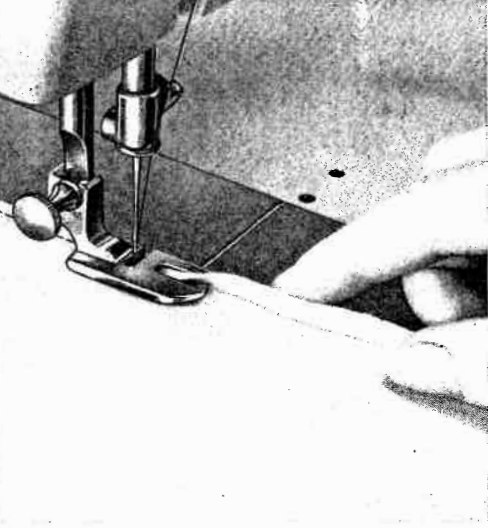
Edge stitcher No. 847 600 used with the quilting gauge sews parallel rows of stitching at any distance over the entire surface of the fabric. Always guide the gauge finger along the preceding row of stitches.

▶ Attractive tea cosies, slippers, seat pads and covers can be quilted.

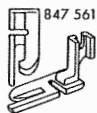
GR 033



GR 002



GR 048



### Flat Felled Seams

Machine Setting: A — 0 or 2 · B — ↓

Flat felled seams are used to durably join two pieces of fabric. They are made in two operations.

Flat felled seams usually are straight-stitched. Narrow zigzag stitches are used for felling on elasticized fabrics only.

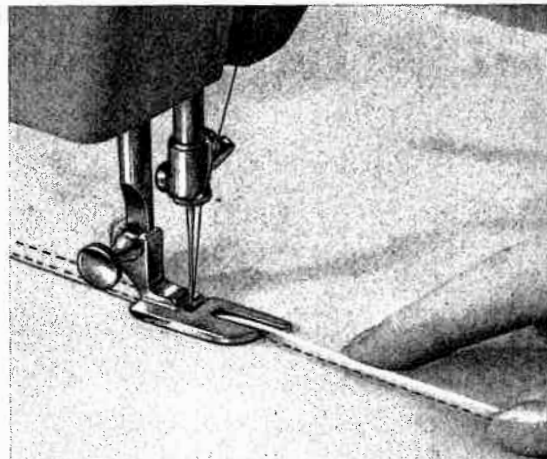
#### ◀ First Seam

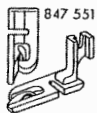
Lay pieces together with the wrong sides facing and the bottom piece protruding  $\frac{1}{8}$  inch. Feed both pieces into felling foot, as illustrated, so that the bottom fabric is folded over edge of top piece and stitched down. Make sure that protruding seam allowance is not folded twice.

#### Second Seam

Open the two pieces, place them under the needle right side up, insert seam ridge into felling foot opening, and stitch down to the left. Make sure that second seam is placed close to the edge but not beyond it.

The felling foot has a needle slot, rather than a needle hole, to permit zigzag felling.

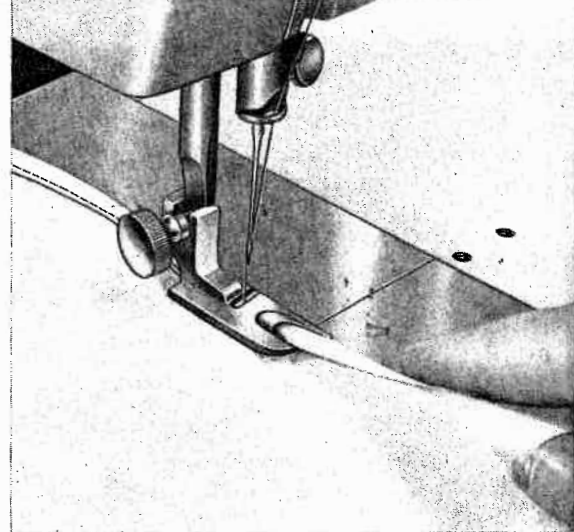




## Hemming

Machine Setting: A — 0 or 2 to 3 · B — ↓

The hemmer foot is indispensable if you want to sew a uniform hem. ► You can hem with straight or zigzag stitches, depending on the type of fabric you are using. Clip off the corner of the fabric to facilitate insertion into the hemmer foot curl. Feed fabric so that the raw edge is in line with the left edge of the hemmer foot. If you feed less, the fabric will not be folded twice and the raw edge will show.

