

**PFAFF**®

**3337**

STOCK NO.	T049901-110		LOCATION	2013
DESC.	3337 SERV MANUAL			
UNIT	EA	QUANTITY	1	DATE
CUST. NO.	127	CONTROL NO.	1518892	12/13/79
CUST. ORDER NO.	1679	PICKED	ORDER	4
4	OF	12	BATCH	1

## Service Manual

PFAFF INDUSTRIEMASCHINEN GMBH KAISERSLAUTERN

from the library of: Superior Sewing Machine & Supply LLC

# **Service Manual for the Pfaff 3337**

## **and Illustrated Guide for Tape-Recorded Instructions**

### **Tools, gauges and sundry materials required for adjusting the Pfaff 3337:**

- 1 set of screwdrivers with blades from 2—10 mm wide
- 1 set of spanners with openings from 7—14 mm wide
- 1 set of hexagon socket screw keys ranging from 1.5 to 6 mm
- 1 Seeger circlip pliers
- 1 hammer
- 1 brass punch
- 1 metal rule, 0.3 mm thick
- 1 universal gauge, No. 91-129 604-91
- 1 needle rise gauge, 2.4 mm, Order No. 880 136/00
- 1 C-clamp, No. 880 137/00
- 1 wrapper with System 34 needles
- 1 strip of white paper, and  
sewing thread

**0. Preparations for adjustment**

- 0.1. Press the two push buttons on the belt guard and strip the latter.
- 0.2. Remove the V-belt from its pulley.
- 0.3. Disconnect both chains.
- 0.4. Unscrew both clamp feet.
- 0.5. Take the needle out of the needle bar.

**1. Removing the forked clutch lever (Fig. 1)**

- 1.1. Take the circlip pliers and remove circlip **1** from the arm shaft.
- 1.2. Loosen screw **2** of the fulcrum stud in the forked clutch lever, and push the fulcrum stud out.
- 1.3. Pull the V-belt pulley, together with the forked clutch lever and the two slide blocks, off the arm shaft.

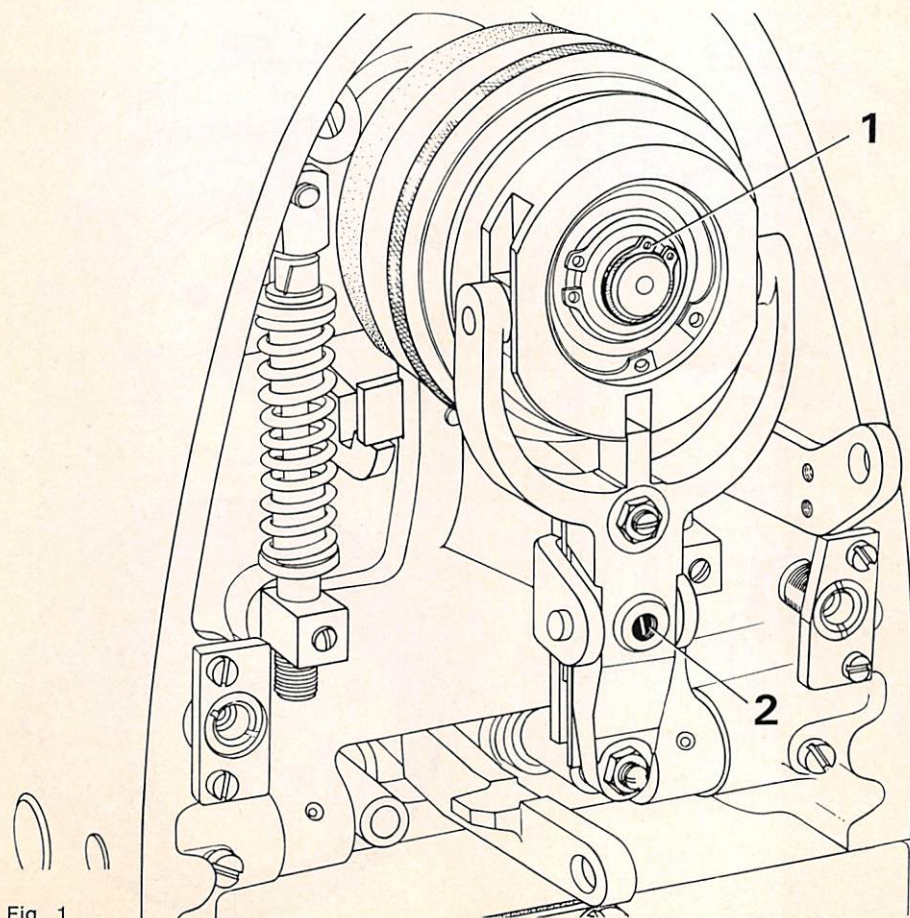


Fig. 1



**2. Adjusting the drive pulley on the arm shaft (Figs. 2 and 2a)**

- 2.1. Make sure the stop lug has snapped into the notch of the drive pulley and the arm shaft can no longer be turned. Take the three screws **3** out of the clutch disc and remove the latter.
- 2.2. Turn screw **4** in the drive pulley out a few turns (Fig. 2a), then hit it on the head to release the cotter underneath.
- 2.3. Reposition the drive pulley on the arm shaft so that its face side is flush with the annular groove on the shaft (see encircled view in Fig. 2a).
- 2.4. Hold the drive pulley in this position and tighten screw **4** securely.
- 2.5. Replace the clutch disc on the drive pulley so that the marks on both are in line, and secure it in position with screws **3** Fig. 2).

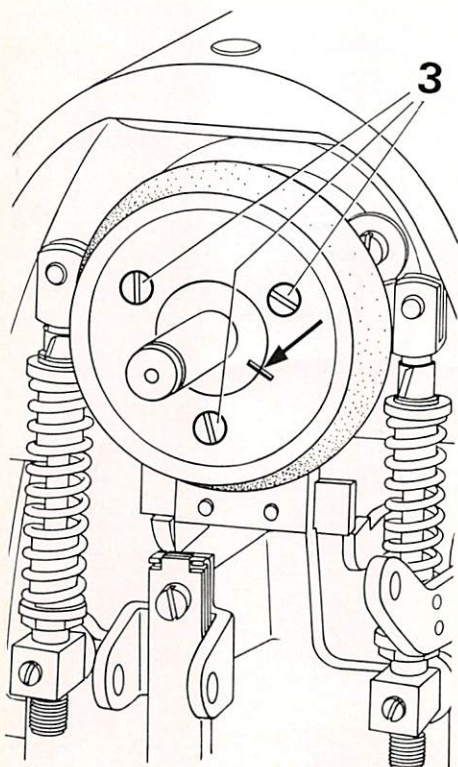


Fig. 2

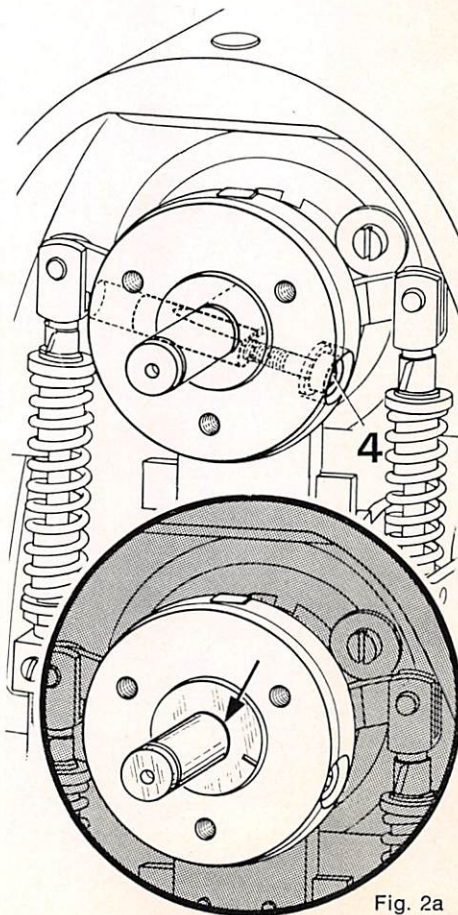


Fig. 2a



**3. Adjusting the starting latch (Fig. 3)**

- 3.1. Unscrew the cover which is located on the side of the arm.
- 3.2. Through the large access window, loosen both screws **5** in the bearing plate of the starting latch.
- 3.3. Turn eccentric stud **6** until the starting latch is at its left point of reversal.
- 3.4. Depress the starting lever by hand as far as it will go so that the starting latch is arrested by the locking lever, i.e. the latter is positioned in the notch of the latch. If it is not because the tripping lever is positioned on the stop tripping segment of the feed cam, turn the V-belt pulley in sewing direction at least three turns, then operate the starting lever again.
- 3.5. Turn eccentric stud **6** until there is a clearance of 1 mm (0.04") between starting latch and locking lever (see encircled view in Fig. 3).
- 3.6. In this position, securely tighten both screws **5** in the bearing plate.

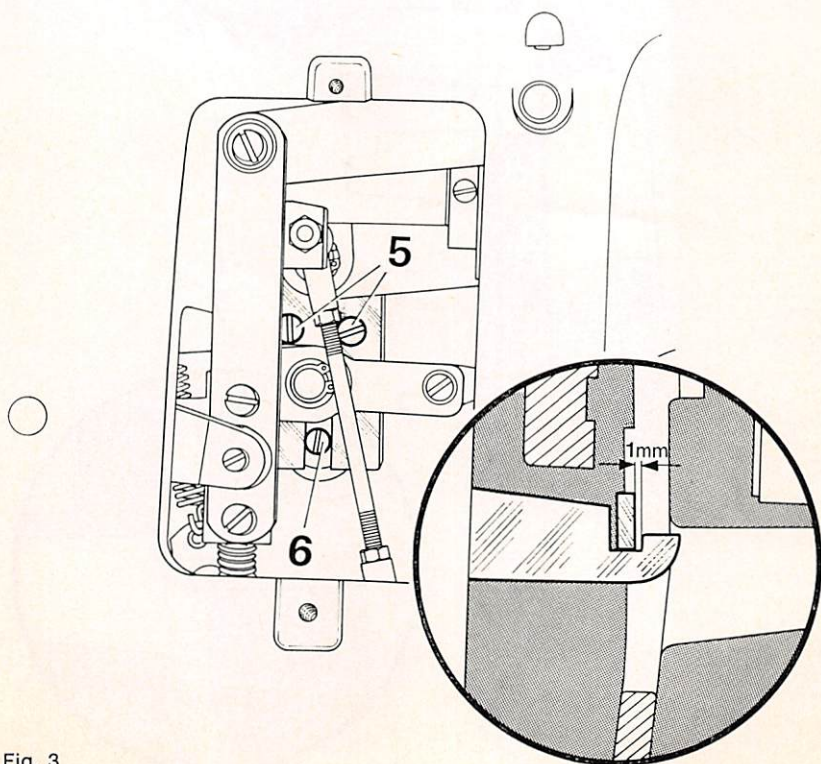


Fig. 3

4. **Vertical adjustment of starting latch (Fig. 4)**
- 4.1. Through the access window, loosen screw 7 at the right end of the starting latch.
  - 4.2. Depress the starting lever as far as it will go so that the starting latch is locked by the locking lever.
  - 4.3. Push the starting latch upwards until the locking lever contacts the bottom of the cutout in the starting latch. In this position, tighten screw 7 of the starting latch (see encircled view in Fig. 4).
  - 4.4. Push the starting latch down until it clears the locking lever. Then turn the clutch disc in sewing direction until the stop lug snaps into the notch of the drive pulley.

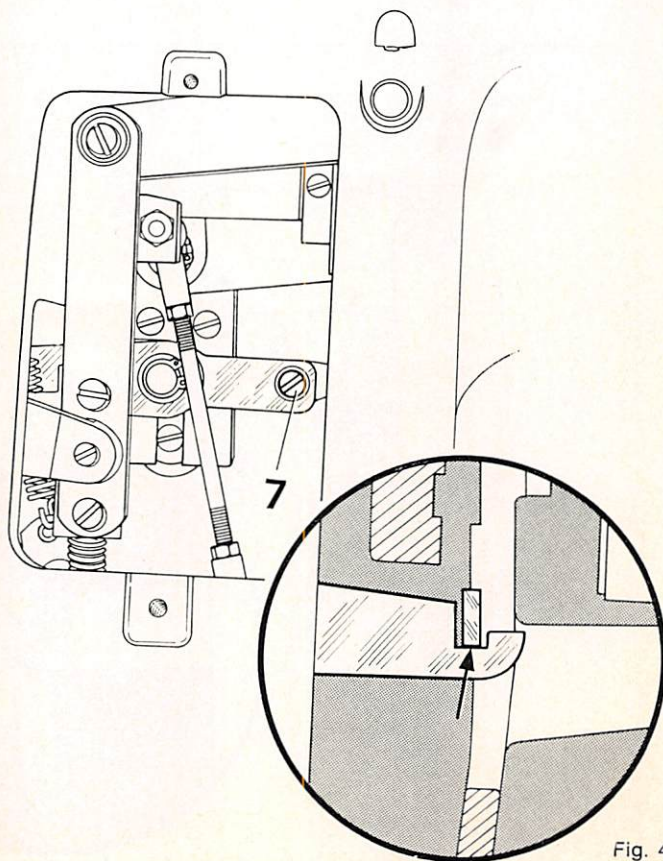


Fig. 4



**5. Adjusting the forked clutch lever (Fig. 5)**

- 5.1. Loosen the jam nuts on screws **8** and **9** and turn both screws out a few turns.
  - 5.2. Push the V-belt pulley, together with the forked clutch lever, onto the arm shaft.
  - 5.3. Push the fulcrum stud through the holes in the angular bracket and the forked clutch lever, and securely tighten screw **2** on the forked clutch lever.
  - 5.4. Replace circlip **1** in the groove of the arm shaft.
  - 5.5. Check to make sure the stop lug is still positioned in the notch of the drive pulley so that the arm shaft cannot be turned.
  - 5.6. While lightly pushing against the V-belt pulley, turn screw **8** in until there is a clearance of 2 mm (0.08") between the collar of the V-belt pulley and the circlip on the arm shaft (see upper encircled view in Fig. 5).
  - 5.7. In this position, tighten the jam nut on screw **8**.
  - 5.8. Operate the starting lever to cause the starting latch to be retained by the locking lever.
  - 5.9. Turn screw **9** in until the clearance between the leaf spring and the bracket underneath is 1 mm (0.04"), as illustrated in the lower encircled view in Fig. 5.
  - 5.10. In this position, tighten the jam nut on screw **9**.
- Please note: Screw **8** is adjusted with the clutch disengaged, while screw **9** is adjusted with the clutch engaged.

