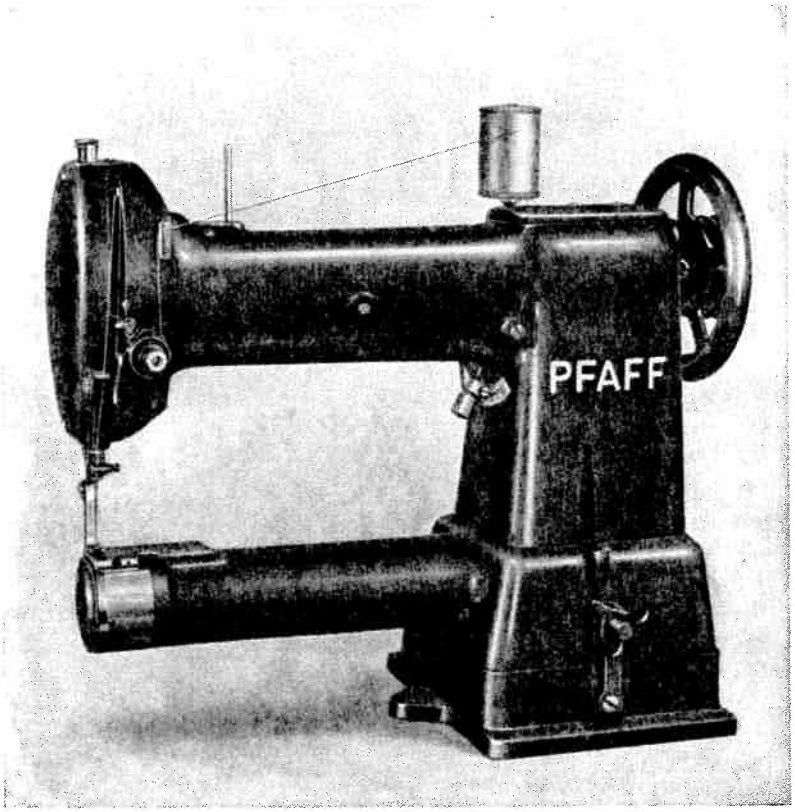

PFAFF 28

Cylinder Bed Right Arm Sewing Machine

with Beak Shuttle

INSTRUCTION BOOK

G. M. PFAFF AG, Sewing Machine Factory, KAISERSLAUTERN

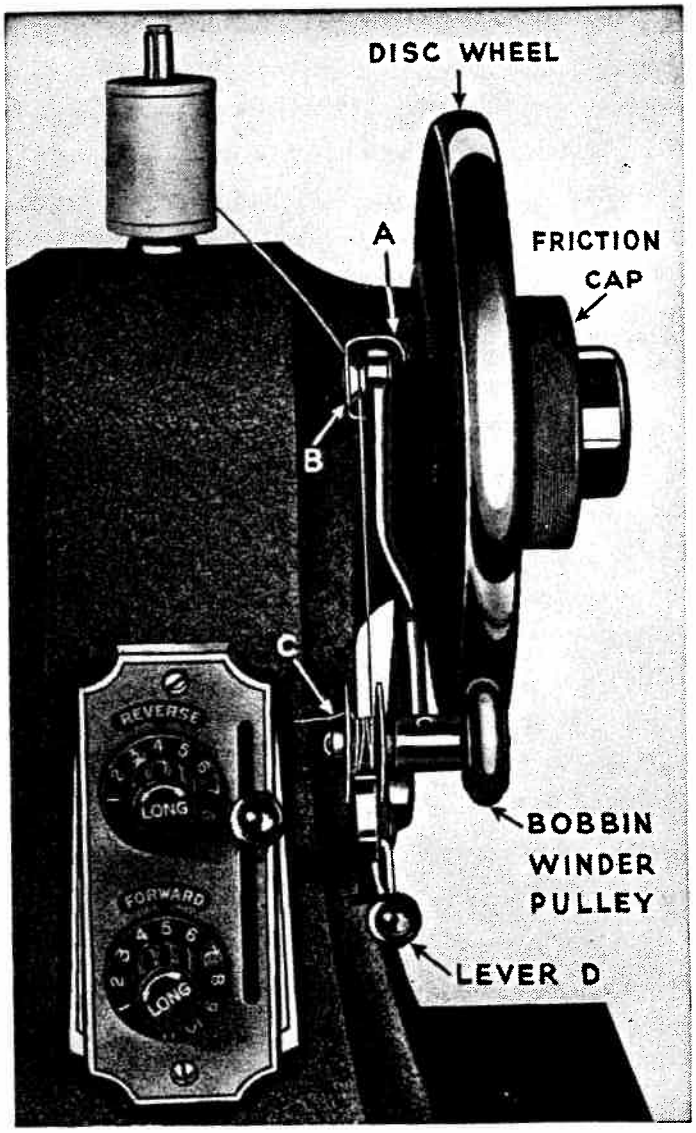
DISC WHEEL
A
FRICTION
CAP
B
C
REVERSE
LONG
FORWARD
LONG
BOBBIN
WINDER
PULLEY
LEVER D