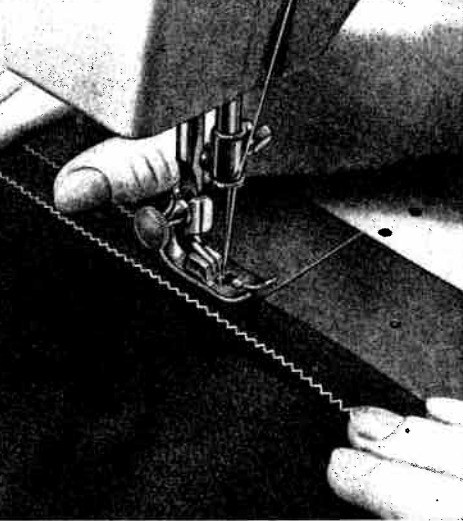


GR 004



GR 005

◀ Avoid ugly ends by slowing down feeding. To do this, press the fabric against the needle plate on the left side of the foot before you come to the end of the hem.

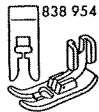


GR 037

### Butt Seaming

Machine Setting: A — 3 or 4 · B — ↓

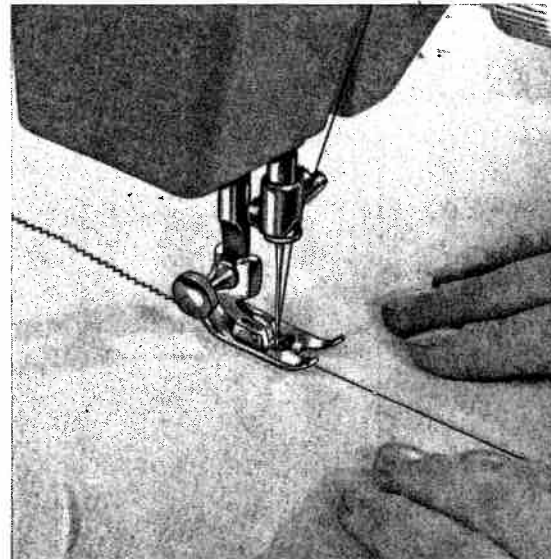
Two similar pieces of fabric which do not ravel easily may be butted together and joined with zigzag stitches. Worn bed sheets may be mended this way. Cut out worn center strip. Place the selvaged edges of the remaining pieces of sheet under the sewing foot so that the abutted edges are centered under the needle. Join them with close, wide zigzag stitches to obtain a neat and flat seam. Hem raw edges of sheet. ▶



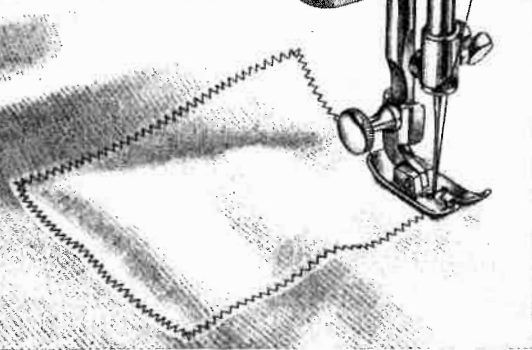
### Overcasting Edges

Machine Setting: A — 2 to 4 · B — ↓

◀ Overcasting prevents frayed edges. Use a long wide zigzag stitch and sew edge with the needle taking one stitch into the fabric and the other over its edge (normal tension setting). You may overcast edges after fabric is cut and before the pieces are joined.







GR 055

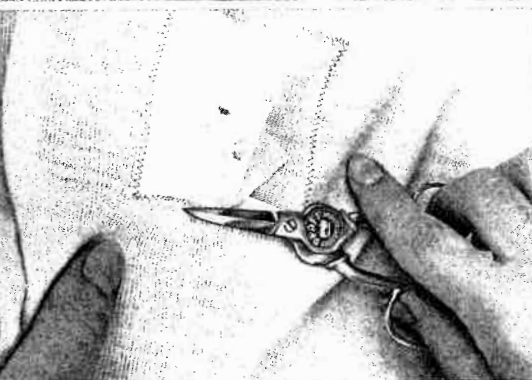
R 7157



### Inserting Patches

Machine Setting: A — 4 · B — ↓

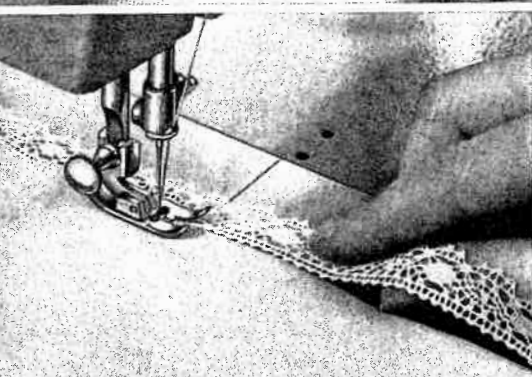
Large holes can be patched quickly. The following method may particularly be used for jersey fabrics. Cut patch square or rectangular so that the grain will match the rest of the fabric. Place the patch over the damaged area. Sew it down with a wide zigzag stitch of medium length.