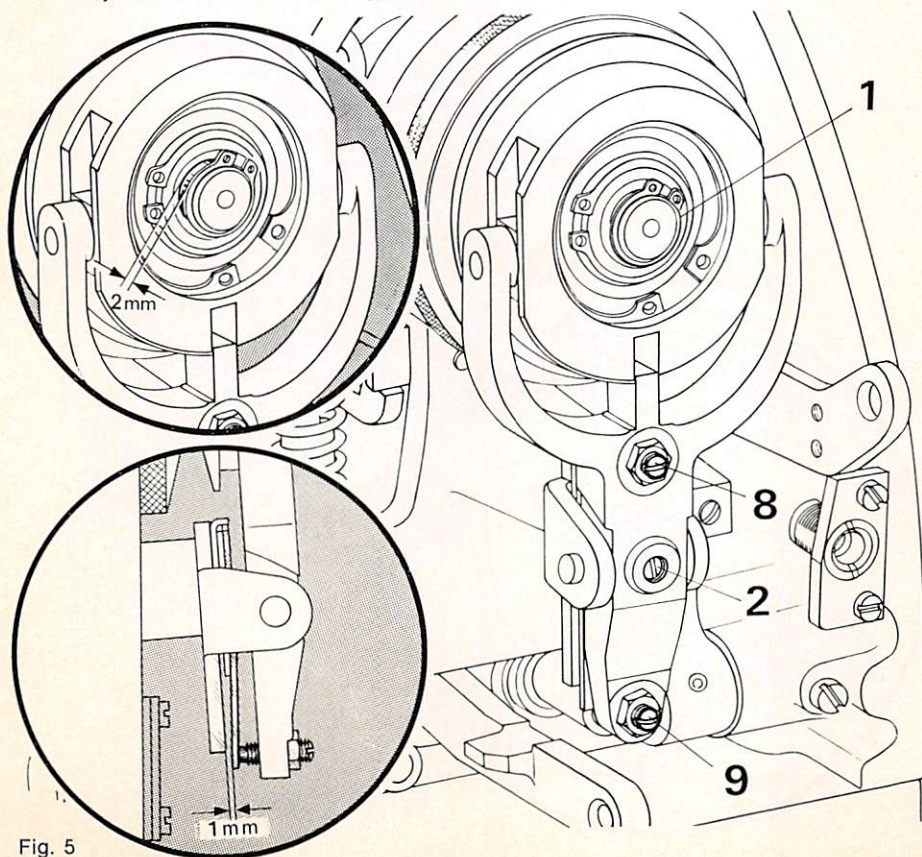


Fig. 5

**6. Adjusting the clamp lifting lever (Fig. 6)**

- 6.1. Through the access window, disconnect the knife actuating rod at its upper ball joint.
- 6.2. Loosen the jam nut of screw **10** on the clamp lifting lever, and turn the screw out a few turns.
- 6.3. Turn the screw in again until there is a clearance of 122 mm (4.8") between the thrust plate in the machine arm and the cylinder bed top cover (see encircled view in Fig. 6).
- 6.4. In this position, tighten the jam nut of screw **10** on the clamp lifting lever.
- 6.5. Connect the knife actuating rod again.

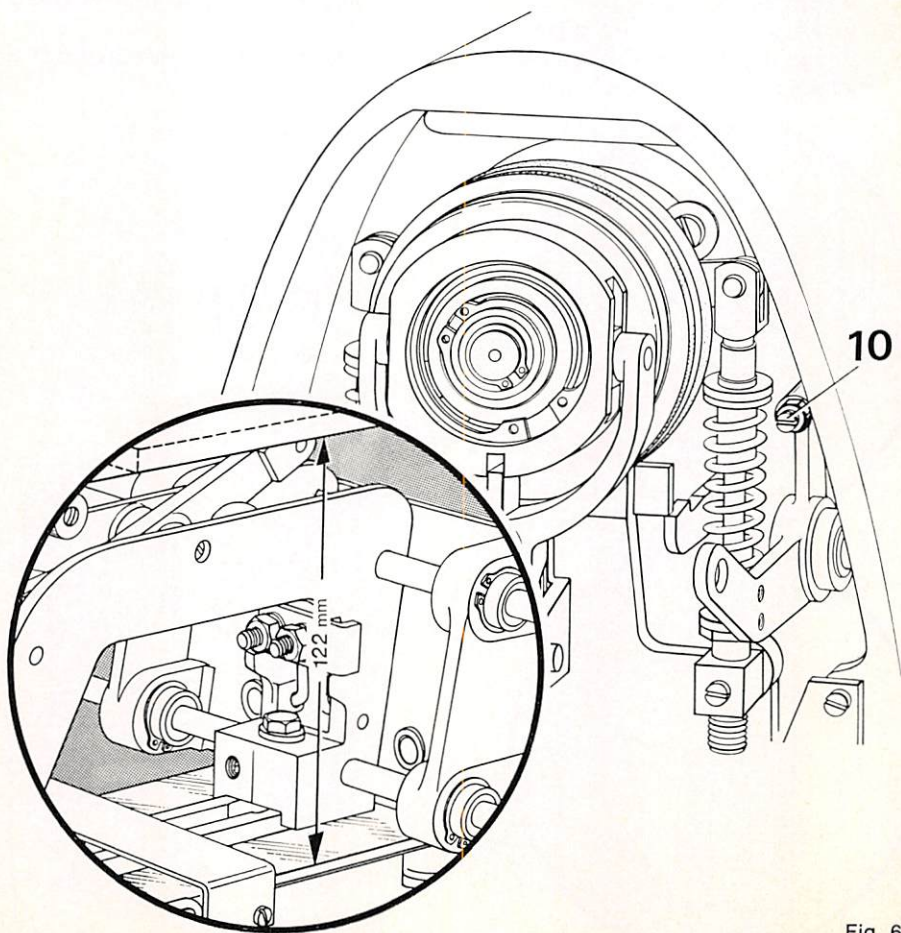


Fig. 6



7. **Adjusting the knife actuating rod (Fig. 7)**

- 7.1. Through the access window, loosen both lock nuts of connecting rod 11.  
Note: The top nut has left-hand thread.
- 7.2. Turn connecting rod 11 until the guide stud is positioned at the lowest point in the slot of the knife actuating segment without exerting any pressure (see en-circled view of Fig. 7).
- 7.3. In this position, tighten both lock nuts of connecting rod 11.

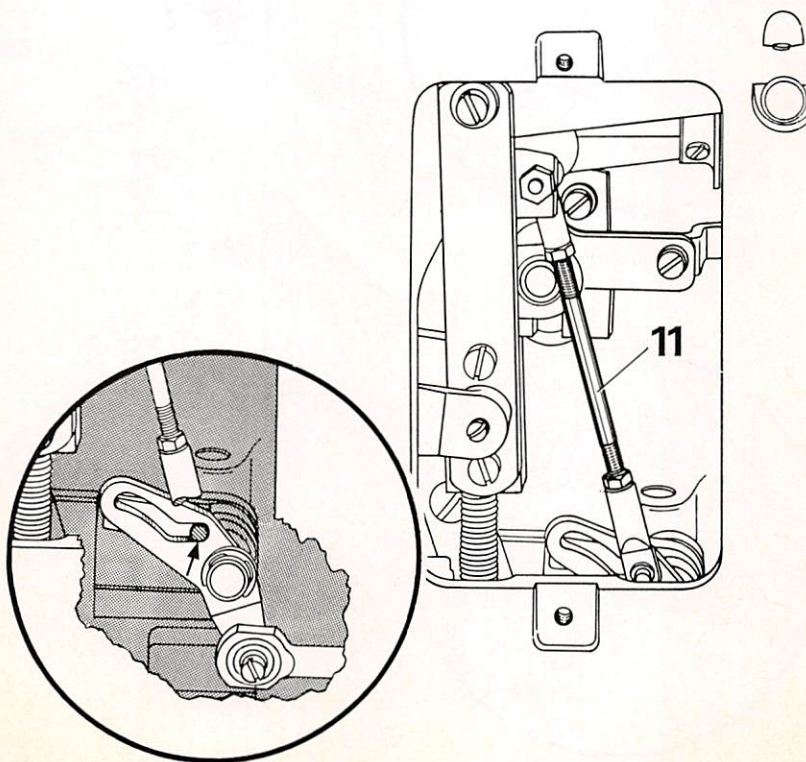


Fig. 7

**8. Adjusting the locking lever (Fig. 8)**

- 8.1. Through the access window, loosen both screws **12** of the locking lever just sufficiently to allow the latter to be moved against resistance.
- 8.2. Adjust the locking lever so that it clears the locking latch at a distance of 1 mm (0.04") when the clamp lifting lever is operated (see upper encircled view).
- 8.3. Operate the starting lever, then adjust the locking lever vertically so that there is a clearance of 0.1 mm (0.004") between locking lever and locking latch (see lower encircled view).
- 8.4. In this position, tighten both screws **12** of the locking lever.

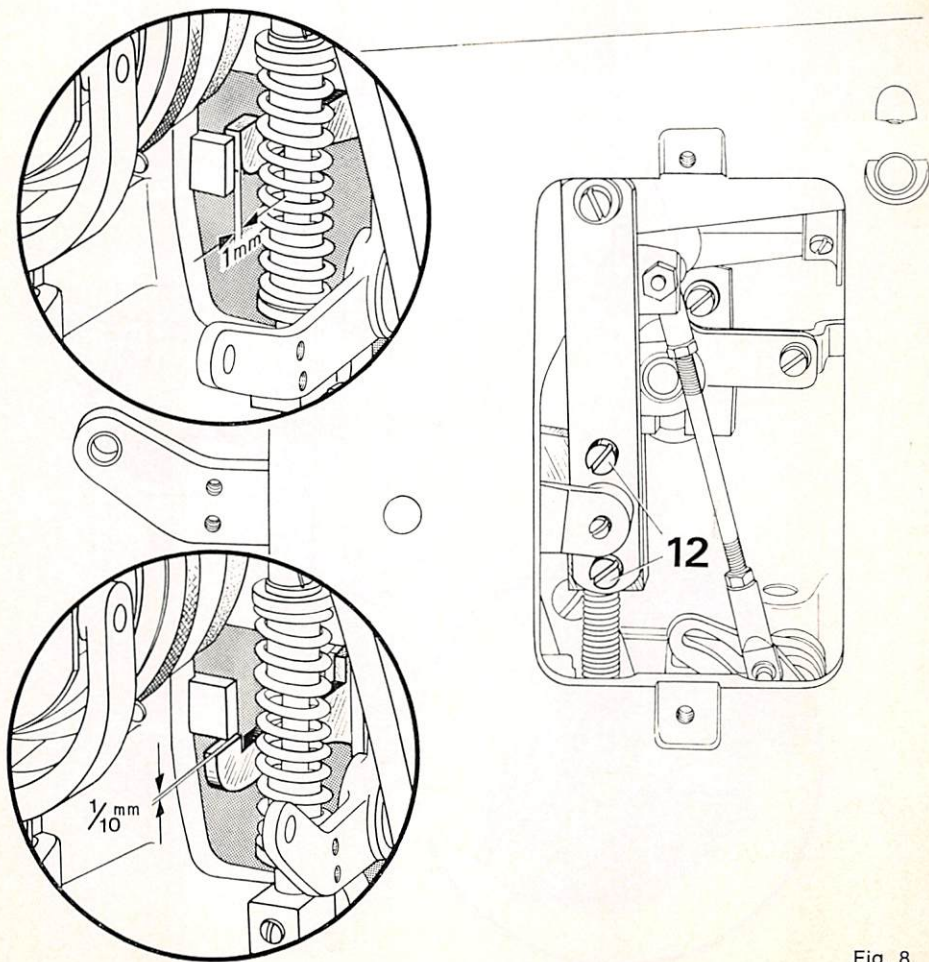


Fig. 8



9. **Adjusting the micro switches (Fig. 9)**  
(on machines equipped with electromagnetic or pneumatic starting mechanism)
- 9.1. Loosen both screws **13** of the starting mechanism inhibitor switch above the clamp lifting lever.
- 9.2. Adjust the switch so that it has just been closed when the clamp lifting lever is at rest.
- 9.3. In this position, tighten both screws **13** of the switch above the clamp lifting lever.
- 9.4. Loosen both screws **14** of the clamp lifter mechanism inhibitor switch above the the starting lever.
- 9.5. Adjust the switch so that it has just been closed when starting lever is at rest.
- 9.6. In this position, tighten both screws **14** of the switch above the starting lever.

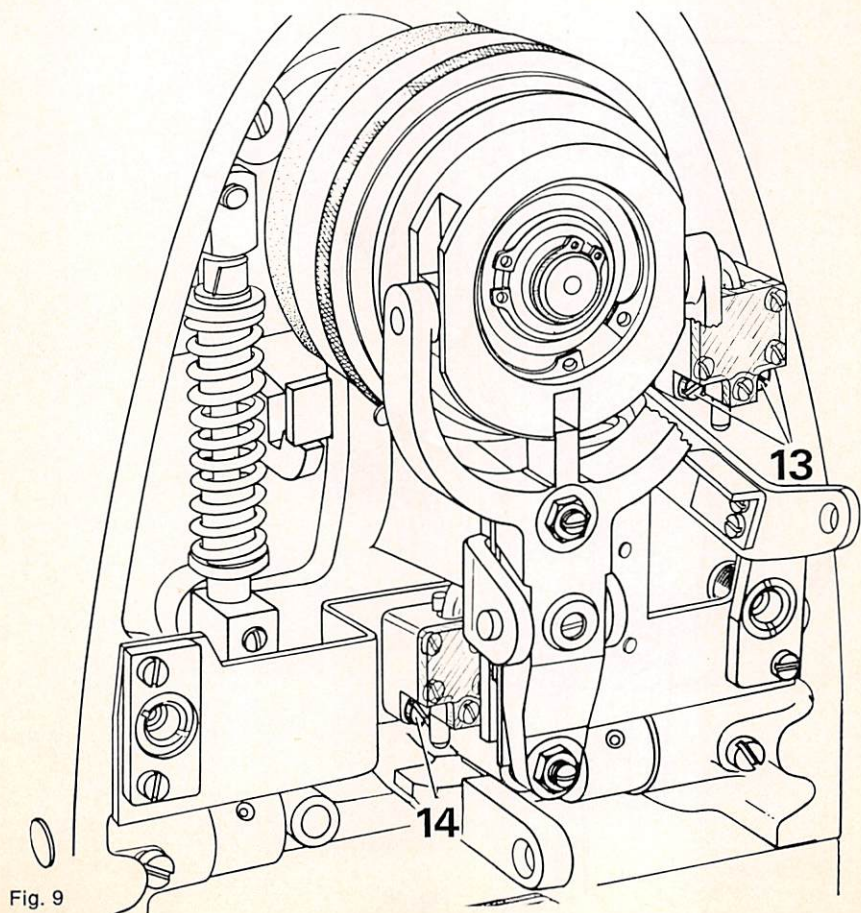


Fig. 9

**10. Centering the needle in the needle hole (Fig. 10)**

- 10.1. Remove the face cover, then loosen both screws **15** of the needle bar frame.
- 10.2. Operate the starting lever, then rotate the balance wheel and adjust the position of the needle bar frame until the needle is centered in the needle hole exactly.
- 10.3. In this position, evenly tighten both screws **15** of the needle bar frame to prevent binding of the needle bar.