FIGURE 8

Index

Instruction Book

PFAFF 28

Cylinder Bed Right Arm Sewing Machine

Fitted with standard or extra large beak shuttle, link take-up, knee lever presser foot lifter, reversible drop feed, wooden extension or iron screw-on work support for flat seaming operations, provided for foot, individual motor or power bench drive

1. Delivery of the Machine

Unless shipped directly, every sewing machine, when received at our dealer's, is unpacked, carefully checked for possible damage inflicted in transit, cleaned, and tested for perfect sewing before being released for delivery to the customer.

2. Engaging and Disengaging the Sewing Mechanism

Two varieties of the PFAFF 28 are available:

1. with standard-size beak shuttle;
2. with extra large beak shuttle.

Machines equipped with standard-size beak shuttles have a balance wheel with exchangeable pulley so as to permit easy conversion of the machine for foot or power drive respectively.

The machines are shipped with the sewing mechanism disengaged so that only the pulley will rotate when treadling or starting the motor. To engage the sewing mechanism, hold the balance wheel with your left hand and turn the large knurled lock nut **R** with your right hand clockwise in the direction of the arrow (see photo 1).

When lock nut **R** is turned counter-clockwise, the sewing mechanism is disengaged for winding the bobbin.

To increase the piercing power of the needle, the machines with extra large beak shuttles are fitted with a larger and heavier balance wheel with fixed pulley so that it is not possible to disengage the sewing mechanism of these machines.

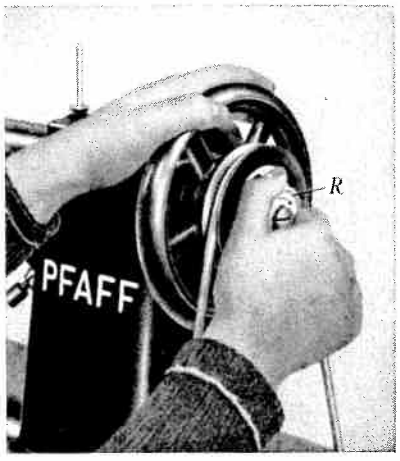

Photo 1

3. Threading the Needle

As shown in photo 2, pass the thread from spool 1 through the three slotted holes of thread guide 2, around and between the tension discs 3, through check spring 4, beneath guide 5, through eyelet 6, right-left through take-up 7, through eyelets 8 and 9, needle bar eyelet 10, and then left-right through needle eye 11.

Note: As with all sewing machines, the needle of the PFAFF 28 is threaded in "long groove—short groove" direction.

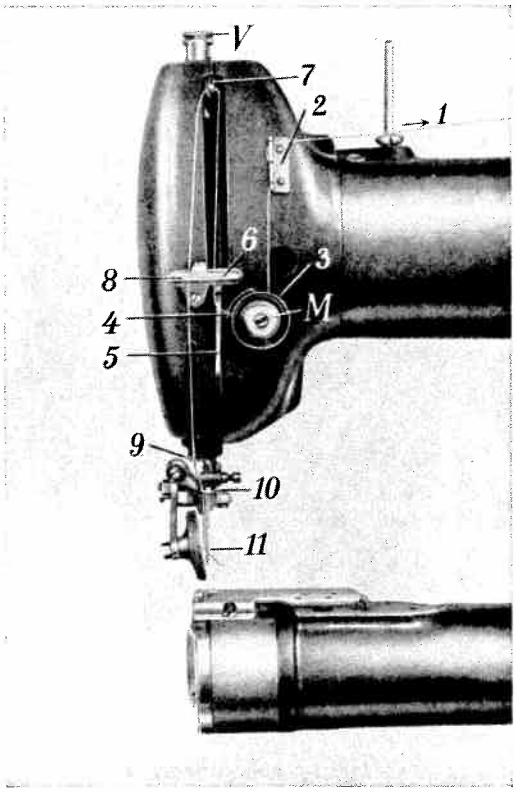

Photo 2

4. Winding the Bobbin

All PFAFF 28 machines are equipped with a table winder which has proved very useful in all sewing shops.

As shown in photo 3, place spool 1 on pin 2, and the empty bobbin on spindle 6. Pass the thread from spool 1 through the hole 3, between tension discs 4, over pin 5, and through the slot in the face of the bobbin. By pressing down engaging lever 7, the bobbin winder pulley is pushed over against the belt of the machine and the winder is engaged. Now start the machine. When the bobbin is filled, the throw-off lever 8 will stop the bobbin winder automatically.