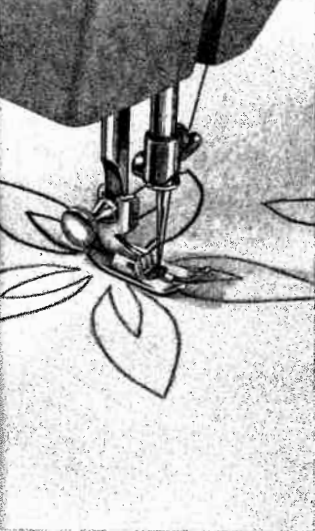
### Attaching Lace

Machine Setting: A — 2 · B — ↓

You can attach lace edging in one simple operation. Fold the edge of the fabric about  $\frac{3}{8}$ " over to the wrong side, following the texture, and preferably iron it down. Place the straight edge of the lace on the fold of the fabric and sew it down with narrow zigzag stitches, taking one stitch into lace and fabric and the other into lace only. Cut off excessive cloth on the wrong side of the material close to the seam.



GR 044



Machine Setting:

### Applique Work

A — 1½ to 2 · B — ↓

Applique is easy and modern.

Trace design on wrong side of fabric and baste a piece of contrasting material to right side. Outline design on wrong side with a narrow zigzag stitch — and the motive will appear on right side.

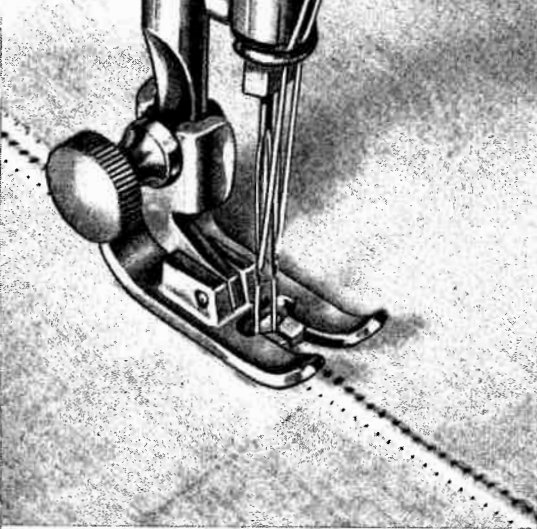
Trim excess material close to the seam and sew over edges of applique with a medium-wide satin stitch. If you want to give the design a plastic effect, use buttonhole foot No. 847 616, flick lever **B** to the left and satin-stitch over a filler thread (see also page 36).



Applique is very effective on buster suits, pinafores, bibs, frocks, covers, wall hangings, or wherever a gay note is desired.

Fill out small, but essential sections of design with granite stitches.





### Straight-Stitch Hemstitching

Machine Setting: A — O · B — ↓

Stitch Length: 2 — 4

- ◀ Insert twin hemstitching needle, System 130 Zwi-Ho, as instructed on page 13. Turn out needle set screw a little further than for ordinary needles.

The thread size, threading procedure and thread tension are the same as for cording work (see page 41).

Beautiful hemstitching effects on blouses, dresses, handkerchiefs, doilies and so forth, can be obtained with Pfaff's System 130 twin needle. The harder the fabric yarn, the more pronounced the hemstitching will be. For this reason, batiste, organdy, georgette, etc. are best suited to hemstitching, while woolly fabrics are not recommended.

GR 001

#### Procedure

Fold fabric to mark seamline or trace seamline on fabric. Sew first row. Guide fabric so that wing needle stitches along traced line. At the end of the seam, turn fabric half a turn and sew second row. Guide fabric in such a way that wing needle penetrates the needle holes it has made and enlarged previously.

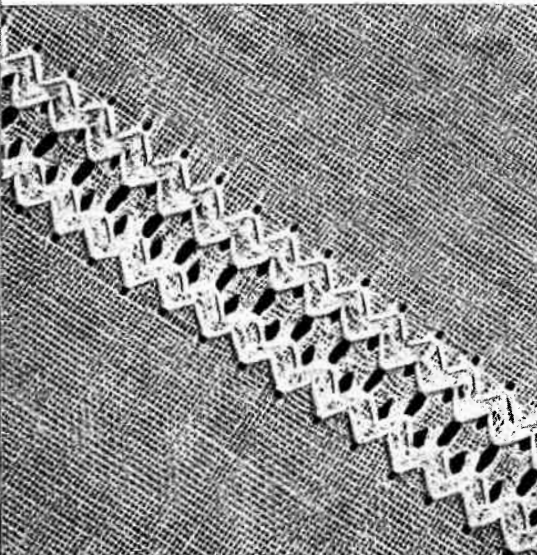
Imitation hemstitching thus requires at least two operations. If desired, additional straight or curved ornamental seams may be stitched parallel to the first one. Exciting decorative effects may be obtained by using vari-colored embroidery and darning threads.