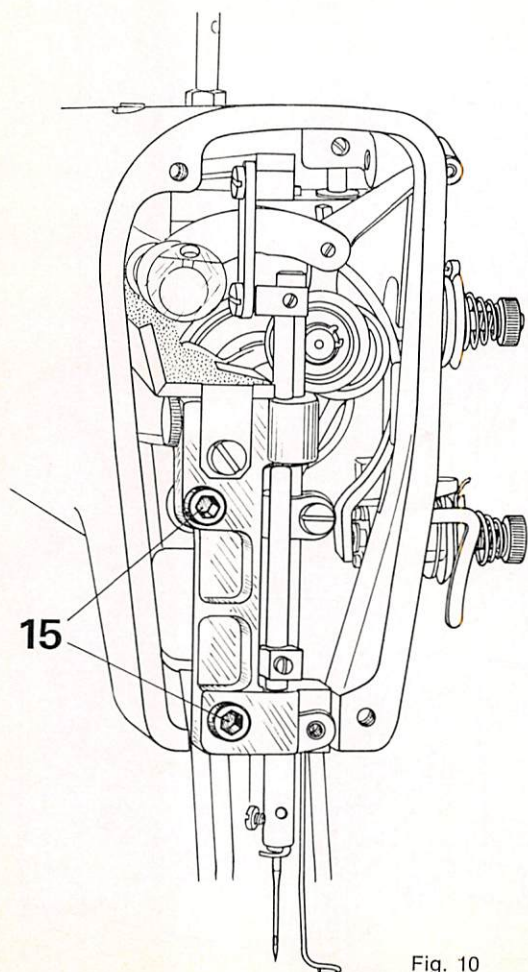


Fig. 10



**11. Dismantling certain parts prior to the following adjustments (Fig. 11)**

- 11.1. Bring the needle bar to its highest point.
- 11.2. Take out both screws **16** of the cover strip above the front slide block and remove the cover strip.
- 11.3. Loosen screw **17** on the lower transverse motion shaft in the arch clamp and pull the shaft out.
- 11.4. Loosen screw **18** of the upper transverse motion shaft in the arch clamp (see arrow) and pull the shaft out.
- 11.5. Remove arch clamp, feed bar and feed plate.
- 11.6. Remove the slide block from the front stud, taking care that you do not lose any of the spacing washers which are possibly placed on it.
- 11.7. Take out the four screws **19** of the needle plate and remove the latter.

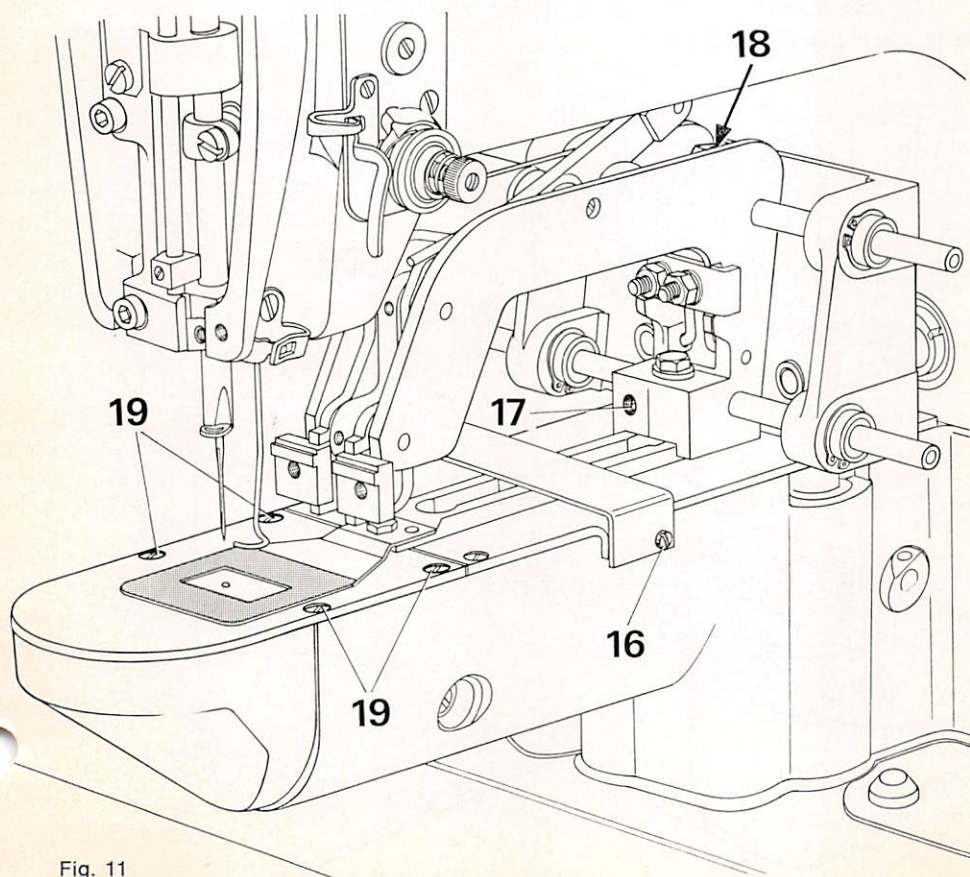


Fig. 11

**12. Dismantling certain parts prior to the following adjustments (Fig. 12)**

- 12.1. Take out the two screws **20** which are located in the trunnion block.
- 12.2. Pull the trunnion block forward as far as it will go, then remove it by pulling it out of the machine sideways.
- 12.3. Remove slide block guide together with the slide block which are exposed after stripping the trunnion block. Again take care that you do not lose any spacing washers.
- 12.4. Take out the four screws **21** of the cylinder bed top cover and strip the latter.
- 12.5. Unscrew the leaf spring of the cylinder bed cap.
- 12.6. Unscrew the cylinder bed cap.
- 12.7. Take off the shuttle race cover.
- 12.8. Take the shuttle and the bobbin case out of the shuttle race.
- 12.9. Unscrew the roller lever located under the bedplate on the left.
- 12.10. Take out the hexagon screw in the middle of the feed cam.
- 12.11. Turn the eccentric bushing in the feed cam slightly toward the left, i. e. counter-clockwise, and pull it out.
- 12.12. Then strip the feed cam.

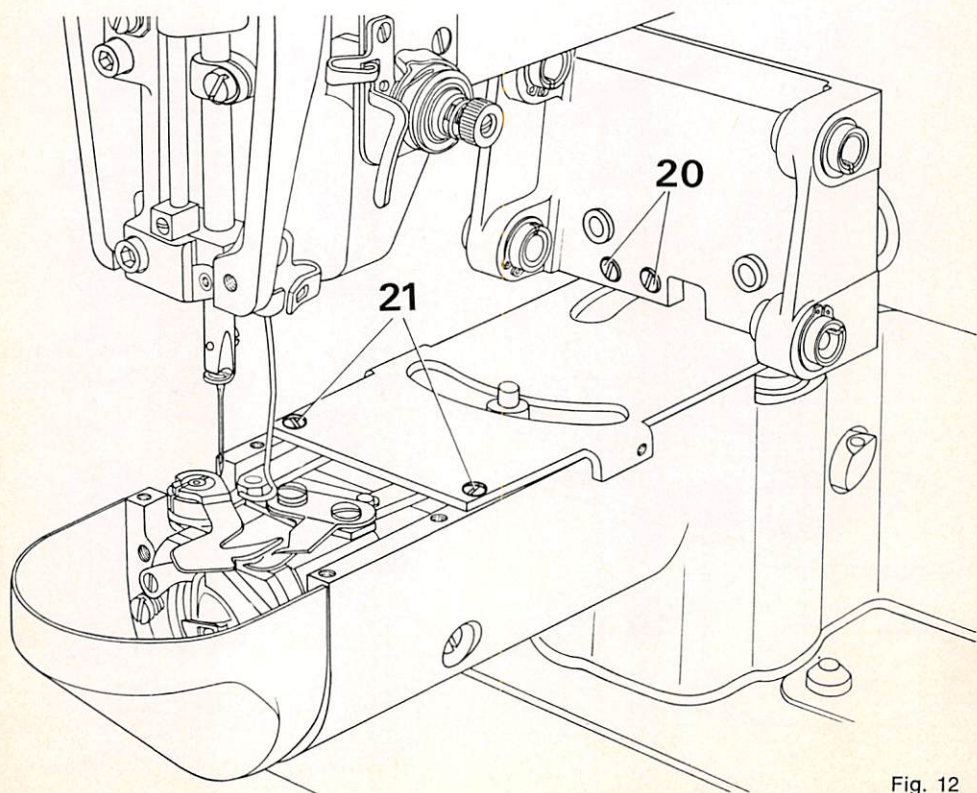


Fig. 12



**13. Setting the shuttle to the needle (Fig. 13)**

- 13.1. Loosen clamp screw **22** of the shuttle driver and pull the latter off its shaft.
- 13.2. Turn screw **23** on the right-hand side of the cylinder bed out a few turns, then hit it on the head to release the cotter underneath.
- 13.3. Replace the shuttle in its race.
- 13.4. Operate the starting lever and turn the V-belt pulley until the point of the shuttle is exactly in the middle of the clearance cut of the needle.
- 13.5. In this position, move the shuttle driver shaft bearing together with the shuttle race lengthwise of the cylinder bed until there is a clearance of 0.1 mm (0.004") between the point of the shuttle and the needle (see encircled view of Fig. 13).
- 13.6. In this position, securely tighten screw **23** of the cotter which secures the shuttle driver shaft bearing in position.
- 13.7. Then take the shuttle out of its race again.

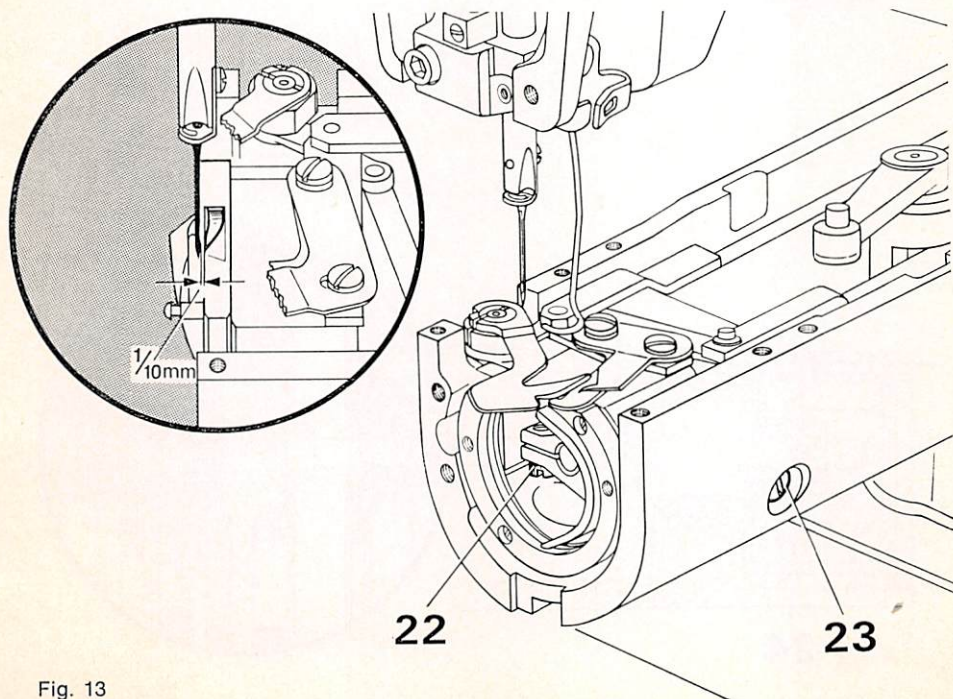


Fig. 13

**14. Setting the shuttle driver shaft longitudinally (Fig. 14)**

- 14.1. Loosen both screws **24** in the front collar of the shuttle driver shaft.
  - 14.2. Loosen both screws **25** in the rear collar of the shuttle driver shaft.
  - 14.3. Turn the V-belt pulley to bring the needle to its highest point.
  - 14.4. Pull the shuttle driver shaft forward as far as it will go.
  - 14.5. Turn the rear collar so that one of its screws points to the right — as seen from above — and the other faces upwards. Then push the collar up against the shuttle driver shaft bearing and tighten the accessible screw **25**.
  - 14.6. Push the shuttle driver shaft toward the back until there is a clearance of 1.3 mm (0.05") between the rear collar and the bearing.
  - 14.7. In this position, turn the front collar so that one of its screws **24** faces downwards and the other to the upper left, and push it up against the shuttle driver shaft bearing. Tighten the lower screw.
  - 14.8. Loosen screw **25** in the rear collar tightened previously, and press this collar up against the shuttle driver shaft bearing, while lightly pushing against the front end of the shaft. In this way, a clearance of 1.3 mm (0.05") is provided between the wall of the arm standard and the spur gear on the shuttle driver shaft (see encircled view of Fig. 14).
  - 14.9. In this position, securely tighten both screws **25** on the rear collar.
  - 14.10. Then securely tighten the second screw **24** on the front collar.
- Please note: The shuttle driver shaft should turn lightly, however without having any end play.