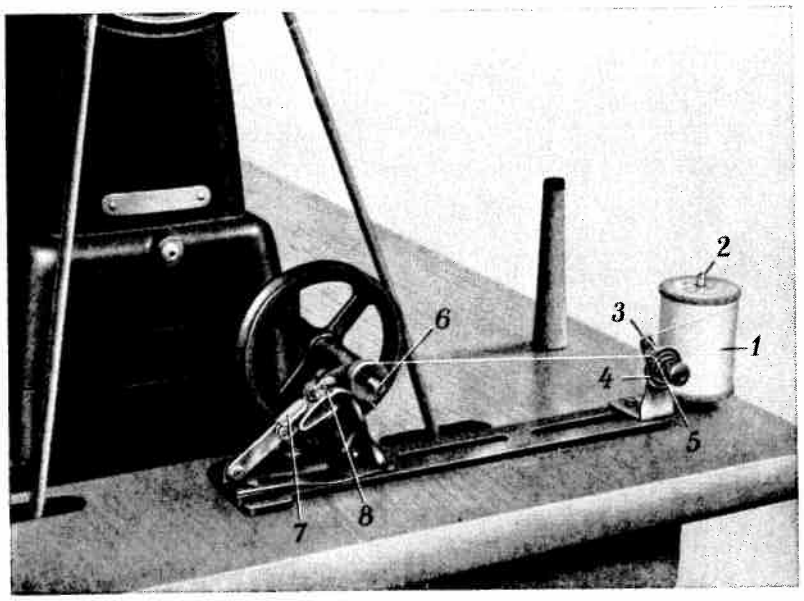

Photo 3

The empty bobbin is taken out of the machine, the full bobbin removed from the spindle and the thread torn off. Then the full bobbin is inserted in the machine and the empty bobbin placed on the spindle for rewinding. This way, a considerable time saving is effected since a full bobbin is at hand at any time.

Also the operators of machines with disengageable balance wheel will profit from this ideal way of winding the bobbin.

5. Changing the Bobbin and Threading the Bobbin Case

Raise the shuttle race cap by slightly pushing it up with thumb and index finger of your left hand so that it can be slipped over the head of screw **a** (see photo 4), then let it hang by the hinge screw. Turn the balance wheel until the beak shuttle is in its extreme right-hand position. The beak shuttle can now easily be opened with the index finger of your left hand as shown in photos 5 and 6, and the bobbin taken out.

When inserting the full bobbin, care must be taken that the thread is pulled from below into slot **b** as shown in photo 7 so that the bobbin will

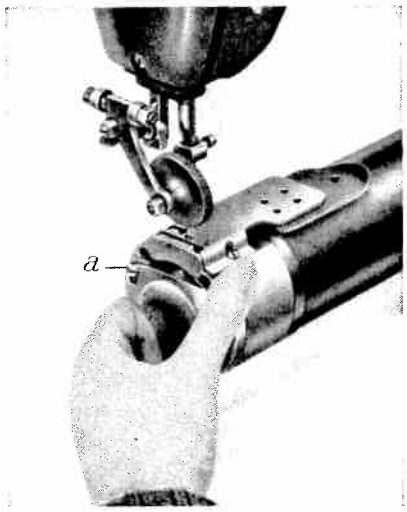

Photo 4

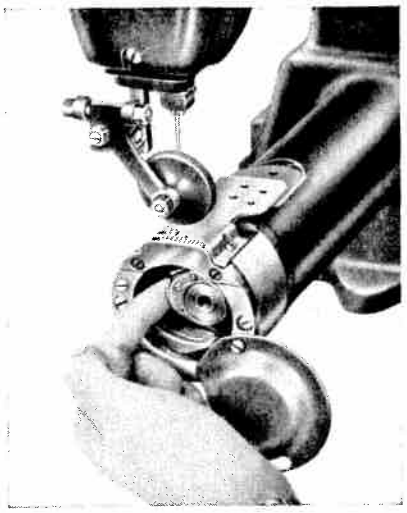

Photo 5

turn clockwise when the thread is unreeled. A slight pressure against the hinged shuttle cap will make it snap into position. Then hold the bobbin and draw the bobbin thread down somewhat so that it slips completely under the tension spring and comes out again through delivery eye **c** (see photo 8).

6. Drawing Up the Bobbin Thread

1. Hold the end of the needle thread.
2. Turn the balance wheel slowly until the bobbin thread comes up in a loop through the needle hole (see photo 9).

3. Lay both threads back under the presser foot.

Basic Rule: Stop the machine or commence sewing only with the take-up in its highest position.

This precaution will keep the thread from slipping out of the needle eye and will prevent jamming of the thread in the shuttle race. In this case it is not necessary to hold the needle and bobbin threads when commencing to sew.