### Zigzag Hemstitching

- ◀ Machine Setting: A — Up to 1½ · B — ↓

#### Procedure

Same as above, except that the wing needle should penetrate the traced line only when it is on the left of its throw.

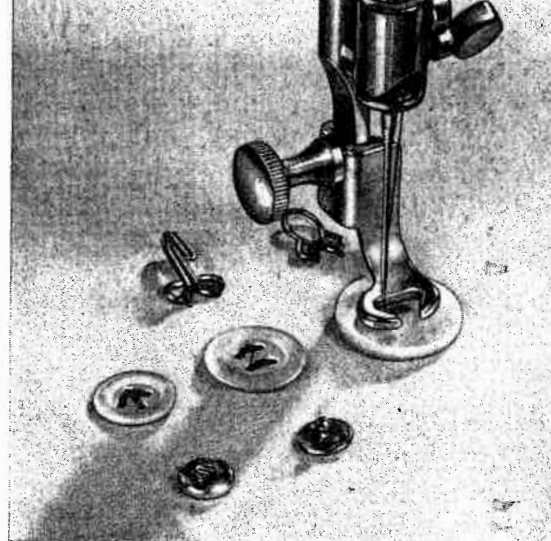


R 8427



## Button Sewing

Don't be afraid to sew on buttons, hooks, eyes or rings with your PFAFF. The needle won't break and the threads will not get loose either. The latter may happen only with ready-made clothing sewn with a chain stitch. It won't be worthwhile to take the machine out for sewing on a single button, but you will appreciate this feature when sewing lines of buttons on pillow and bed covers, on shirts or dresses, or when fastening hooks, eyelets and rings on curtains etc. There your machine will come in very handy. Attach button sewing foot No. 847 608 and turn the needle plate half a turn so that the raised portion is at the front (see picture at the bottom of page 20). The raised portion of the needle plate features an elongated needle hole.

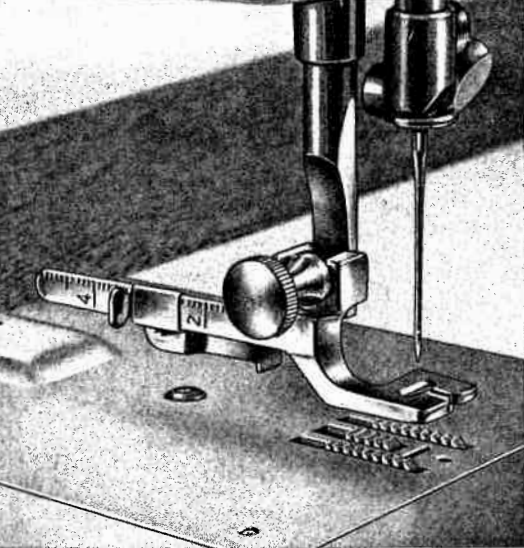


Machine Setting: A — 0 · B — ◀

Place button under button sewing foot and align so that needle will enter left hole. Let needle stitch through hole and make one or two tying stitches. Raise needle. Turn dial **A** counter-clockwise, usually to 3, until needle on the right of its throw is centered over right hole. Start machine and sew as many zigzag stitches as you deem necessary to fasten button securely. Return dial **A** to 0 and make two or three tying stitches.

When sewing on four-hole buttons, reposition button and repeat the above process, stitching through the second pair of holes.

Hooks, eyes or rings are attached in the same manner.



GR 034

Attach buttonhole foot No. 847 616 and set slide on buttonhole gauge to buttonhole length desired. The buttonhole is the right length when beginning of first seam reaches red end of slide indicator (see arrow).

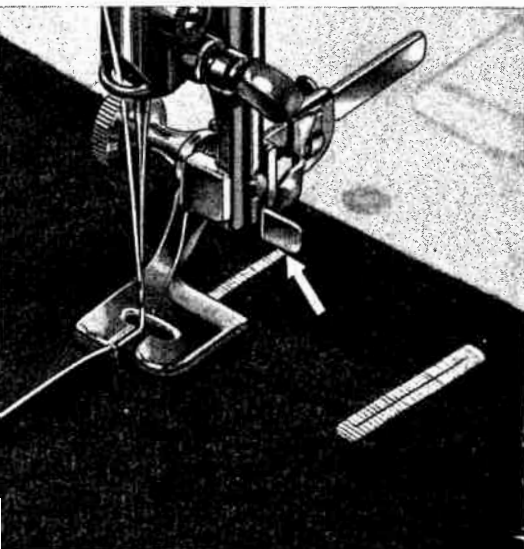
When you follow the procedure on the opposite page, the bartacks at each end of your buttonhole will be twice as wide as a buttonhole seam.

