

**SERVICE MANUAL**  
**for**  
**VIKING**  
*Automatic*  
**home sewing machine**  
**class 21**

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## 1. Adjusting the machine for straight stitching

Set the needle swing control on staff (1 Fig. 1) at 0, and turn the starting-position control to the right. Adjust lever (2 Fig. 1) to obtain minimum play between the high point of a cam and the follower (3 Fig. 1). This setting should be made with the stitch selector at 5. Loosen screw (5 Fig. 1) with a screwdriver (4 Fig. 1) and tighten it after making the setting.

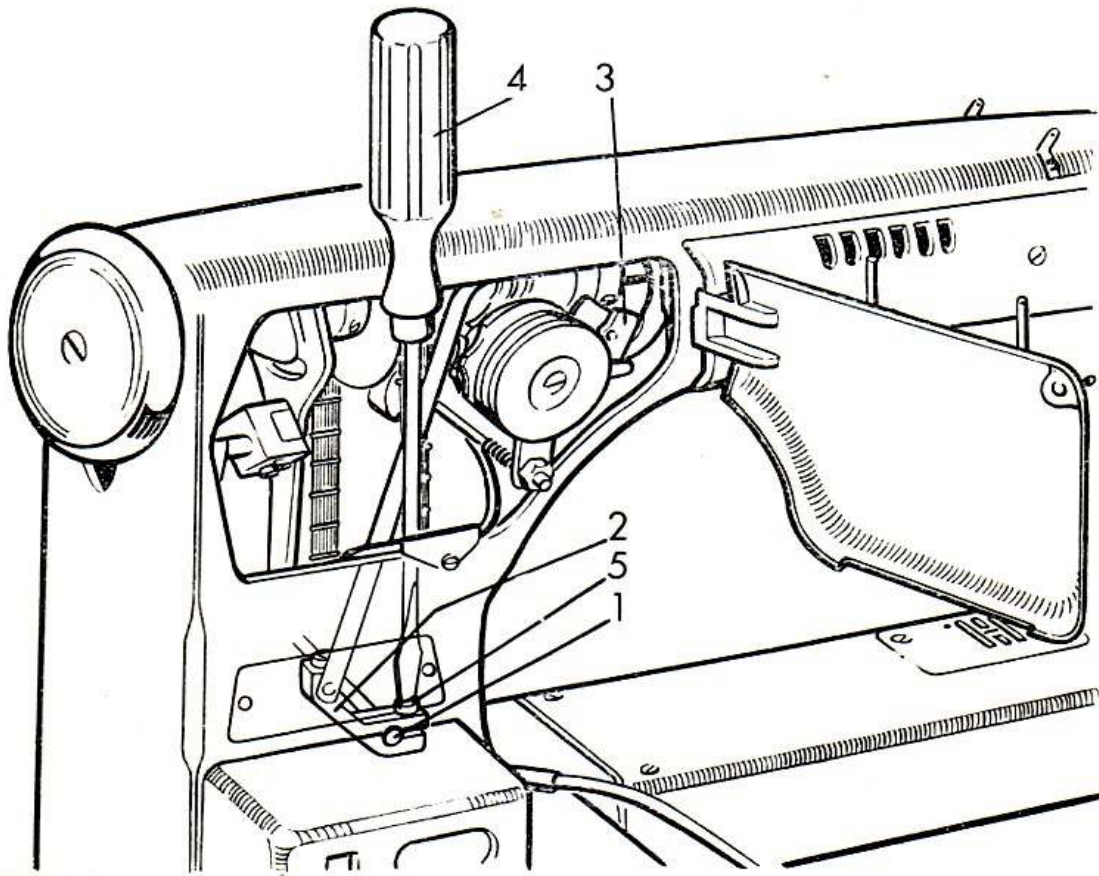


Fig. 1.

## 2. Timing the needle swing

Set the needle swing control for maximum stitch width. Turn the worm gear (1 Fig. 2) on the camshaft, pertaining to the zig-zag drive, until the left-hand and right-hand movements of the needle-bar frame (3 Fig. 3) terminate when the tip of the needle is more than  $\frac{9}{32}$  in. (7 mm) above the throat plate on the downward stroke. Loosen screws (2 Fig. 2) and tighten them again after making the setting.