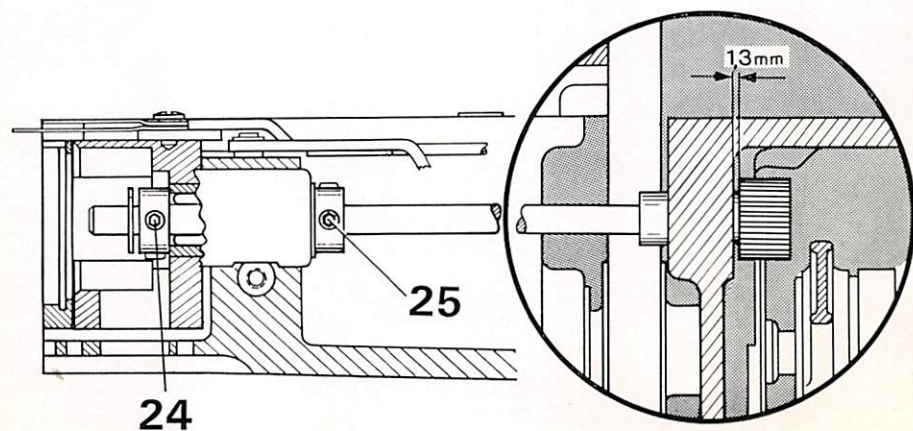


Fig. 14



**15. Adjusting the shuttle driver (Fig. 15)**

- 15.1. Prize the circlip on the shuttle driver shaft forward.
- 15.2. Bring the needle bar to its lowest point.
- 15.3. Place the shuttle driver on its shaft and push it up against the circlip.
- 15.4. Tap both parts — the shuttle driver and the circlip — back until, when you turn the shuttle driver, its finger with the needle deflecting surface passes as close to the needle as possible, without deflecting it.
- 15.5. In this position, lightly tighten the clamp screw of the shuttle driver.

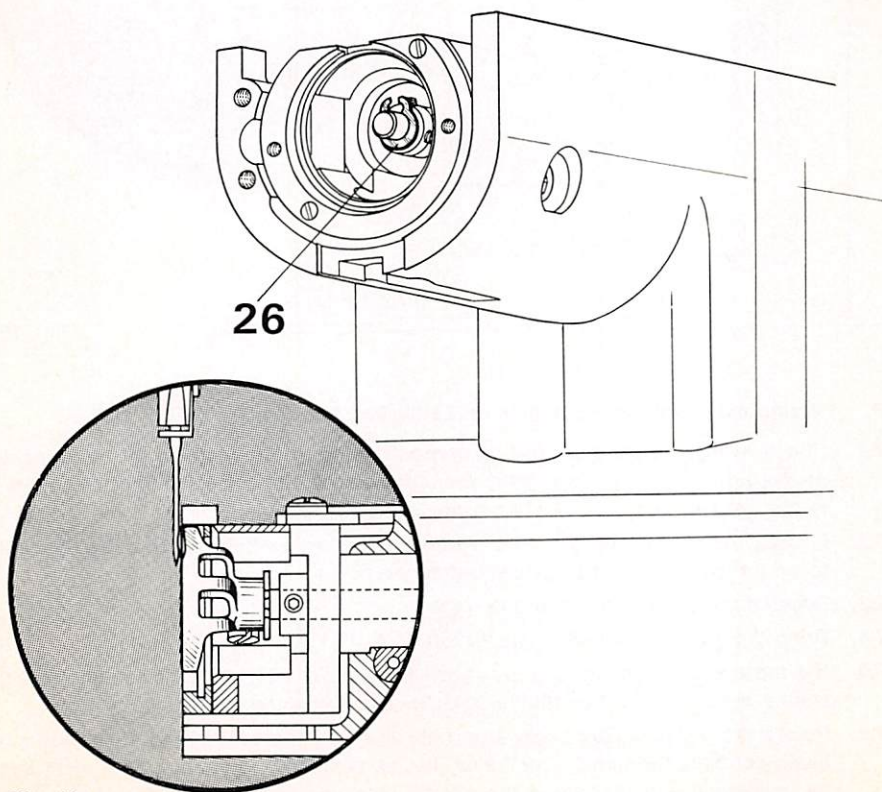


Fig. 15

**16. Adjusting the radial play of the shuttle driver (Fig. 16)**

- 16.1. Unscrew both nuts of the bobbin winder on the back of the machine, and strip the bobbin winder.
- 16.2. Take out the eight screws of the bearing plate underneath and remove the plate.
- 16.3. Loosen the three screws **27** in the eccentric bearing bushing exposed now.
- 16.4. Turn the eccentric stud with the aid of a screwdriver until the shuttle driver no longer has any radial play, but light running of the machine is still ensured.
- 16.5. Evenly tighten all three screws **27** of the eccentric bearing bushing.

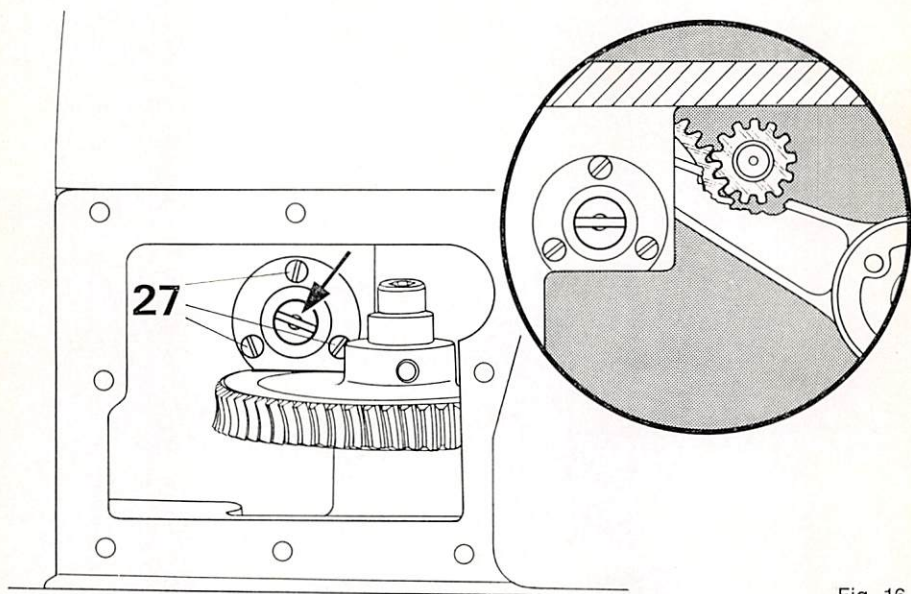


Fig. 16

**17. Timing the shuttle driver motion and adjusting the needle rise (Fig. 17)**

- 17.1. Check to make sure that the first screw (in sewing direction) of all parts located on the arm shaft, e.g. spur gear, eccentric and worm, is positioned on the flat or in the groove, and that all screws are securely tightened.
- 17.2. Loosen the clamp screw of the shuttle driver just sufficiently to allow the latter to be turned on its shaft against resistance.
- 17.3. Replace the shuttle in the shuttle race.
- 17.4. Bring the needle bar to its lowest point.
- 17.5. Set the machine for a needle bar rise of 2.4 mm (0.09"). Turn the shuttle and the shuttle driver so that the shuttle point is exactly behind the needle.
- 17.6. Rotate the V-belt pulley backwards until the C-clamp screwed to the needle bar again contacts the needle bar frame. In this position, the shuttle point must again be positioned exactly behind the needle (see encircled view in Fig. 17).



- 17.7. If the point of the shuttle is not exactly behind the needle, remove the C-clamp and loosen the three screws **28** of the belt sprocket on the arm shaft (which are accessible through the access window) just sufficiently to allow the belt sprocket to be turned against resistance.
- 17.8. Turn the belt sprocket on the arm shaft just slightly and repeat this adjustment until the shuttle point is exactly behind the needle when the C-clamp on the needle bar contacts the needle bar frame after turning the V-belt pulley forwards, then backwards.
- 17.9. In this position, securely tighten screw **28** on the belt sprocket, making sure that the latter contacts its bearing on the right.
- 17.10. Remove the C-clamp from the needle bar, take the shuttle out of its race, and tighten the clamp screw of the shuttle driver securely.
- 17.11. Loosen both screws of the shuttle race.
- 17.12. Replace the shuttle in its race and adjust the latter so that there is the same amount of play between shuttle and shuttle driver in both ultimate positions.
- 17.13. Securely tighten both screws of the shuttle race.

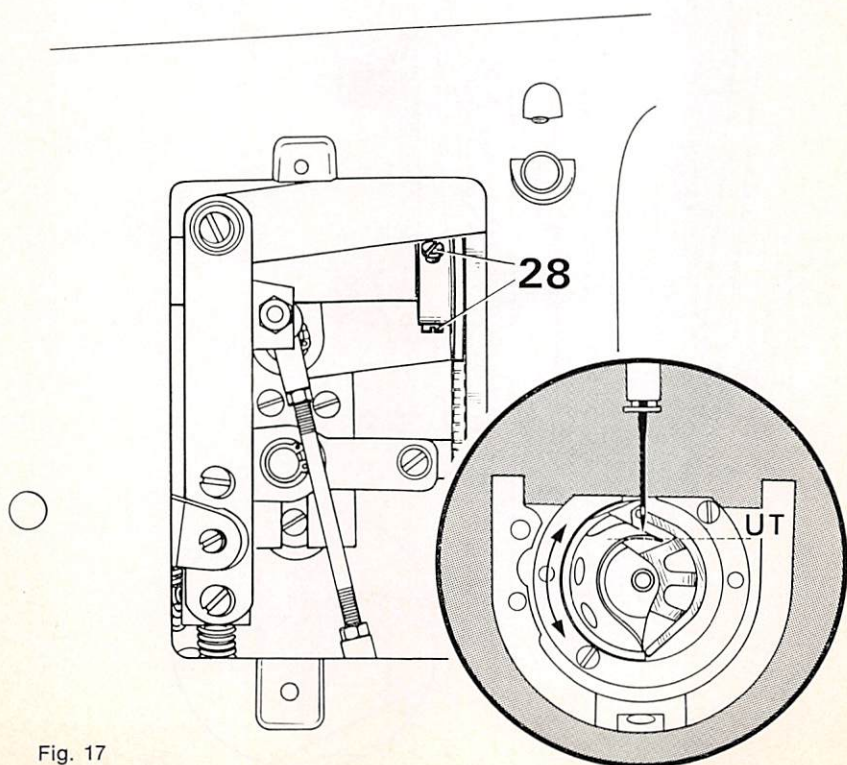


Fig. 17

**18. Setting the needle bar at the correct height (Fig. 18)**

- 18.1. Turn the V-belt pulley in sewing direction until the shuttle point is exactly opposite the center line of the needle.
- 18.2. Loosen clamp screw **29** on the needle bar connecting stud.
- 18.3. Move the needle bar up or down until there is a clearance of 1.5 mm (0.06") between the lower edge of the shuttle point and the top of the needle eye (see encircled view of Fig. 18).
- 18.4. In this position, securely tighten clamp screw **29** on the needle bar connecting stud, making sure the thread guide screw on the needle bar points toward the rear.
- 18.5. Screw on the shuttle race cover, making sure it does not lose its resilience.
- 18.6. Push the starting latch out of the locking lever and turn the clutch disc in sewing direction until the stop lug has snapped into the notch of the drive pulley.

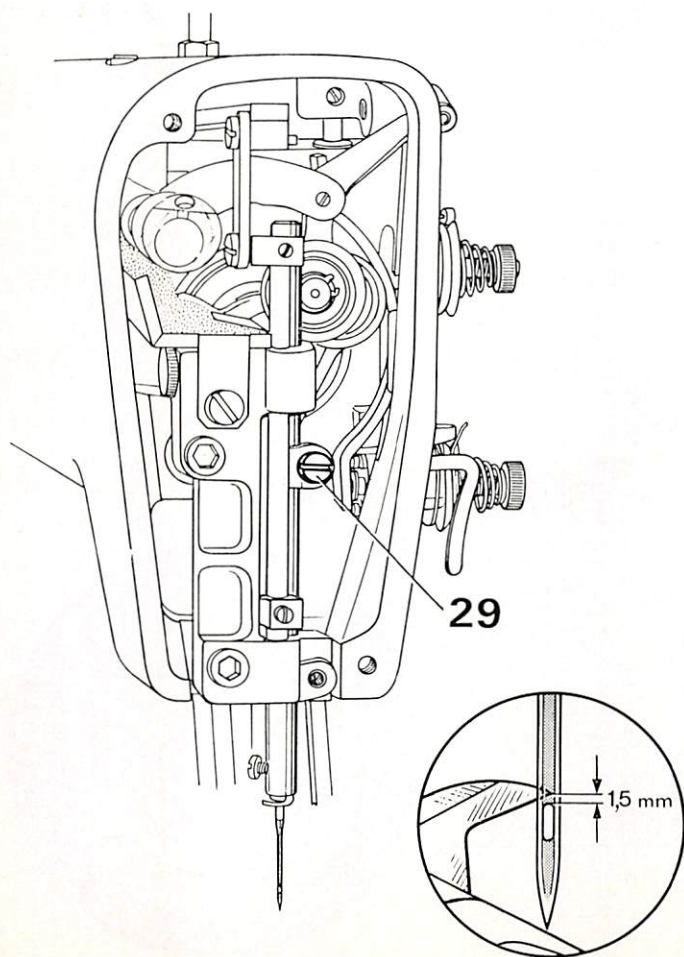


Fig. 18



- 19. Adjusting the bobbin thread puller and the movable knife (Fig. 19)**
- 19.1. Loosen clamp screw **31** of the needle thread catcher, swing the latter toward the left, and lightly tighten the clamp screw again.
  - 19.2. Loosen screw **30** just sufficiently to allow the knife and the bobbin thread puller to be moved against resistance.
  - 19.3. Operate the clamp lifting lever to bring knife and bobbin thread puller to their forward point of reversal. In this position, block the clamp lifting lever.
  - 19.4. Adjust the bobbin thread puller and the knife so that there is a clearance of 53 mm (2.09") between the left edge of the right screwhole on the needle plate and the tip of the bobbin thread puller. In addition, there should be a clearance of 38 mm (1.5") between the left edge of this hole and the cutting edge of the knife (see encircled view of Fig. 19).
  - 19.5. In this position, securely tighten screw **30** of the knife and the bobbin thread puller. Make sure as you tighten the screw that the bobbin thread puller is positioned as close to the shuttle race as possible vertically, without actually contacting it.