### **Sewing Buttonholes**

Machine Setting: A —  $1\frac{1}{2}$  (2) (first notch) · B —  $\leftarrow$

Stitch Length (for buttonhole seam): Almost 0

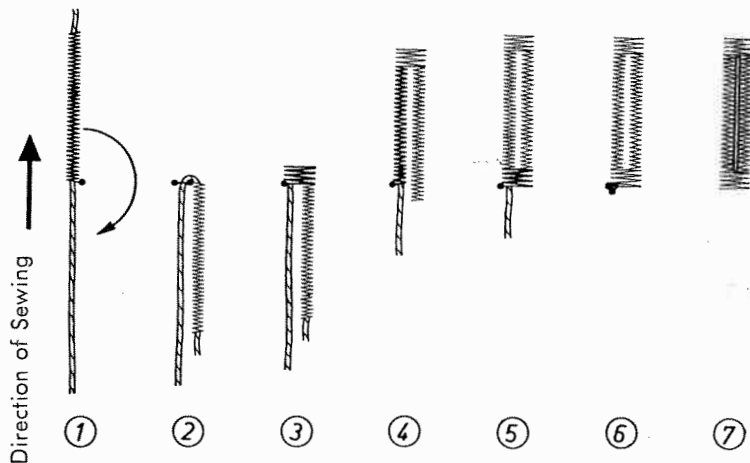
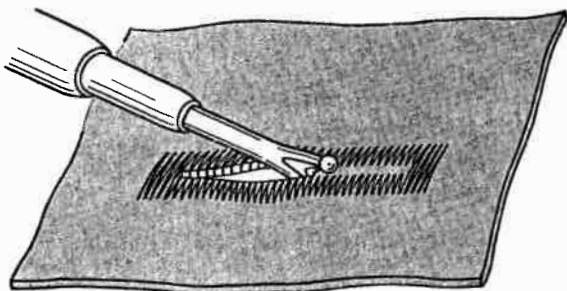
Use only embroidery and darning thread No. 50.



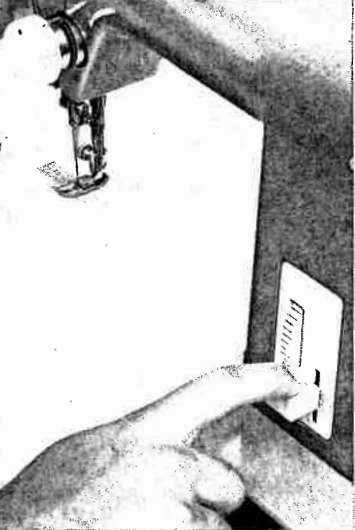
GR 035

## Instructions for Buttonholing

- 1 Sew first side over a filler cord. When beginning of seam reaches red end of slide indicator on buttonhole gauge, it is the right length. Leave needle in fabric on right side of its throw.
- 2 Lift foot, turn fabric around clockwise, using needle as a pivot. Lower foot, take one stitch to the left, pull filler cord taut and lay it parallel to completed line of stitching.
- 3 Turn dial **A** until it is caught in second notch (or stops at 4). Make 4 to 6 bartack stitches, slightly holding the material to reduce length of bar.



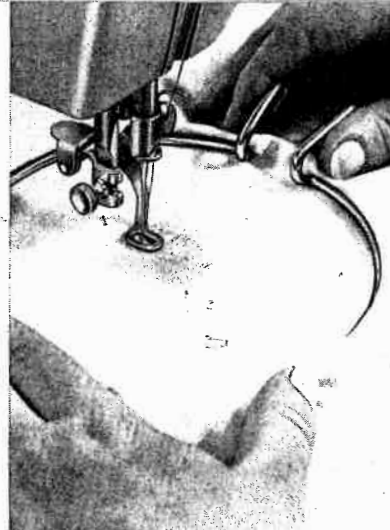
- 4 Change dial **A** to "1 1/2" (2). Trim filler cord at end of first stitch row. Sew second row and stop about 4 to 6 stitches (1/16") from end of first row.
- 5 Turn dial **A** to second notch position (or "4"). Make second tack, as instructed above (under 3).
- 6 Turn dial **A** to "0" and make 3 or 4 fastening stitches.
- 7 Trim both the sewing and filler threads. Open the buttonhole with your seam ripper. Be careful not to injure the bartacks.



GR 011



GR 056



GR 057

## Darning

Machine setting: A — 0 · B — ↓

Prepare your machine for darning as instructed on pages 20 and 21. Note that for darning the presser bar lifter should be set at position I. Place fabric into darning hoop, the damaged area being in the center of the hoop.