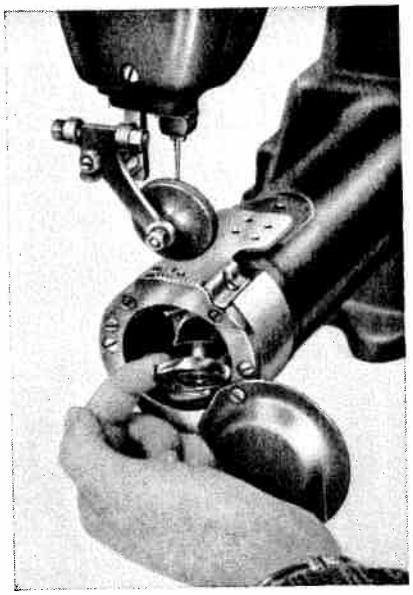

Photo 6

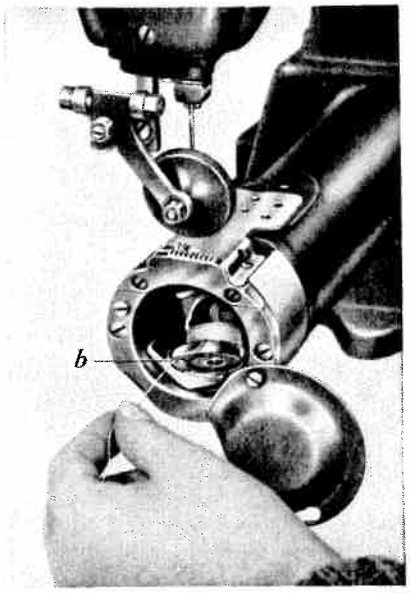

Photo 7

7. Regulating the Thread Tensions

To obtain a perfect seam, observe the following points:

The needle and bobbin threads should be locked in the center of the material as shown in figure 10.

Turning the tension nut **M** clockwise ⟫↘ , will increase the **needle thread tension;** turning it counter-clockwise ↙⟪ , will decrease the tension (see photo 2).

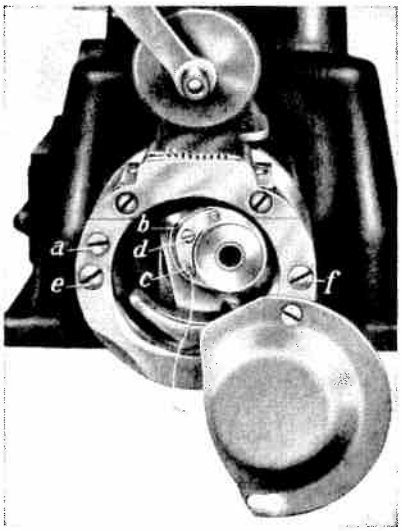

Photo 8

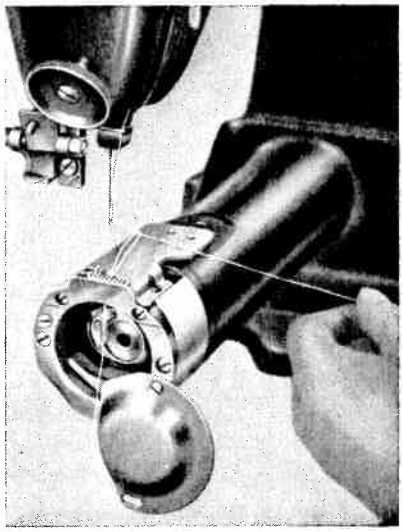

Photo 9

The bobbin thread tension is regulated by means of the small screw driver. Turning tension screw **d** (see photo 8) clockwise ⟩⟩⟩↘ , will increase the tension; turning it counter-clockwise ↙⟨⟨⟨ , will decrease the tension.

Since most of the stitching work done on the PFAFF 28 calls not only for perfect but also for strong and durable seams, the thread tensions must be regulated very carefully. The seam must show tightly drawn and straight stitches which are locked in the center of the thickness of the material.

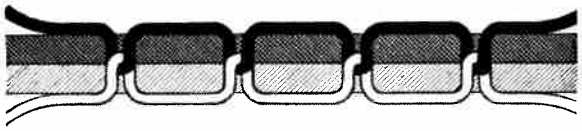

Fig. 10

It is absolutely essential to use top-quality threads. Never use cheap threads of inferior quality which might impair the quality of the whole work. To properly regulate the thread tensions requires some experience until one can tell whether the needle thread tension is too tight (as shown in fig. 11) or the bobbin thread tension too loose.

In fig. 12, the needle thread tension may be too loose or the bobbin thread tension too tight.

The operator will have to decide in each individual case whether or not either tension requires adjustment, particularly so if the thread forms small knots or loops on the upper or underside of the material.