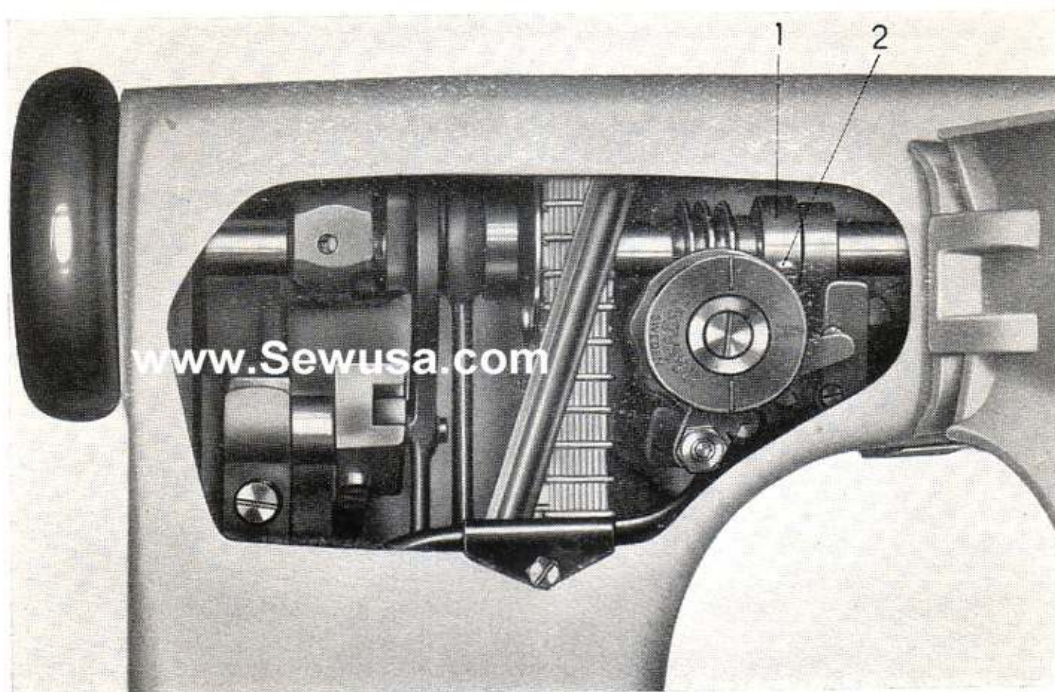


Fig. 2.

### 3. Setting the presser bar height

The presser bar height is adjusted by moving the bar (6 Fig. 3) longitudinally in relation to the presser bar guide (7 Fig. 3). Loosen screw (8 Fig. 3), and tighten it again after making the setting. For general sewing work, set the distance from the presser foot to the throat plate at  $\frac{9}{32}$  in. (7 mm — minimum distance  $\frac{1}{4}$  in., 6,5 mm) with the presser bar lifter up.

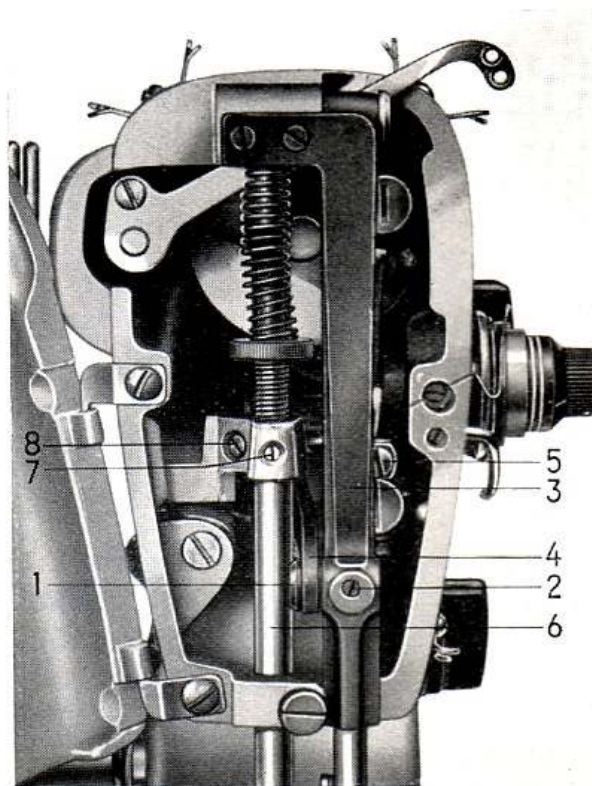


Fig. 3.