### Thin Spots

Remember that "a stitch in time saves nine" and reinforce spots that have worn thin with short stitches made lengthwise and across worn section. If fabric is clamped into darning hoops, move it under the needle with both hands.

Long rips may be darned with the normal sewing foot and without hoops. Set needle plate in its normal, or sewing, position and use forward-reverse feed control.

### Triangular Tears

Triangular tears are best darned by placing the torn section between hoops and making close stitches across and lengthwise. Move work under the needle with both hands.

### Small Holes

Darn small and medium-size holes by trimming ragged edges with the fabric grain. First stitch back and forth across the hole from one side to the other with the machine running at high speed. Then turn the fabric at right angles and sew back and forth over preceding work with short stitches. Make sure the stitches are taken right into the good material.



GR 038 **Monogram Embroidery**

Machine Setting: A — 3 to 4 · B — ↓

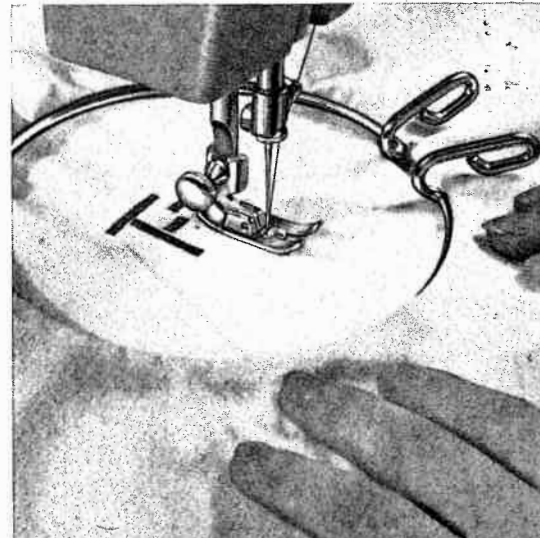
- ▶ Prepare machine as for darning. Script letters are best for monogram embroidery without a sewing foot. It requires a little practice. You will soon enjoy creative embroidery once you have learned to move the material at a uniform rate. The fabric should be held taut in the hoops and the presser bar lifter lowered to position I. Let the needle stitch into the fabric at the beginning of your design and draw bobbin thread up through the fabric. Hold both thread ends and sew over outline, moving hoops slowly and evenly. To give your monogram dimensional quality, embroider outline twice. Be sure stitches are closely spaced.



**Sewing Monograms**

Machine Setting: A — 2 1/2 to 3 · B — ↓

- ▶ The procedure below is primarily used for block letters. Set needle plate so that feed dog feeds the material. Attach zigzag sewing foot No. 838 954 and set machine for satin stitch. Sew outlines of monogram, making sure that seams do not overlap at joints of letters.





## Cording

Machine Setting: A—0 · B—↓

To cord on your Pfaff 90, use a cording foot and a twin needle.

Twin needles are available for needle distances of 1.2 (3/64"), 1.6 (1/16"), 1.8, 2.0 (5/64"), 2.5 (3/32"), 3.0, and 4.0 (5/32") millimeters.

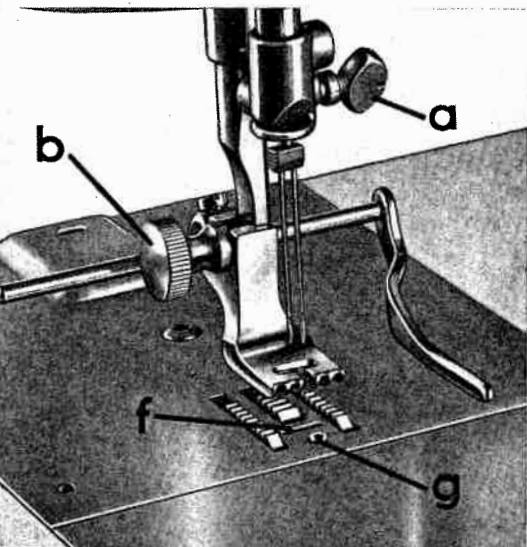
Cording feet are available in three varieties, as follows:

Pin tucks are made with cording foot No. 847 680 (7 grooves, 3/64" wide each) and a 1.2-mm twin needle.

For narrow cording use cording foot No. 847 675 (5 grooves, 1/16" wide each; see ill.) and a 1.6-mm twin needle.

Wider cording is made with cording foot No. 847 671 (3 grooves, 5/64" wide each) and a twin needle with a needle distance of 2.0 or 2.5 millimeters.

Cording feet and twin needles, System 130, are supplied on special request and at extra cost.



### Changing the Needle and the Sewing Foot

Bring take-up lever to highest point, loosen needle set screw **a**, and pull ordinary needle out of needle clamp. Insert twin needle into opening of needle clamp and push it up as far as it will go. Make sure that the flat side of the shank faces toward the back. Tighten needle set screw **a** securely.