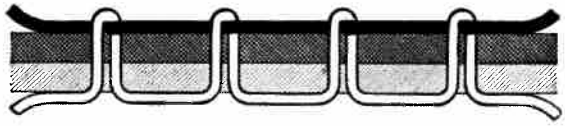

Fig. 11

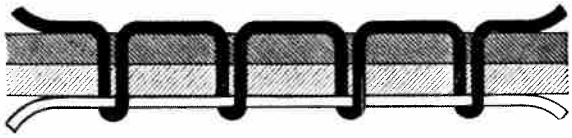

Fig. 12

Note: The needle thread tension can only be adjusted with the presser bar lowered, as raising the presser bar will automatically release the tension.

8. Regulating the Pressure on the Material

According to the use for which they are intended, the PFAFF 28 sewing machines are fitted either with a roller presser or with a presser foot.

Proper feeding and even stitching as well as preventing injury to the underside of the material through the teeth of the feed dog depend on the proper adjustment of the pressure on the material exerted by the roller presser or presser foot.

Through turning adjusting cap screw **V** inwardly, the pressure on the material in increased; and through turning it outwardly ↙ , decreased (see photo 7).

For stitching delicate leather, it is absolutely necessary to adjust the pressure on the material very carefully in accordance with the thickness and the quality of the leather to be sewn.

9. Choosing the Proper Needle

For obtaining perfect seams in leather work with PFAFF 28 machines, it is imperative that the proper needle sizes be chosen.

If the needles are too thick for the material to be sewn, ugly needle marks will show in the material. With long, thin needles, vibration of the needle can hardly be avoided. Therefore, two needle systems comprising needles of different lengths are used with PFAFF 28 machines, depending on the type of work. For machines intended for fine stitching in lightweight leather, short needles with round shank, System 690, are used. This short needle does not vibrate and can be twisted somewhat to obtain perfect loops with any grade of thread.

System 690 needles are available with different needle points as follows:

System 690 R is a needle with round point used for sewing fabrics.

System 690 P is a needle with wedge point, the cutting edge of the needle running in the direction of the needle eye. Therefore, the needle mark in the material is transverse. This needle is chiefly used for ornamental stitching in fine leather.

System 690 LL is a needle with reverse-twist point, the cutting edge of the needle running diagonal from left to right (looking on the needle point). Its needle mark in the material is oblique. This needle is used for sewing hard leather with short stitches.

The sub-classes used for sewing **thicker leather** are fitted with the longer **flat-shank needle, System 805.** Also this needle can be had with needle points R, P and LL.

Table of Needle Sizes

Variety	Needles System	Needle Size
PFAFF 28-8 A/B	690	80-110
PFAFF 28-9 A/B	690	80-110
PFAFF 28/10 C/D	805	120-180
PFAFF 28/15 B/C	805	90-140
PFAFF 28-17 B	805	80-110
PFAFF 28-17 C	805	110-160
PFAFF 28-18 B	805	80-110
PFAFF 28-18 C	805	110-160
PFAFF 28-33 A/B	690	80-110
PFAFF 28-133 A/B	190	90-110
PFAFF 28-155 B	805	90-110
PFAFF 28-155 C	805	110-140
PFAFF 28-190 A/B	690	80-110
PFAFF 28-192	805	90-140
PFAFF 28-199	805	120-180

Length of Needle

System 690: $1^{33}/_{64}$" long
„ 805: $1^{13}/_{64}$" long
„ 190: 1.929" long

The proper needle size should be selected very carefully from the following table so as to match the thread and material used.

Needle and Thread Chart

PFAFF Needle Size	Thread Weight		Class of Work
7 8	Cotton Rayon Silk, continuous fiber Silk, staple fiber	90-60 40-30 00 24	very fine leather, flimsy fabrics
9	Cotton Rayon Silk, continuous fiber Silk, staple fiber	60-40 30-24 0 22	fine leather, fine linings
10	Cotton Rayon Silk, continuous fiber Silk, staple fiber	50-30 30-24 A 20	medium leather, fine shoe uppers and bags, medium fabrics
11	Cotton Rayon Linen Silk, continuous fiber Silk, staple fiber	40-30 24-16 80-70 B 18	cowhide leather work, knapsacks, light canvas, etc.
12	Cotton Rayon Linen Silk, continuous fiber Silk, staple fiber	30-21 16-12 70-50 C 16	cowhide leather work, light briefcases, shopping bags, etc. oilcloths
13	Linen Rayon Silk, continuous fiber Silk, staple fiber	50-40 12-8 D 14	medium-heavy leather, bandages, cowhide work shoe uppers, oiled cloths, leather garments
14	Linen Rayon Silk, continuous fiber	40-35 8 E	
15	Linen Rayon	35-25 8	
16	Linen	30-20	heavyweight leather, football boots, footballs, mountain boots, light saddler work
17	Linen	25-18	
18	Linen	20-18	
19	Linen	18	

10. Inserting the Needle

In any case, the needle is to be pushed up in the needle bar as far as it will go and to be fastened securely.