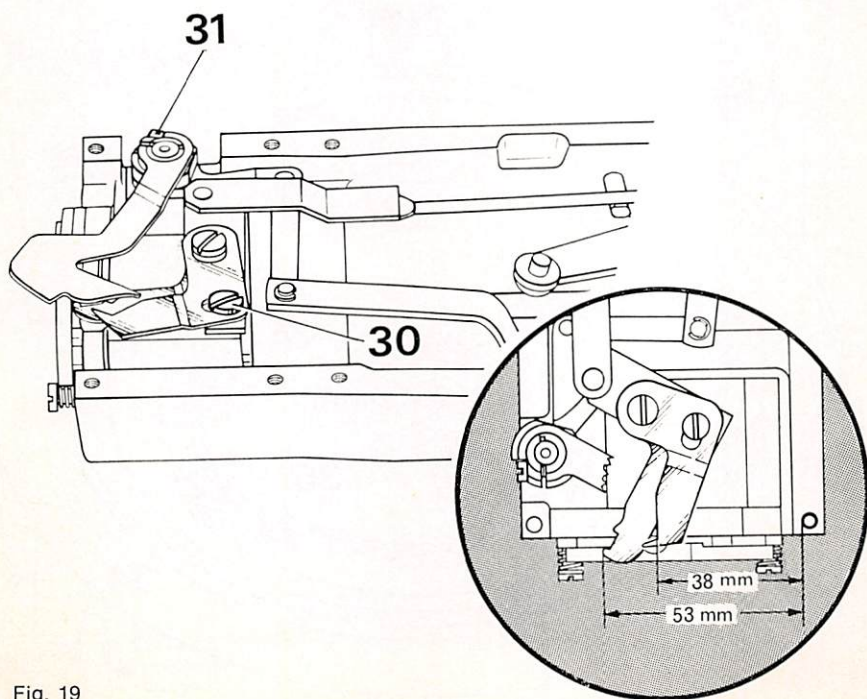


Fig. 19

**20. Mounting the feed cam (Fig. 20)**

- 20.1. Loosen screws **32**, **33**, **34**, **35** and **36** and the three allen screws **37** of the feed cam. Set all these screws in the middle of their slots and tighten them again.
- 20.2. Turn the eccentric bushing of the feed cam so that its lobe points upwards, i. e. toward the tripping segment on the rim of the cam.
- 20.3. Mount the feed cam so that the cutout in its rim is on the left and the roller of the right-hand roller lever is positioned in the channel on the upper side of the cam.
- 20.4. Insert the pin of the cap washer into the hole of the eccentric bushing and turn in the hexagon screw by hand as far as it will go.
- 20.5. Turn the eccentric bushing clockwise until there is no backlash between both spur gears, but the machine still turns easily.
- 20.6. In this position, securely tighten the hexagon screw of the feed cam.
- 20.7. Mount the roller lever on the left-hand feed motion segment, and adjust the latter so that the roller is positioned in the channel of the cam.
- 20.8. Securely tighten the two screws of the roller lever.

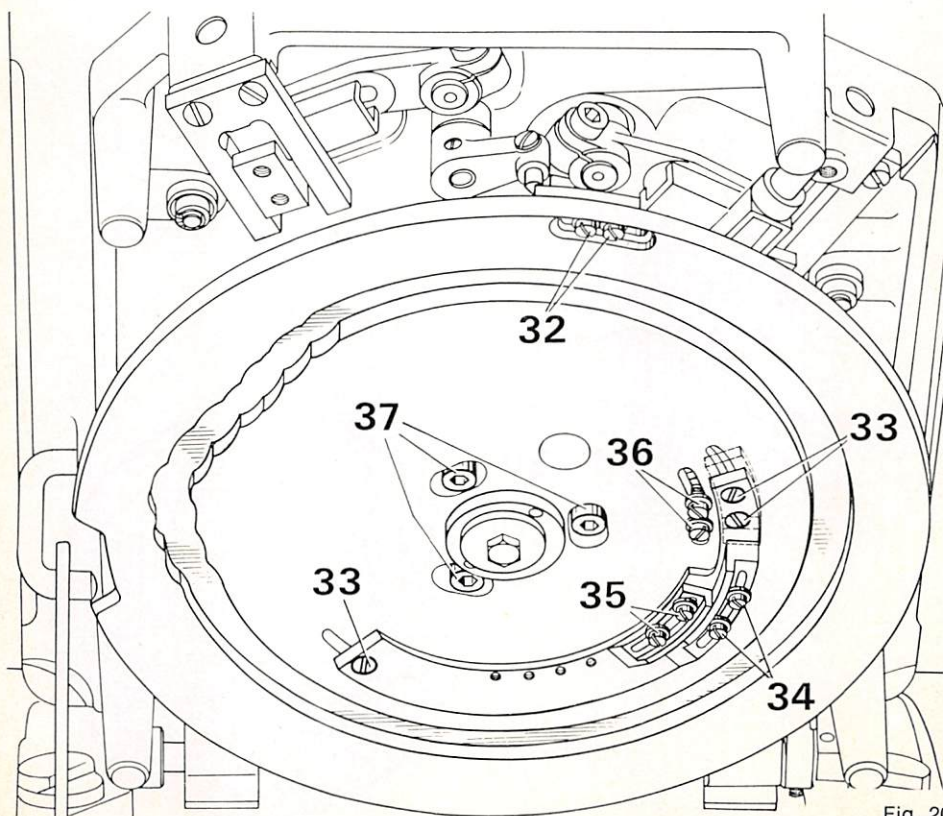


Fig. 20



**21. Timing the feed motion (Fig. 21)**

- 21.1. Operate the starting lever and turn the V-belt pulley while watching the needle and the feed motion levers in the cylinder bed. Each lever should make half its motion before, and the second half after, the needle bar has reached its highest point. (Only one lever moves at any given time).
- 21.2. If adjustment is required, loosen the three screws **37** in the feed cam and turn the cam on its shaft accordingly.
- 21.3. Securely tighten all three screws **37** of the feed cam.

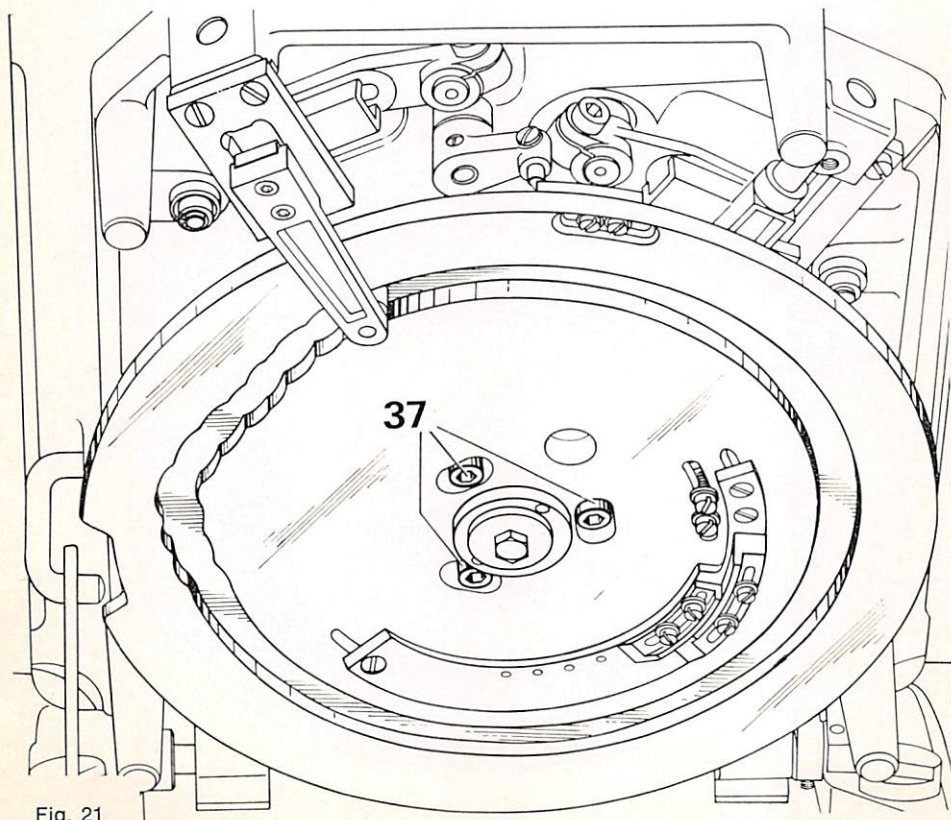
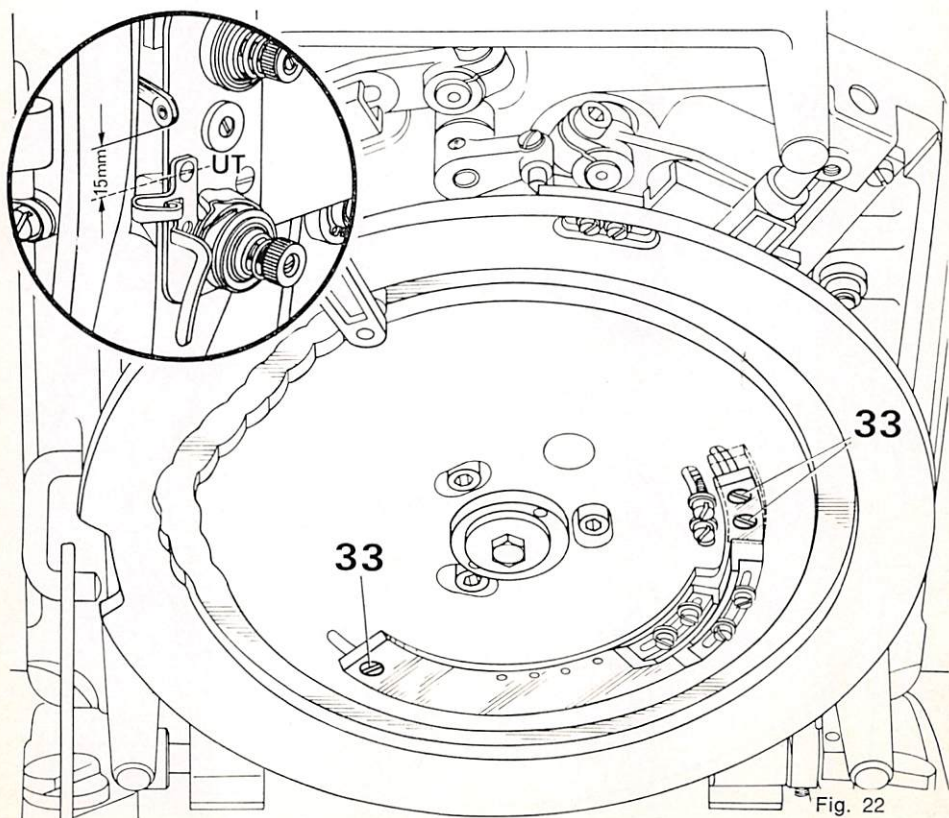


Fig. 21

## 22. Adjusting the stop tripping segment (Fig. 22)

- 22.1. Turn the V-belt pulley in sewing direction until the machine has completed its sewing cycle and stopped. The take-up lever should now be positioned about 15 mm (0.6") above the bottom of its stroke.
- 22.2. If it is not, check to see whether the machine has stopped too early or too late.
- 22.3. Operate the starting lever and turn the V-belt pulley backwards about two turns.
- 22.4. Loosen the three screws **33** of the segment on the feed cam.
- 22.5. If the machine stops too late, set the segment earlier, if it stops too early, set it later. Then securely tighten the three screws **33**.
- 22.6. Check again to see if the machine stops with the take-up lever exactly 15 mm (0.6") above the bottom of its stroke. If it does not, repeat the foregoing adjustment until this condition is met.
- 22.7. Turn the clutch disc in sewing direction until the machine has completed its sewing cycle and stopped. The machine is now in its starting position.





**23. Adjusting the thread catcher crank (Fig. 23)**

- 23.1. Check to make sure the machine is in its starting position and the tripping stud of the needle thread catcher is at the highest point of its tripping segment. In this position, loosen both screws **38** of the two-part thread catcher actuating rod.
- 23.2. Set a clearance of 0.3 mm (0.01") between the cylinder bed wall and the thread catcher crank (see encircled view of Fig. 23).
- 23.3. In this position, securely tighten first the front, then the rear screw **38** of the actuating rod.

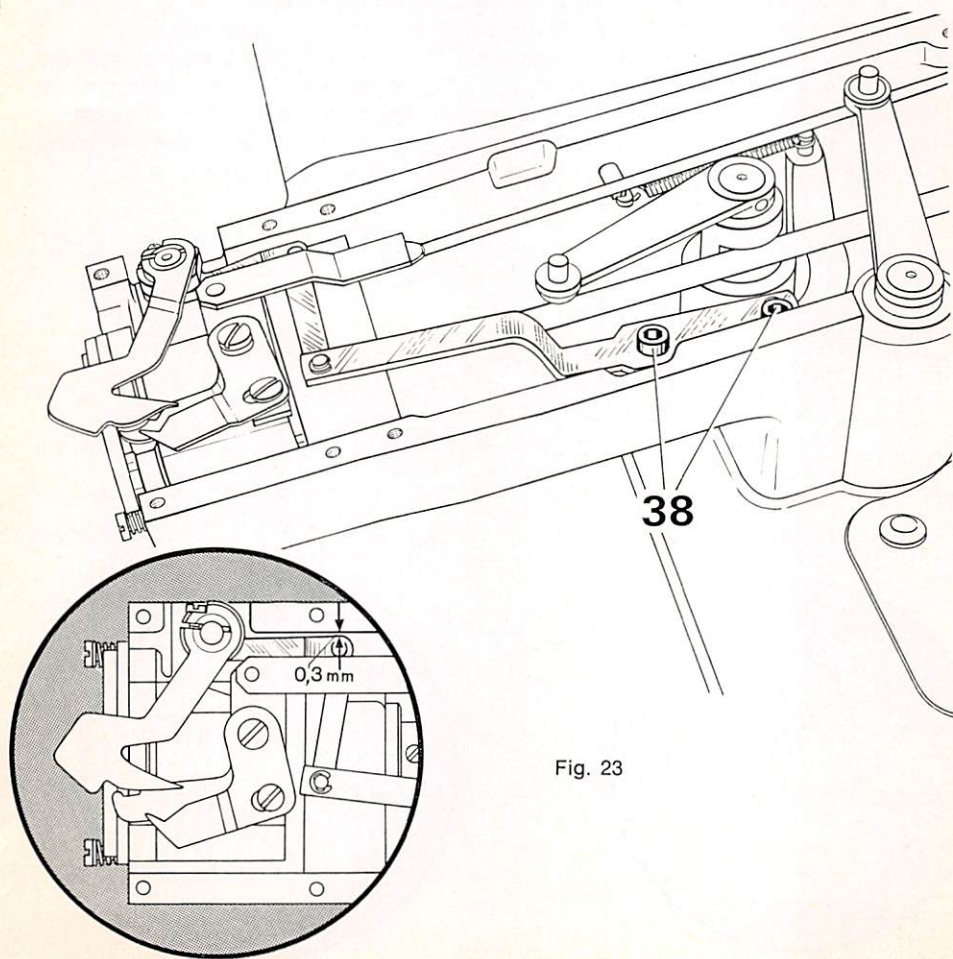


Fig. 23

**24. Adjusting the needle thread catcher (Fig. 24)**

- 24.1. Operate the starting lever and turn the V-belt pulley to bring the needle bar to its lowest point. During this phase of the machine cycle, the thread catcher tripping stud must have cleared the tripping segment.
- 24.2. Loosen clamp screw **31** of the needle thread catcher just sufficiently to allow the thread catcher to be turned on its shaft against resistance.
- 24.3. Press the thread catcher actuating rod in the cylinder bed toward the left as far as it will go, i.e. until the thread catcher crank contacts the wall of the cylinder bed, and hold it in this position.
- 24.4. Swing the needle thread catcher inwards until it contacts the needle just lightly and, in this position, securely tighten clamp screw **31** (see encircled view at left). When you release the actuating rod, the thread catcher should return to its starting position.
- 24.5. Adjust the thread catcher vertically so that it passes freely between knife and bobbin thread puller, i.e. without touching any of these parts.
- 24.6. Loosen the lock nut of screw **39** on the left side of the cylinder arm.
- 24.7. Turn screw **39** until there is a clearance of 4 mm (0.16") between the tip of the thread catcher and the needle when the thread catcher is in its starting position (see encircled view at right). In this position, tighten the lock nut on screw **39**.
- 24.8. Press the starting latch out of the cutout of the locking lever, and rotate the V-belt pulley backwards until the machine is in its starting position.