Turn sewing foot thumb screw **b** to the left and take out the sewing foot. Slip on cording foot and tighten screw **b** securely.

It is best to turn out screw **b** completely if you want to slip on a cording foot with the guide attached.

### Thread Size

Pin tucks and narrow cording are made with a No. 50 embroidery thread, wider cording with sewing silk in the needle and on the bobbin.

Set the machine for a medium stitch length (about 4).

### Upper Threading

Place a spool of thread on each of the two spool pins. Pass both thread ends through both thread retainer openings **2**, as illustrated on page 15. Lead one thread between the rear and center tension discs, and the other between the center and front tension discs of upper tension **3**. Raise take-up lever **4** to its highest position and pass both threads through the hole at its end. Pull threads into slot **5**, and thread each needle from front to back.

The bobbin thread is drawn up as instructed on page 16. To do this, hold both needle threads in your left hand.

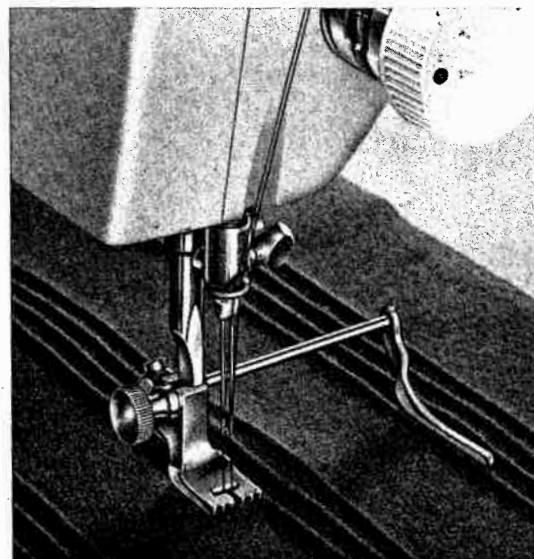
### Thread Tension

Slightly increase the bobbin thread tension, and increase or decrease the needle thread tension depending on the type of fabric used. If the tension has been set correctly, the bobbin thread should appear as a faint zigzag line on the other side.

### Filled Cording

If you want to make cording in filmy fabrics or render your cording more prominent, Pfaff recommends that you insert a filler cord. Its thickness depends on the cording size you want.

Remove the bed slide and pass the filler cord from below through hole **g** located in front of the oval needle hole **f** (see ill. on page 40). Lay the end of the filler cord back under the cording foot (together with the needle and bobbin thread ends). Pull a filler cord forward under the bed slide and place the ball in your lap.



## Spacing between Tucks

To ensure uniform spacing between parallel tucks, place the preceding seam into one of the grooves of the foot and use it as a guide.

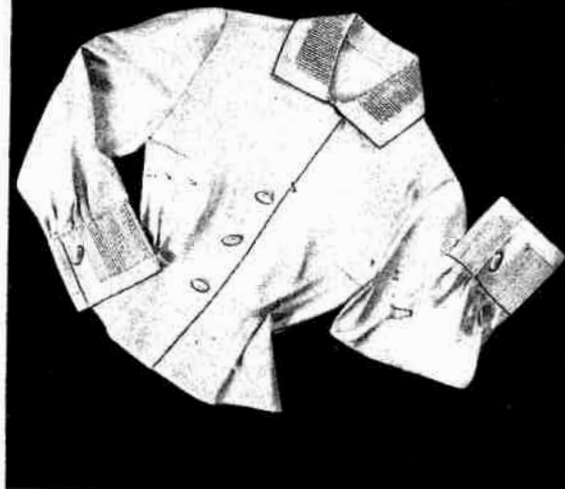
For a larger spacing between tucks, use the adjustable guide (see ill. on page 41) which is part of every cording foot.

## Various Cording Effects

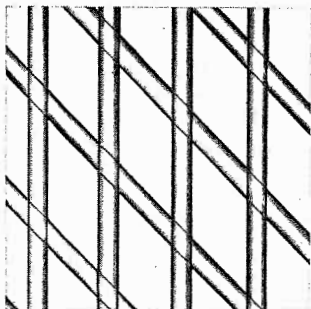
Attractive cording effects may be obtained by combining horizontal, vertical and diagonal tucks or stitching curved tucks (see ill. below).

If you want to turn a corner, leave needle in fabric (up to needle eye only), lift foot, turn fabric, lower foot, and continue sewing. To stitch an acute angle, turn fabric halfway, let needle make one stitch, turn fabric all the way, and resume stitching.