Flat-shank needles, System 805, are to be inserted with the flat side of the shank facing the needle bar. However, inserting round-shank needles, System 190 and 690, should present no problem if the following basic rule is observed:

In all sewing machines, the short groove of the needle should face the shuttle.

11. Regulating the Length of Stitch

The PFAFF 28 has its stitch regulator conveniently arranged under the arm. This device allows to regulate the length of stitch and to reverse the direction of feeding for tying off seams.

The stitch regulator lever is provided with a large thumb screw **A** (see photo 13) which serves to set and limit the length of stitch as desired. A scale conspicuously arranged under the arm indicates the stitch length in millimeters.

If the pointer of the stitch regulator points at zero, the machine does not feed at all. When the lever is pulled toward the operator, the machine will feed forward, the length of stitch being indicated by the pointer on the scale. If, after setting the stitch regulator lever at the length of stitch desired, the screw **A** is turned inwardly as far as it will go and the lever is then pushed over from the operator, the machine will feed reverse making stitches of about the same length as for forward sewing.

Note: Use reverse feeding only for tying off the ends of seams.

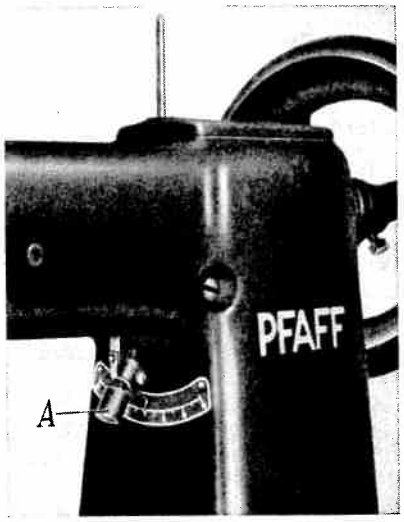

Photo 13

12. The Knee Lever Presser Foot Lifter

With the exception of sub-class 28-15, all PFAFF 28 machines are provided with a knee lifter which permits to raise and lower the roller presser or presser foot by knee control and allows the operator to manipulate the work with both hands when performing intricate sewing operations.

The knee lever pad can easily be adjusted vertically and horizontally so as to suit every operator.

13. Taking Out the Beak Shuttle

When it becomes necessary to take out the beak shuttle for a thorough cleaning or for removing thread jamming in the shuttle race, remove the shuttle race cap (as instructed in paragraph 5), loosen the two fastening screws **e** and **f**, and take off the shuttle race ring (see photo 8). When doing this, make sure, the needle bar is in its highest position and the shuttle held fast. If the shuttle should fall on the floor, its glasshard point might break off.

It is easy to open the shuttle when it is done as shown in photos 14 and 15.

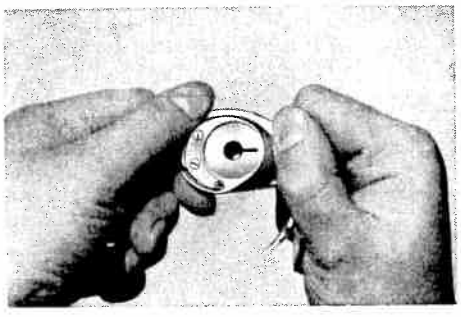

Photo 14

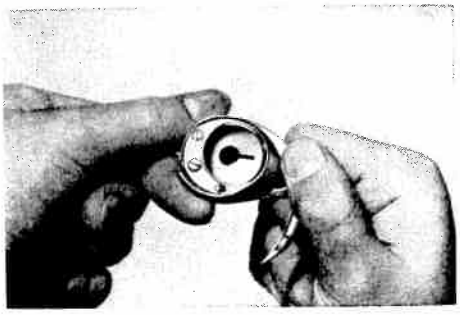

Photo 15

The extra large beak shuttle which is used in conjunction with longer needles is of the same type as the standard-size beak shuttle, the only difference being its larger size to accomodate a bobbin of a greater capacity.

14. Tilting the Machine Over

Compared with the obsolete PFAFF 23 and 25 Cylinder Bed Sewing Machines, the PFAFF 28 features a considerable improvement in that its sturdy base is divided so as to permit tilting the machine back and resting its head on the wooden support after loosening wing screw **F** and swinging back the catch **G** (see photo 16).