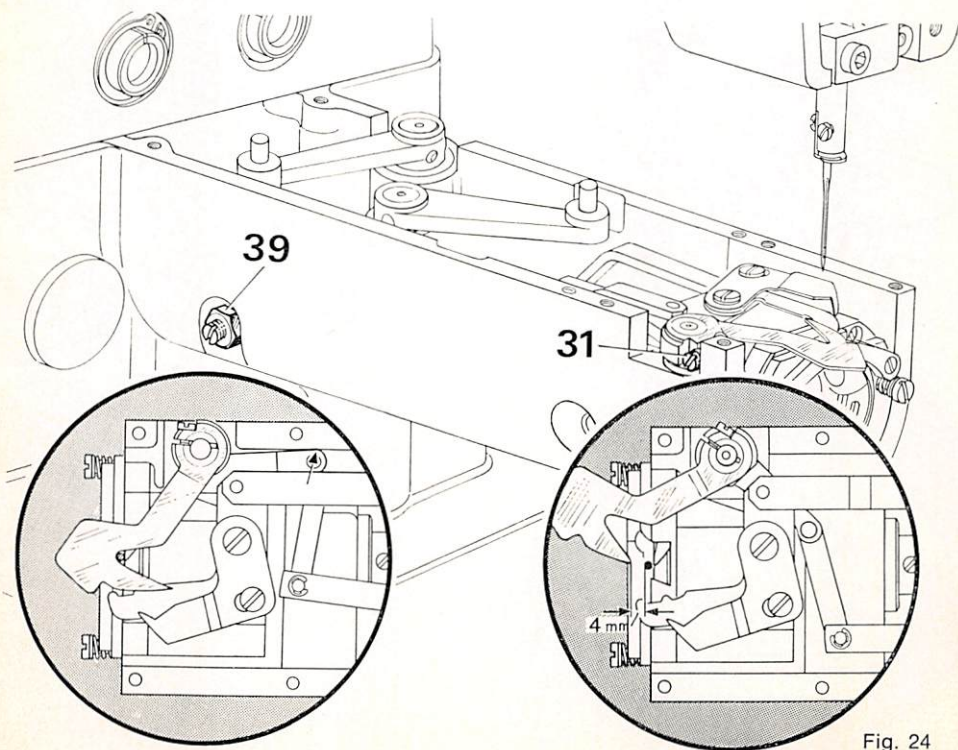


Fig. 24



**25. Timing the thread catcher motion (Fig. 25)**

- 25.1. Operate the starting lever and turn the V-belt pulley backwards one turn.
- 25.2. Then rotate the V-belt pulley in sewing direction until the point of the shuttle is exactly behind the rising needle.
- 25.3. In this position, loosen both screws **32** of the thread catcher tripping segment and move the segment all the way to the left.
- 25.4. Now move the tripping segment toward the right until the stud of the actuating lever contacts the inclined surface of the tripping segment.
- 25.5. In this position, tighten both screws **32** of the thread catcher tripping segment.
- 25.6. Turn the V-belt pulley backwards one half turn, then slowly forwards. During this latter phase, the needle thread catcher should begin to move forward when the shuttle point is exactly opposite the rising needle.
- 25.7. Turn the clutch disc in sewing direction until the stop lug has snapped into the notch of the drive pulley. The machine is thus in its starting position again.

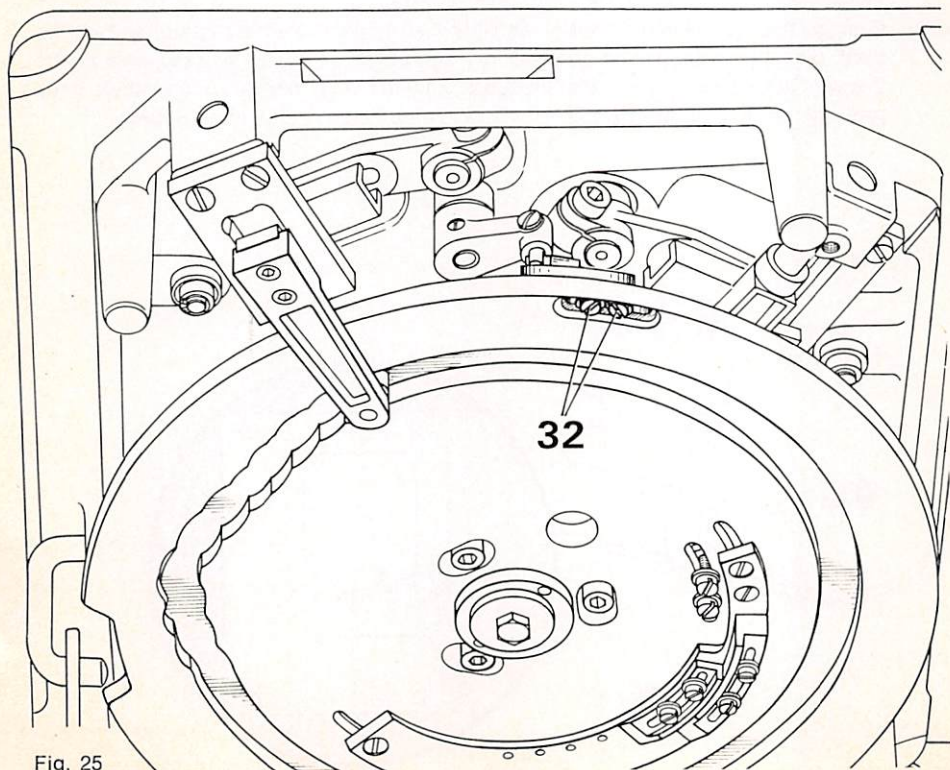


Fig. 25

**26. Adjusting the stationary knife (Fig. 26)**

- 26.1. Loosen both screws **40** of the stationary knife which are located on the under-side of the needle plate.
- 26.2. Set the knife so that there is a clearance of 1 mm (0.04") between the edge of the needle hole and the cutting edge of the knife (see encircled view of Fig. 26).
- 26.3. In this position, tighten both screws of the knife again.
- 26.4. Replace and screw on the needle plate.
- 26.5. To make a cutting test, pull two threads through the needle hole and operate the lifting lever by hand. As you do this, both threads should be trimmed perfectly.
- 26.6. If they are not, remove the needle plate and adjust the knife so that the left end of its cutting edge — as seen from the front — is a little higher than the right. This is to ensure a perfect shearing action between the movable and the stationary knife after the needle plate has been screwed on again.
- 26.7. Screw on the cylinder bed top cover, insert the trunnion block into the bearing bushing of the machine and push it toward the rear as far as it will go. Place the two slide blocks on their studs, making sure that their smooth surfaces are facing upwards. Take care that the spacing washers are replaced, if any. Turn the rear slide block on its stud so that its long side faces toward the right.
- 26.8. Place the slide block guide over the rear slide block and screw it to the trunnion block with the aid of the two pan-head screws.
- 26.9. Replace the arch clamp, together with the feed bar and the feed plate, so that the front slide block enters the channel in the feed bar. Push both transverse shafts through the holes in the trunnion block and the arch clamp so that their ends protrude equally on both sides. Then tighten both transverse shaft screws.

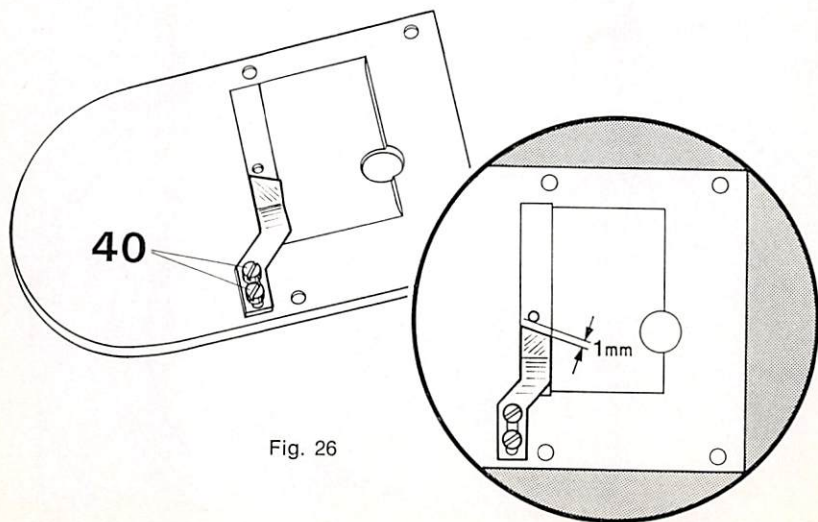


Fig. 26



**28. Setting the machine for its largest tack size (Fig. 28)**

- 28.1. Open the two covers which are located on the bedplate to the right and left of the cylinder bed.
- 28.2. Loosen both hexagon nuts **43** which are now exposed and push them inwards as far as they will go.
- 28.3. In this position, tighten both nuts **43** securely.
- 28.4. If the largest tack should be bigger than the cutout of the clamp feet, place suitable limiting brackets under both nuts.

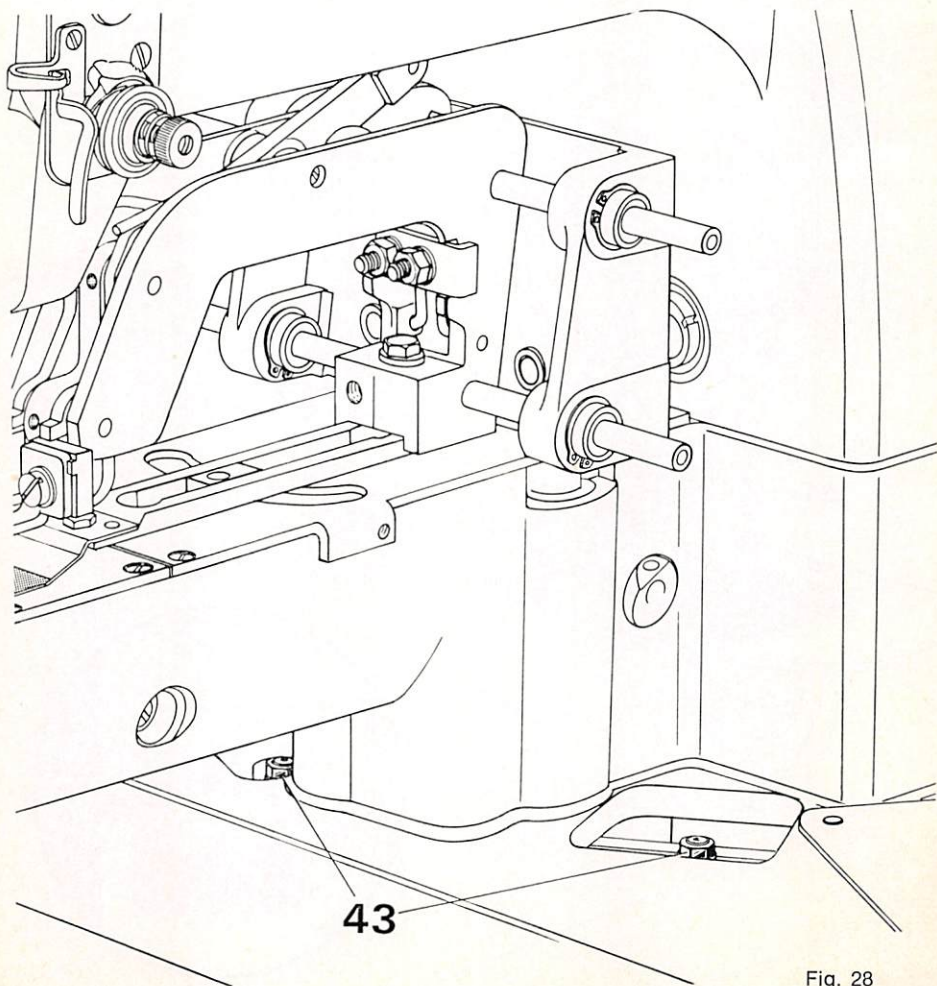


Fig. 28

**29. Centering the tack design in the cutout of the clamp feet (Fig. 29)**

- 29.1. Loosen clamp screw **44** in the left crank just sufficiently to allow the trunnion block to be moved crosswise against resistance.
- 29.2. Also loosen clamp screw **45** in the right crank just sufficiently to allow the trunnion block to be moved lengthwise against resistance.
- 29.3. Operate the starting lever by hand. Then turn the V-belt pulley in sewing direction, while simultaneously adjusting the position of the arch clamp until the needle at the extreme right and left of the tack design clears both clamp feet at the same distance.
- 29.4. Tighten clamp screw **44** of the left crank.
- 29.5. Continue turning the V-belt pulley in sewing direction until the machine starts feeding lengthwise of the cylinder bed.
- 29.6. Adjust the position of the arch clamp until the needle while stitching the near and far side of the tack design clears the near and far edge of the clamp feet cutout at the same distance.
- 29.7. Tighten clamp screw **45** of the right clamp.
- 29.8. Continue turning the V-belt pulley until the machine has completed its sewing cycle and stopped. Then rotate the clutch disc until the stop lug has snapped into the notch of the drive pulley, and the machine is in its starting position again.