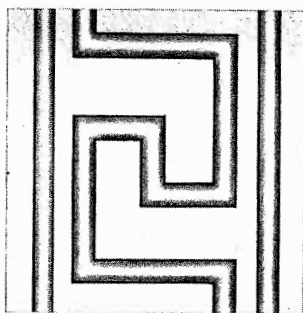
GR 058



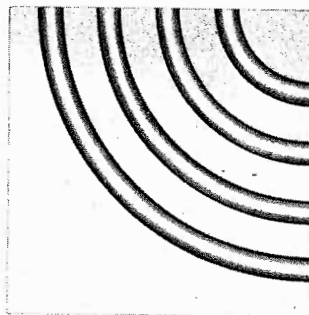
GR 040



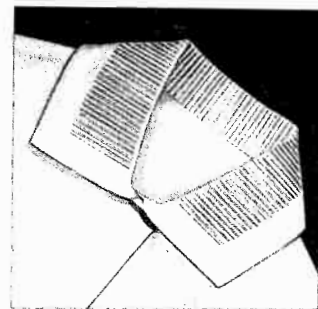
GR 041



GR 039



GR 058 A





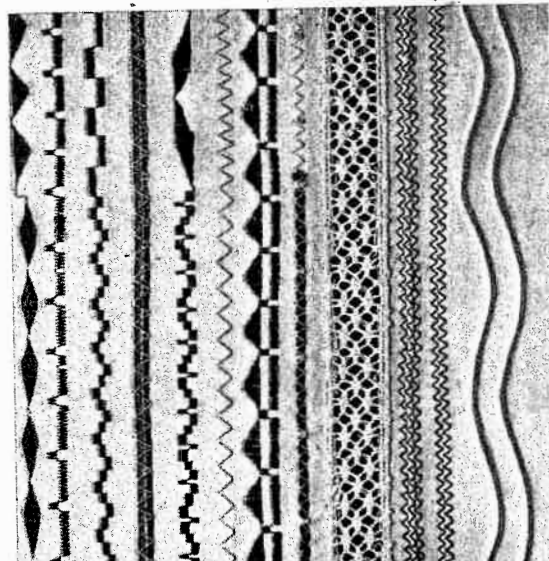
GR 059



### Ornamental Sewing

You can make exciting fashion stitch designs by alternating straight and zigzag stitching, varying stitch length, stitch width or needle position by hand. This will be easy after you have had sufficient practice. Some of the designs you can make are illustrated below. For ornamental sewing, use zigzag sewing foot No. 838 954.

Interesting two-needle effects can be obtained by using a 1.6-mm twin needle (see page 40) and different color thread. For twin-needle sewing, the stitch width dial should not be turned beyond "1 1/2".



### Motorabhebevorrichtung

An Ihrer Maschine ist rechts unter dem Handrad ein Hebel angebracht, den Sie vor dem Nähen nach unten zu der Punktmarke drehen. Dadurch befindet sich der Motor in Arbeitsstellung.

Bei längerer Unterbrechung Ihrer Näharbeit heben Sie den Hebel wieder an. Der Motor befindet sich dann in Ruhestellung. In dieser Lage können Sie bei einer mit Elektromotor ausgerüsteten Maschine auch mit Fußantrieb nähen, ohne den Motor mitzubewegen.

### Motorvrijstelapparaat

Aan Uw machine bevindt zich rechts onder het handwiel een stelknopje, dat U, alvorens met naaien te beginnen, in richting der markeringspunt moet draaien.

Bij langere onderbreking der naaiarbeit drukt U het knopje weer naar boven, zodat de motor in vrijstelling is. In deze stelling kunt U ook door voetaandrijving naaien zonder dat de motor meeloopt.

### Motor Disengaging Mechanism

Your machine features a lever underneath the balance wheel which serves to swing the motor to its operative position. To do this, flick the lever down to the dot mark.

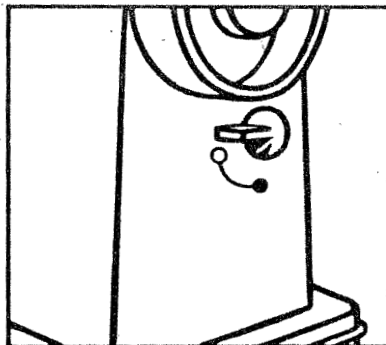
After you have completed sewing and before you put the machine away, flick the lever to its top position in order to return the motor to the inoperative position.

With the motor swung out of engagement, the machine with treadle mechanism can be driven by foot power.

### Dispositif de détachement du moteur

Au-dessous du volant de tête, à droite, de votre machine il y a un levier qui est à tourner vers le bas jusqu'au point de repère avant de commencer à coudre. Par cette manipulation le moteur se trouve en position de travail.

Lors de l'interruption assez prolongée de votre travail de couture reportez le levier à sa position initiale. Le moteur se trouve maintenant en position de repos et en cette position vous pouvez coudre aussi avec entraînement à pied sans agiter le moteur.



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