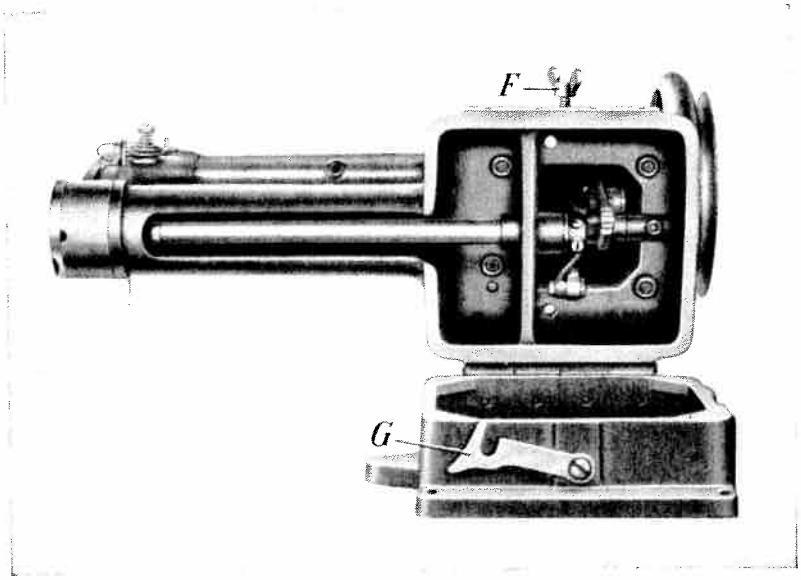

Photo 16

15. Maintenance of the Machine

Careful cleaning and adequate lubrication will considerably increase the service life of your machine.

But please, do not squirt oil into every opening of the machine since excessive oil is apt to soil your work. Oil should only be applied to all oiling points marked with arrows in photos 17 and 18.

Top-quality sewing machine oil can be obtained from every PFAFF dealer.

A drop of oil should also be applied occasionally to the link parts of the take-up (see photo 17).

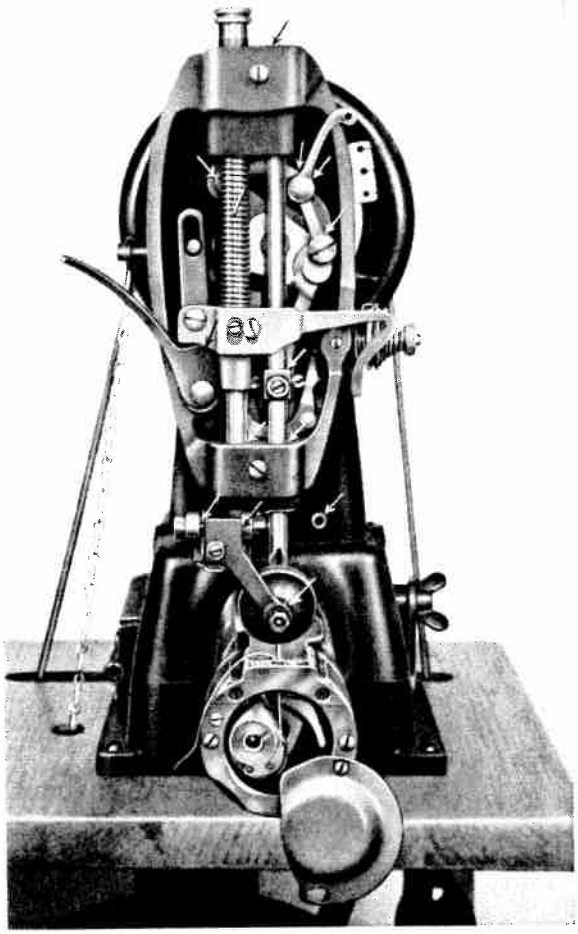

Photo 17

As a rule, all bearings and parts in movable contact are to be oiled. After the machine has been tilted over (as instructed in paragraph 14), the parts inside the vertical part of the arm are easily accessible (see photo 16).

The machine will repay thorough cleaning and proper oiling with light running and perfect stitching.

All fluff that has accumulated between feed dog and needle plate should be brushed off as often as possible as, otherwise, its abrasive effect would wear off the shuttle unduly.

Before cleaning the machine, it is advisable to remove the needle to prevent injury to your fingers.

Packed dust or fluff should be carefully removed with a pointed piece of wood. Scissors and screw drivers are unsuitable for this purpose.

The lacquer finish of the machine does not require special maintenance. It is sufficient to rub off the machine now and then with some kerosene and to polish it with a soft cloth.