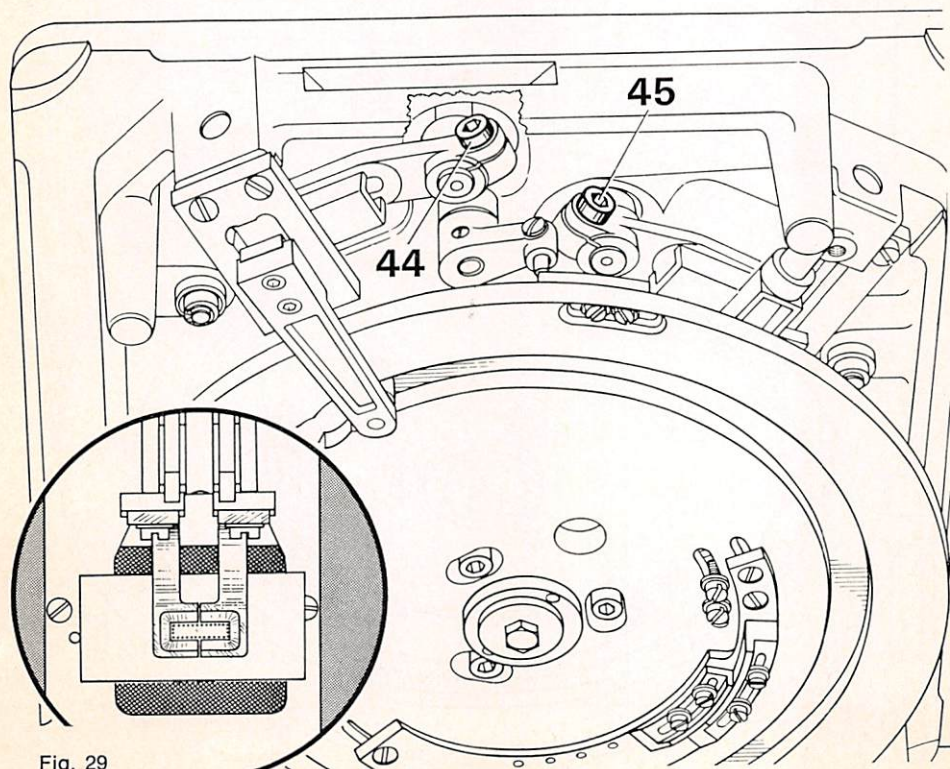


Fig. 29



**30. Timing the tension release mechanism (Fig. 30)**

- 30.1. Operate the starting lever by hand, and turn the V-belt pulley in sewing direction until the take-up lever is at its lowest point.
- 30.2. Loosen both screws **36** of the tension release tripping segment on the feed cam and push them down as far as they will go.
- 30.3. Then push the tension release tripping segment back as far as it will go, i.e. until it contacts the feeler lever. In this position, tighten both screws **36**.
- 30.4. To check this adjustment, turn the V-belt pulley backwards until the needle bar is at its lowest point. In this position, the lower tension must be released.
- 30.5. Then again bring the machine to its starting position.

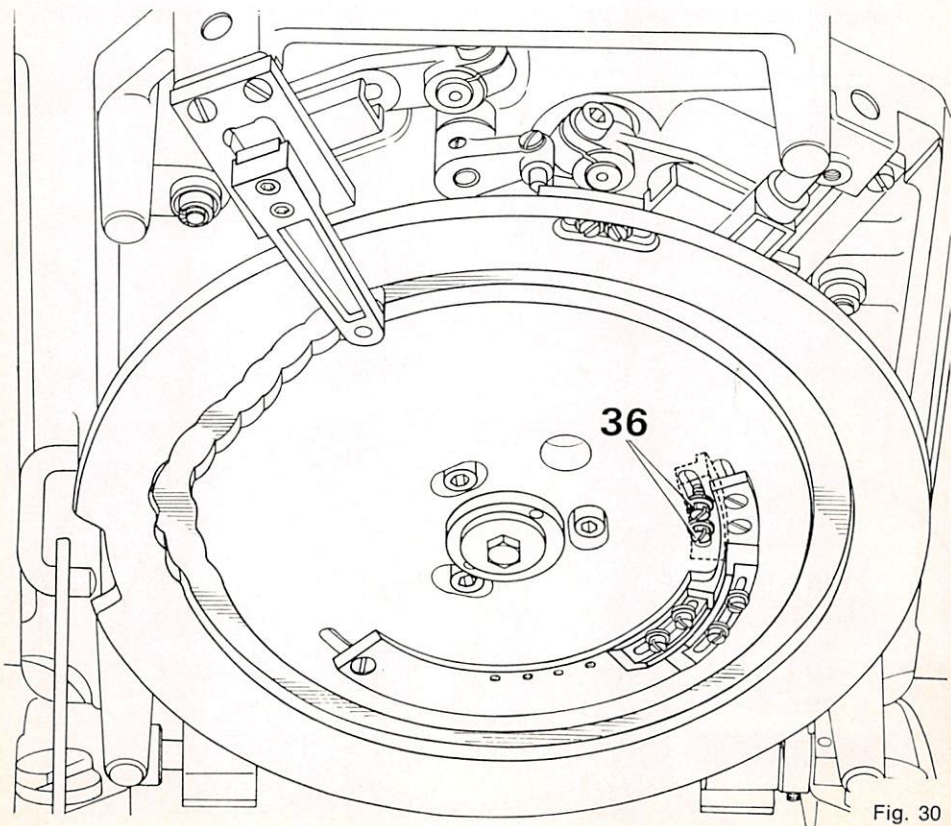


Fig. 30

- 31. Adjusting the tension release lever (Fig. 31)**
- 31.1. Operate the starting lever by hand and slightly rotate the V-belt pulley in sewing direction until screw **46** of the tension release lever is accessible.
  - 31.2. In this position, loosen the lock nut of screw **46**.
  - 31.3. Turn screw **46** until the thread check spring is in line with the bottom edge of the slack thread regulator and both tension discs are separated (see encircled view).
  - 31.4. The thread tension should still have a small amount of play, i.e. when you press the tension release lever toward the right, the thread check spring should move downwards slightly.
  - 31.5. In this position, tighten the lock nut of screw **46**.
  - 31.6. Turn the V-belt pulley in sewing direction a few turns. The thread tension must now be fully activated and there must be a small amount of play between screw **46** and the actuating lever.
  - 31.7. Then bring the machine to its starting position again.

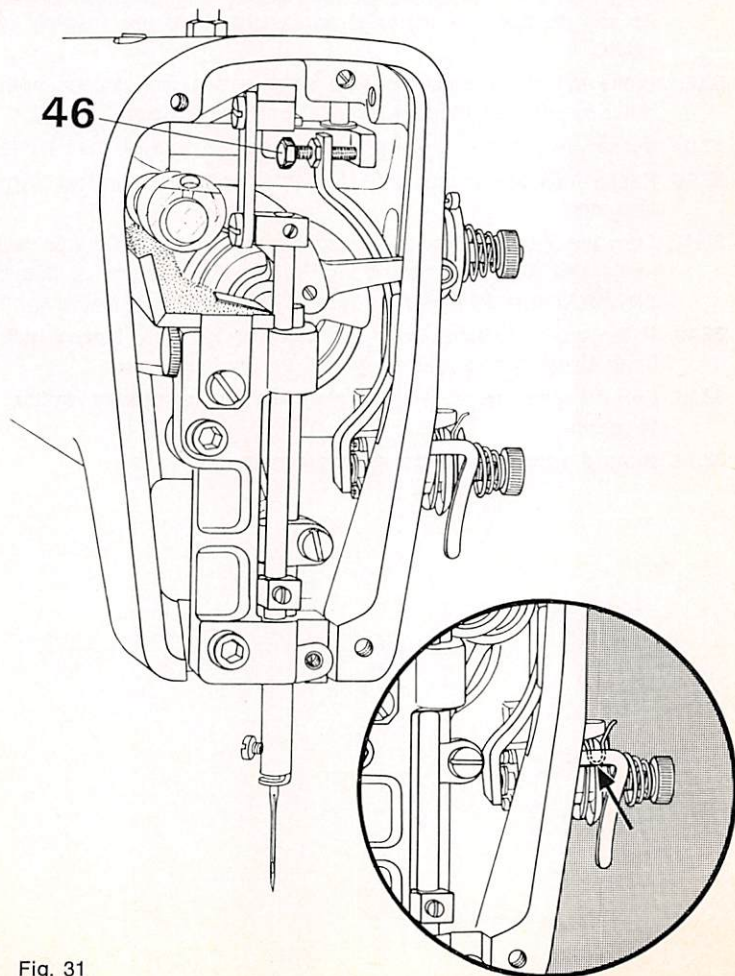


Fig. 31



**32. Timing the motor speed changes (Fig. 32)**

- 32.1. Check to make sure the machine is in its starting position. Loosen the three screws of the pole-changing switch (on the right-hand outer surface of the machine base).
- 32.2. Adjust the switch vertically so that there is a clearance of about 4 mm (0.16") between the horizontal actuating lever (see arrow) inside the machine base and the actuating plunger of the switch.
- 32.3. In this position, tighten the three screws of the switch again.
- 32.4. Briefly switch on the motor and check its direction of rotation. As seen from the front end of the machine, the motor should turn clockwise.
- 32.5. If the motor rotates counter-clockwise, exchange the wires in the plug.
- 32.6. Make sure the V-belt is still removed, and switch on the motor.
- 32.7. Operate the starting lever by hand, and turn the V-belt pulley in sewing direction. As you do this, the motor should switch from low to high speed after the first stitch.
- 32.8. If the motor switches over too early or too late, loosen both screws **34** of the outer switch-over tripping segment on the feed cam.
- 32.9. Set the switch-over tripping segment earlier or later, then tighten screws **34** again.
- 32.10. Repeat this adjustment until the motor switches from low to high speed after the first stitch.
- 32.11. Turn the V-belt pulley in sewing direction until the motor switches from high to low speed. Continue turning the V-belt pulley. As you do this, check to make sure the machine makes another four stitches before it switches off mechanically.
- 32.12. If the motor switches over too early or too late, loosen both screws **35** of the inner switch-over tripping segment on the feed cam.
- 32.13. Set the inner switch-over tripping segment somewhat earlier, and tighten screw **35** again.
- 32.14. Bring the machine to its starting position.

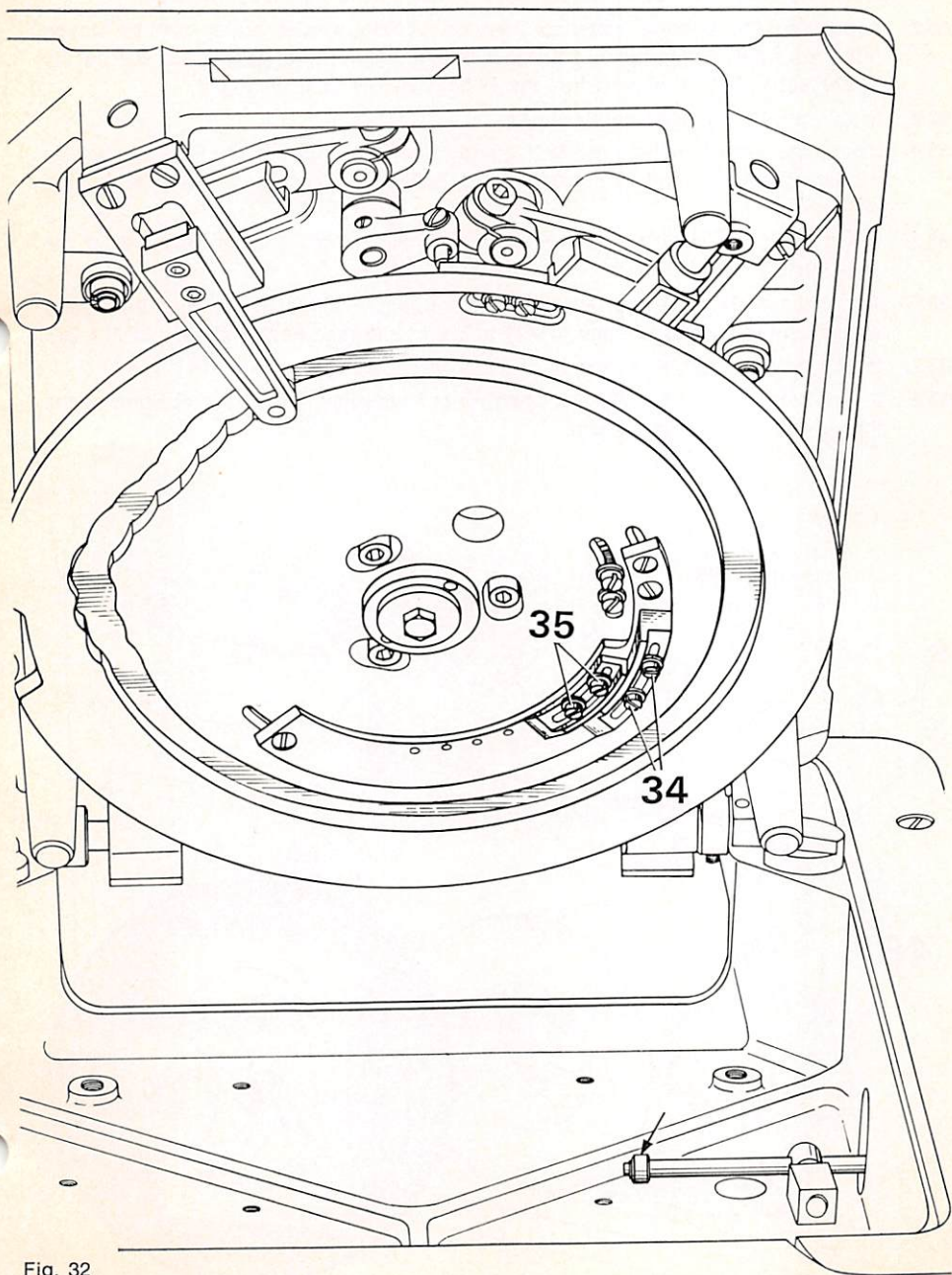


Fig. 32



**33. Adjusting the bobbin winder (Fig. 33)**

- 33.1. Replace the mounting plate and the bobbin winder, tightening nuts **47** just sufficiently to allow the bobbin winder plate to be moved against resistance.
- 33.2. Reposition the bearing plate so that the bobbin winder pulley will be driven reliably by the friction wheel when the bobbin winder is engaged, but will not be in contact with this wheel when the bobbin winder is disengaged.
- 33.3. In this position, tighten both nuts **47**.
- 33.4. Mount the V-belt, replace the belt guard, place an empty bobbin on the bobbin winder spindle, thread the machine for bobbin winding, and start the bobbin winder.
- 33.5. If too much or too little thread is wound on the bobbin, loosen screw **48** of the stop latch.
- 33.6. Adjust the stud on the stop latch so that the bobbin winder stops when the thread wound on the bobbin is 1 mm (0.04") below its rim (see encircled view of Fig. 33).
- 33.7. In this position, tighten screw **48** of the stop latch stud.
- 33.8. If the thread on the bobbin has been wound unevenly, adjust the position of the thread guide on the belt guard.