#### 4. Centring needle in throat plate hole

Set the needle swing control for maximum stitch width. Turn eccentric (1 Fig. 3) on the needle-bar frame (3 Fig. 3), which serves as bearing for link (4 Fig. 3) from the zig-zag drive, until the needle swings in the throat plate hole with equal clearance on both sides when the hand-wheel is turned. Loosen set screw (2 Fig. 3) before making the setting, and tighten it afterwards.

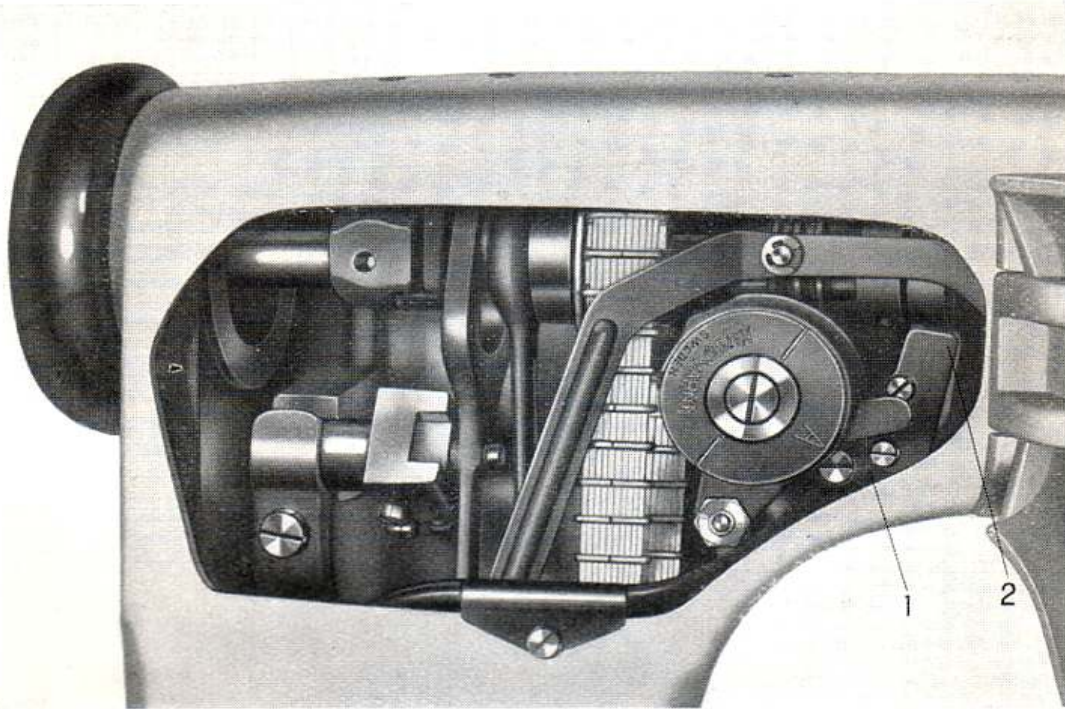


Fig. 4.

#### 5. Setting centre position for zig-zagging

Set the starting-position control at the centre position and the needle swing control at 0. Loosen screw (1 Fig. 4), and make the setting by pressing or easing follower (2 Fig. 4) until the needle is centred in the throat plate hole.

#### 6. Tangential adjustment of sewing hook

Set the machine for straight stitching in the right-hand starting position, and for a zig-zag stitch  $\frac{5}{64}$  in. (2 mm) wide. Use the handwheel to bring the needle about  $\frac{5}{64}$  in (2 mm) above the lower end of the stroke on the way up. Loosen the bevel gear (1 Fig. 6) on the lower camshaft and screw it fast again in such a position that the tip (1 Fig. 5) of the sewing hook comes in line with the centreline of the needle (2 Fig. 5). The arm sleeve must be removed for this setting.



## 7. Setting the needle bar height

Set the sewing hook and needle in the positions described in sect 5. Loosen the needle bar and re-set it in such a position that the upper end of the eye of the needle is located about  $\frac{3}{64}$  in. (1 mm) below the tip of the sewing hook. Loosen screw (5 Fig. 3) to make this setting, and then tighten it again.