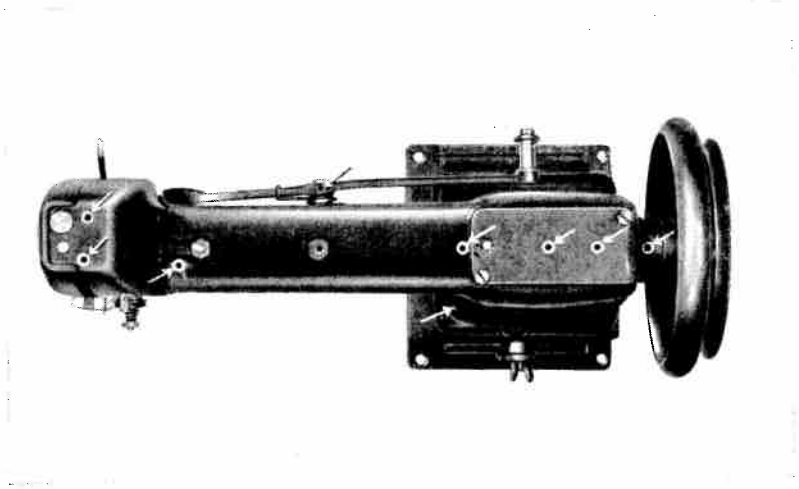

Photo 18

16. The Treadle Stand

Only in very rare cases will the PFAFF 28 be used as a foot driven machine exclusively.

Maintenance of the treadle stand with the ball bearing pitman rod is very simple. It is entirely sufficient to apply a drop of oil to the crank tips and the treadle studs occasionally. The ball bearing of the pitman rod is filled with preservative grease which will make lubrication superfluous for a long time. When the grease is to be replenished later, make sure that only preservative grease be used. Oil would be flung out when the machine runs at high speed and might soil the operator's dress.

The wrench coming with the machine serves for adjusting the ball bearing and the pitman rod.

17. Power Drive

In order to make full use of the speed this machine is capable of doing, the PFAFF 28, in most cases, is equipped, with a $^1/_6$ HP electric motor which allows for speeds up to 1,600 stitches per minute, depending on the type of material sewn. Through pressing down a conventional treadle, the sturdy wire starter controlling the speed of the machine is cut in.

The electric motor calls for practically no maintenance. After a longer period of use, check if there is sufficient grease in the grease bushings. If filling up is necessary, use only the special motor grease which we supply in handy tubes.

The complete treadle assembly is left on the machine when it is power driven. This means that, in the case of a breakdown of the power supply, the machine can instantly be used for foot drive and that a subsequent conversion to power drive of a foot driven machine will present no difficulty.

18. Cylinder Bed Extensions

To facilitate easy handling of the work for flat sewing, a **wooden extension** (see photo 19) is available at an extra charge for all PFAFF 28 machines. The dimensions of the cut-out in the polished metal plate are adapted to the different sub-class machines.

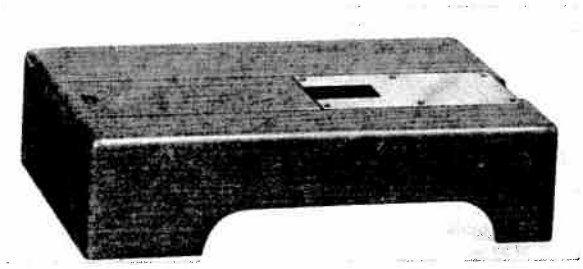

Photo 19

The wooden extension is pushed over the cylinder bed from left to right so that the edges of the cut-out in the plate fit snugly around the needle plate.

Upon special request and in lieu of the wooden extension, we furnish an **iron screw-on plate,** size $8\,^{17}/_{64}" \times 8\,^{17}/_{64}"$, which is screwed directly onto the cylinder bed of the machine (see photo 20).

Photo 20

19. Probable Causes of Sewing Troubles

Skipping of Stitches:

1. Needle inserted incorrectly, grooves facing the wrong way.
2. Other than proper needle system used.
3. Needle bent.
4. Needle threaded incorrectly.
5. Needle inadequate for the thread used.

Breaking of Thread:

1. For any of the causes mentioned above.
2. Tensions too tight.
3. Inferior-quality or knotty thread used.
4. Shuttle race insufficiently oiled.
5. Thread jamming in shuttle race.
6. Edges of needle hole damaged by the needle.

Binding of Machine:

1. Driving belt too long.
2. Driving belt shortened too much.
3. Thread jamming in shuttle race.
4. Mechanism clogged.
5. Machine not oiled after having been cleaned with kerosene.

Needle Breakage:

1. Needle bent.
2. Needle too thin or thread too thick.
3. Needle thread tension too tight.
4. Pushing or pulling of the work during the sewing.

Uneven Stitches:

1. Tensions improperly regulated.
2. Thread used too thick, knotty or stiff.
3. Bobbin thread improperly wound.
4. Shuttle race insufficiently oiled.
5. Odd thread accumulated between tension discs.

SEWING MACHINE FACTORY
G. M. PFAFF AG, KAISERSLAUTERN

Founded 1862

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