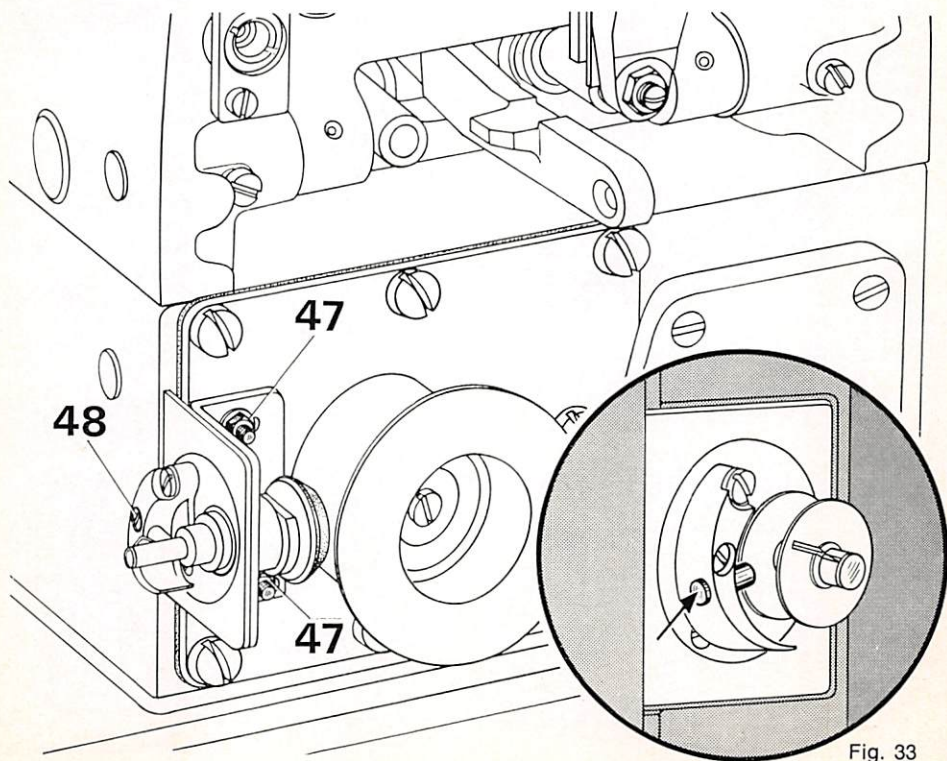


Fig. 33

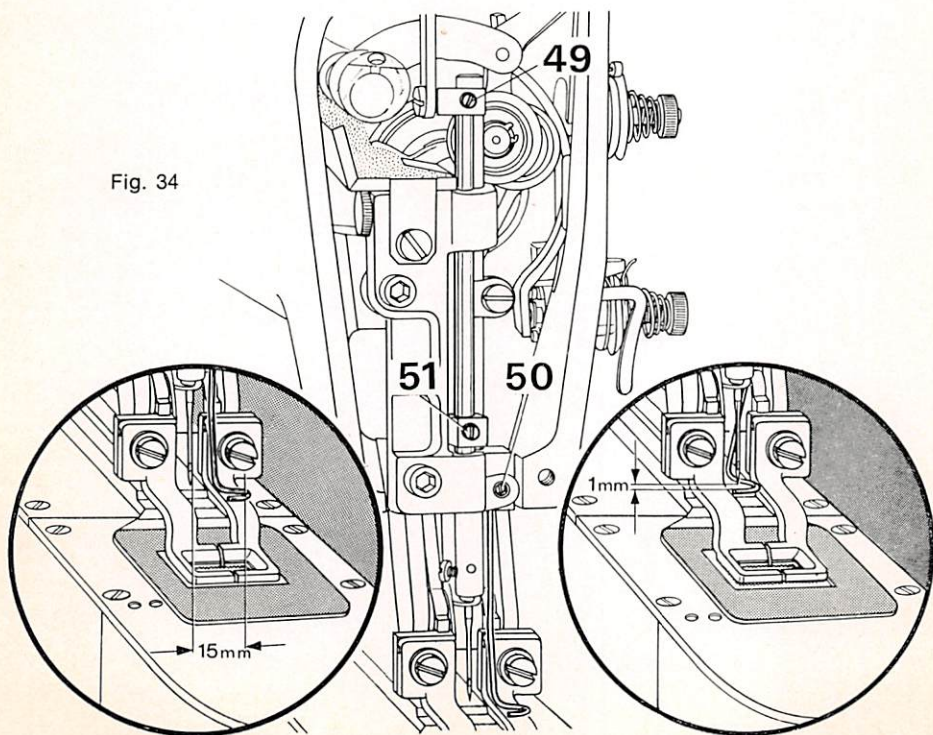
**34. Adjusting the thread wiper (Fig. 34)**

- 34.1. Check to make sure the machine is in its starting position, and loosen screw **49** of the vertical thread wiper rod at the needle-bar end of the machine.
- 34.2. Reposition the thread wiper rod so that there is a clearance of about 15 mm (0.6") between needle and thread wiper wire.
- 34.3. In this position, tighten screw **49**.
- 34.4. Now loosen screw **50** of the thread wiper wire.
- 34.5. Adjust the thread wiper wire vertically so that it passes below the needle point at a distance of about 1 mm (0.04") when the lifting lever is operated (see encircled view at right).
- 34.6. Tighten screw **50** of the thread wiper wire.

**35. Adjusting the eye guard (Fig. 34)**

- 35.1. Loosen screw **51** of the lifting bracket on the vertical thread wiper rod.
- 35.2. Adjust the lifting bracket so that there is a clearance of about 1 mm (0.04") between the needle bar frame and the bracket.
- 35.3. In this position, tighten screw **51** of the lifting bracket again.
- 35.4. Replace the face cover and operate the lifting lever to see if the eye guard is swung toward the left at the same moment when the clamp feet are raised.

Fig. 34





### **36. Final worksteps**

- 36.1. Replace the cover strip above the front slide block.
- 36.2. Screw on the cylinder bed cap and the cap retaining spring.
- 36.3. Screw on the cover on the side of the machine arm.
- 36.4. Reconnect both chains.
- 36.5. Replace the bobbin case with a full bobbin in the shuttle, making sure that the thread is pulled through the hole in the position finger so that its end protrudes about 3 cm (1.2").
- 36.6. Thread the machine and place material under the clamp feet.
- 36.7. Regulate the upper tension so that, when the bobbin thread tension is released, the thread loop is passed smoothly around the shuttle.
- 36.8. Switch on the machine and make a few sewing and trimming tests.

### **37. Conversion to other subclasses having different gear ratios**

- 37.1. Make sure the machine is at its starting position, i.e. at the sewing cycle end position. Take out both screws of the roller lever located under the bedplate near its left front corner. Then strip the roller lever.
- 37.2. Take out the hexagon screw in the middle of the feed cam and remove the cap washer underneath.
- 37.3. Turn the eccentric bushing slightly toward the left, i.e. counter-clockwise, and strip both the feed cam and the bearing bushing.
- 37.4. Take out the three allen screws on the driving spur gear on the vertical shaft of the machine and remove the spur gear.
- 37.5. Insert the spur gear having another gear ratio, and secure it in position with the three allen screws.
- 37.6. Now make the adjustment described in Chapters 21 through 32 inclusive.

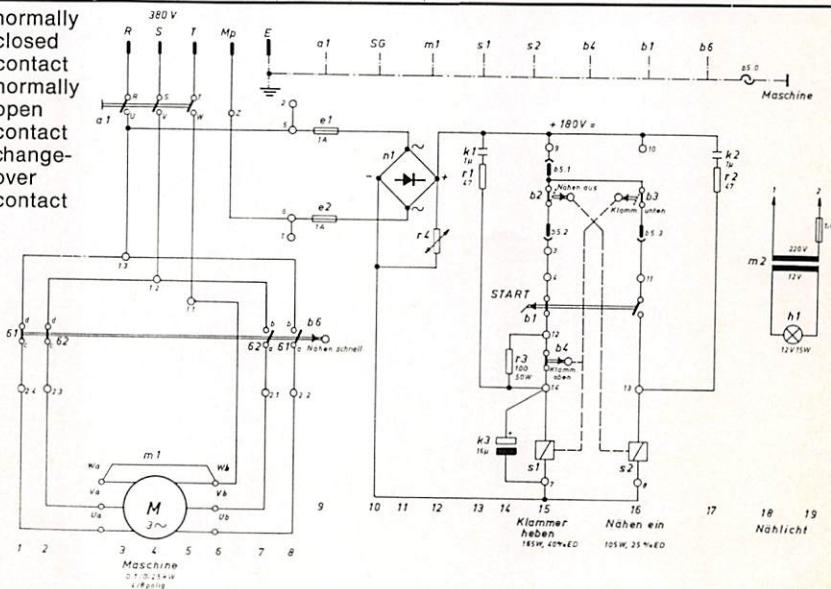


# 38. Explanation of circuit diagram No. 91-095418-95

Original position: master switch a1 off.

Switch	Current Path	*) ö s w	Unit	Current Path	Zyl.	Function
a 1	3-5	s	m 1	3-5		Motor runs slowly
b 4	15	ö	s 1	15		Work clamp is raised Connection to s1 now via r3
b 1	15	ö	s 1	15		Work clamp is lowered
b 1	16	s	s 2	16		Low-speed sewing
b 6	7+8	s	m 1	4		After 1st stitch High-speed sewing
b 1	16	ö	s 2	16		Solenoid is de-energized Machine remains on (mechanically)
b 6	1+2	s	m 1	4		At fourth to last stitch Low-speed sewing
b 2	15	s	s 1	15		Machine switches off mechanically Work clamp is raised

\*) ö = normally closed contact  
s = normally open contact  
w = change-over contact



Befehlsgeber geschaltet bei ...

Schaltung für 380V gezeichnet.  
Für 220V:  
Brücke zwischen ZuW von a1.  
Leitung von Mp nach Z entfernen.

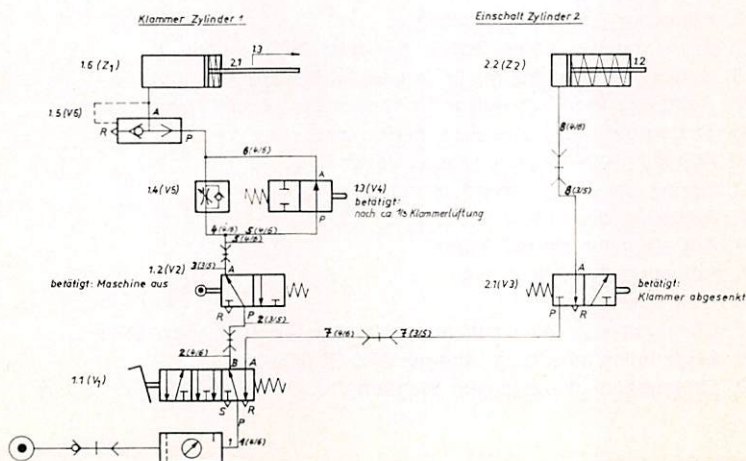
Circuit diagram No. 91-095418-95 for the Pfaff 3337

# 39. Explanation of pneumatic diagram No. 91-130 460-95

Original position: master switch a1 off, compressed air on.

Switch	Current Path	*) $\bar{o}$ s w	Unit	Current Path	Zyl.	Function
a 1	3-5	s	m 1	3-5		Motor is running slowly
V 1	Central position				Z 1-	Work clamp is lowered
			V 6			Quick exhausting action
V 1	Ultimate position				Z 2+	Low-speed sewing
						After 1st stitch
b 6	7+8	s	m 1	4		High-speed sewing
V 1	Starting position				Z 2-	Machine remains on (mechanically)
						At fourth to last stitch
b 6	1+2	s	m 1	4		Low-speed sewing
V 2			V 5			Machine switches of mechanically
V 5			V 6		Z 1+	Work clamp is slowly raised
						After work clamp has risen $\frac{1}{3}$
V 4			V 6			Work clamp is raised quickly

\*)  $\bar{o}$  = normally closed contact  
s = normally open contact  
w = change-over contact



Pneumatic diagram No. 91-130 460-95 for the Pfaff 3337



# Contents

0. Preparations for adjustment . . . . .	1
1. Removing the forked clutch lever . . . . .	1
2. Adjusting the drive pulley on the arm shaft . . . . .	2
3. Adjusting the starting latch . . . . .	3
4. Vertical adjustment of starting latch . . . . .	4
5. Adjusting the forked clutch lever . . . . .	5
6. Adjusting the clamp lifting lever . . . . .	6
7. Adjusting the knife actuating rod . . . . .	7
8. Adjusting the locking lever . . . . .	8
9. Adjusting the micro switches . . . . .	9
10. Centering the needle in the needle hole . . . . .	10
11. Dismantling certain parts . . . . .	11
12. Dismantling certain parts (continued) . . . . .	12
13. Setting the shuttle to the needle . . . . .	13
14. Setting the shuttle driver shaft longitudinally . . . . .	14
15. Adjusting the shuttle driver . . . . .	15
16. Adjusting the radial play of the shuttle driver . . . . .	16
17. Timing the shuttle driver motion and adjusting the needle rise . . . . .	16
18. Setting the needle bar at the correct height . . . . .	18
19. Adjusting the bobbin thread puller and the movable knife . . . . .	19
20. Mounting the feed cam . . . . .	20
21. Timing the feed motion . . . . .	21
22. Adjusting the stop tripping segment . . . . .	22
23. Adjusting the thread catcher crank . . . . .	23
24. Adjusting the needle thread catcher . . . . .	24
25. Timing the thread catcher motion . . . . .	25
26. Adjusting the stationary knife . . . . .	26
27. Centering the clamp feet in the feed plate cutout . . . . .	27
28. Setting the machine for its largest tack size . . . . .	28
29. Centering the tack design in the cutout of the clamp feet . . . . .	29
30. Timing the tension release mechanism . . . . .	30
31. Adjusting the tension release lever . . . . .	31
32. Timing the motor speed changes . . . . .	32
33. Adjusting the bobbin winder . . . . .	34
34. Adjusting the thread wiper . . . . .	35
35. Adjusting the eye guard . . . . .	35
36. Final worksteps . . . . .	36
37. Conversion to other subclasses having different gear ratios . . . . .	37
38. Explanation of circuit diagram No. 91-095 418-95 . . . . .	38
39. Explanation of pneumatic diagram No. 91-130 460-95 . . . . .	39