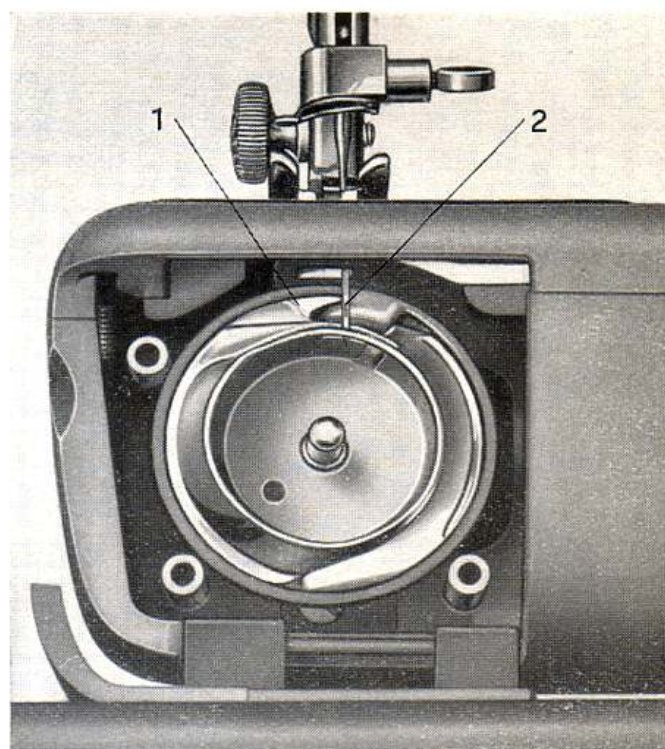


Fig. 5.

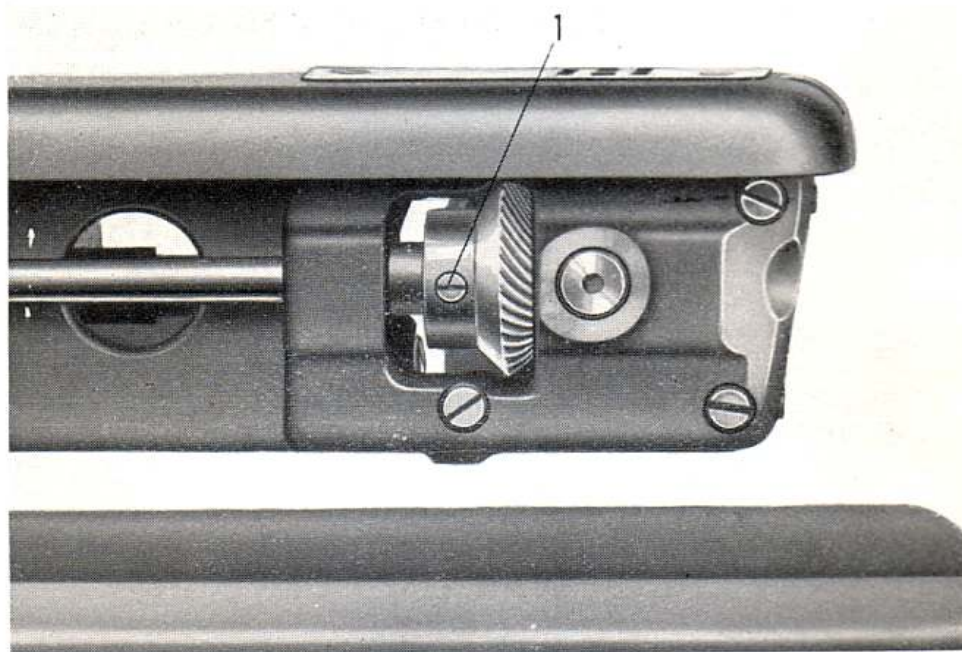


Fig. 6.

## 8. Setting clearance between sewing hook and needle

Use needle No. 90. Set the hook and the needle in the same positions as in sect. 7. When the hook is pressed inwards towards the driver, its

tip should clear the needle by about 0.004 in. (0.1 mm). If the hook is too far from the needle, loosen the driver from gear (S-11515 Fig. 7) and insert one or more washers S-11539 between the driver and the gear.

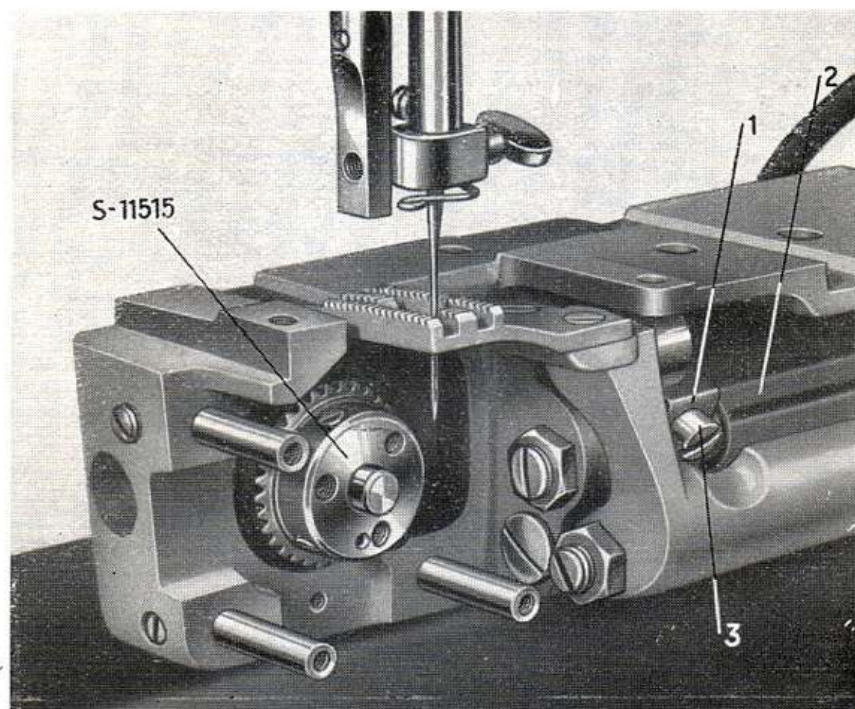


Fig. 7

## 9. Setting the feed dog height

When the feed dog is at the highest point, the tips of its teeth should be  $\frac{3}{64}$  in (1 mm) above the level of the throat plate. To adjust the height, turn lever (S-11599 Fig. 8) on the feed dog rocker rod (S-11598 Fig. 8). Screw (1 Fig. 8) must be loosened to make this setting, and then tightened again. To be at this screw in an assembled machine, the door in the bed plate must be taken off.



Fig. 8.



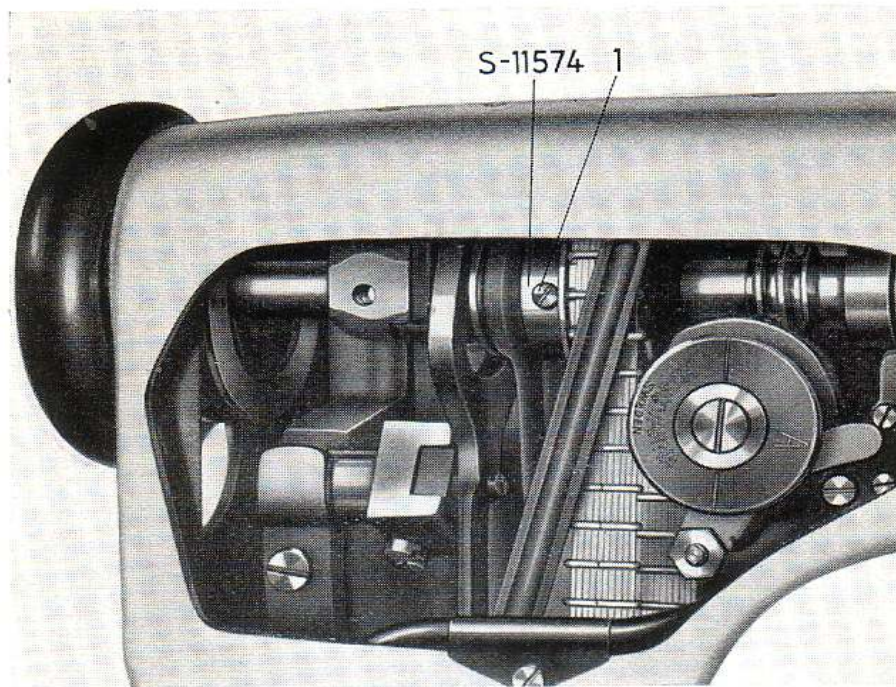


Fig. 9.

### **10. Timing the feed**

This setting is easiest to make with the machine set for maximum stitch length. The feeding of the cloth should stop just before the needle goes down into it, when sewing both forwards and backwards. To adjust, turn eccentric (S-11574 Fig. 9) on the camshaft. Loosen screw (1 Fig. 9) to make this setting, and then tighten it again.

### **11. Lateral setting of the feed dog**

Turn lever (1 Fig. 7) on its shaft (2 Fig. 7). Loosen screw (3 Fig. 7) for this setting and tighten it again afterwards.

### **12. Setting the thread giver**

This setting is made by turning the thread tensioner. Open the face plate first, to get at the screw at (1 Fig. 10), which holds the tensioner. Loosen the screw and turn the tensioner with a screwdriver as shown in Fig. 10.



After making the setting, tighten the screw (1 Fig. 10) again. The thread must not be tight when the needle goes through the cloth on the down-stroke. The take-up spring must not move appreciably when the thread goes around the sewing hook.

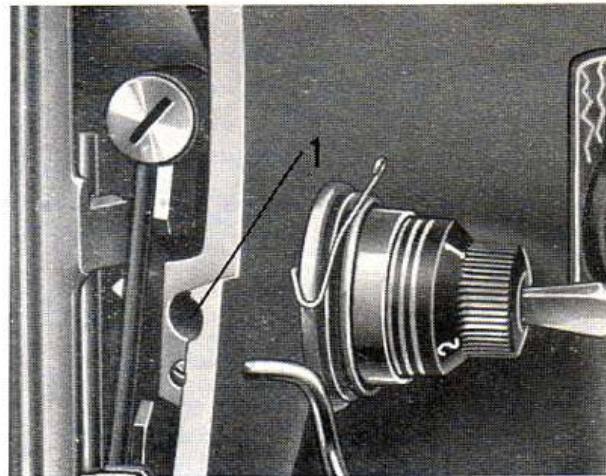


Fig. 10.

### **13. Setting the take-up spring tension**

Take off the thread tensioner. Turn shaft (1 Fig. 11) with respect to the tensioner (2 Fig. 11). To make this setting, first loosen screw (3 Fig. 11), which holds the shaft, and tighten it again after the adjustment.

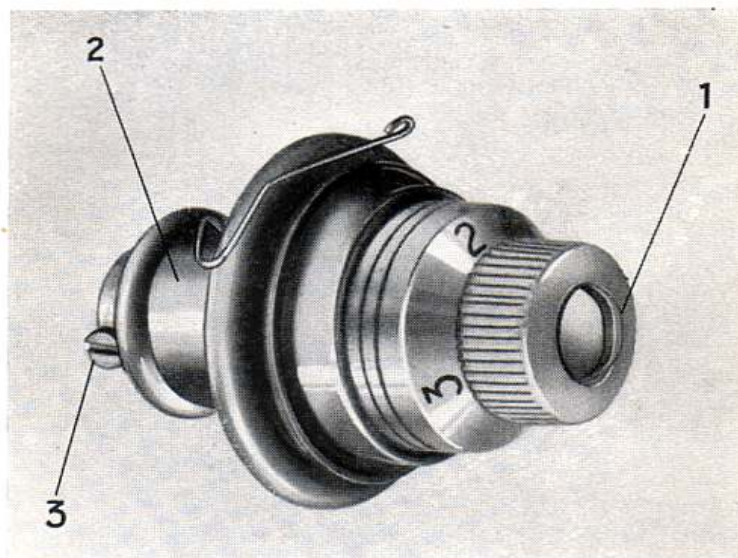


Fig. 11.

## 14. Changing camshaft drive belt

Take off the belt guard on the end of the machine. Take out the reduction gear, raising it enough to get it free of the belt (3 Fig. 12). Remove the screw in the centre of the handwheel (1 Fig. 12), which holds it to the camshaft. Draw out the handwheel from the machine, sliding the loose belt (3 Fig. 12) under the wheel in towards the centre of the machine on both sides, so that the handwheel and belt can come out through hole (2 Fig. 12) in the sewing head.

To replace the handwheel and belt, proceed in the opposite manner. Place the new belt in the belt groove on the handwheel; slide the free end of the belt into place, holding the free section of belt on the underside of the wheel in towards the centre of the machine.

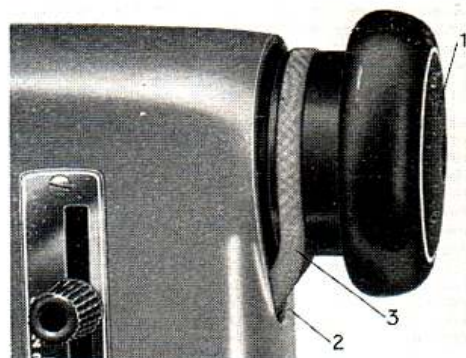


Fig. 12.



