May 21, 1963 KAZUMA TATEISHI 3,090,846

TUMBLER SWITCH

Filed Aug. 4, 1960

Fig. 1

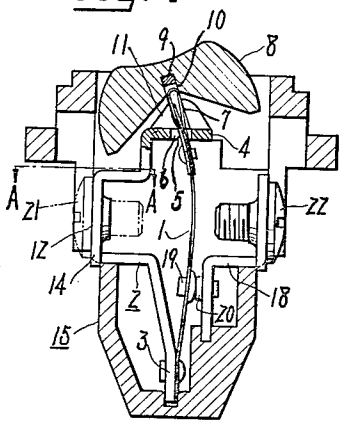


Fig. 2

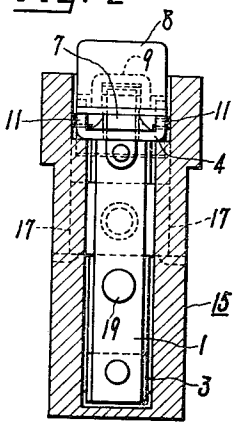


Fig. 3

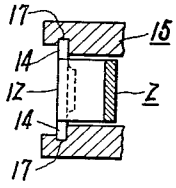


Fig. 4

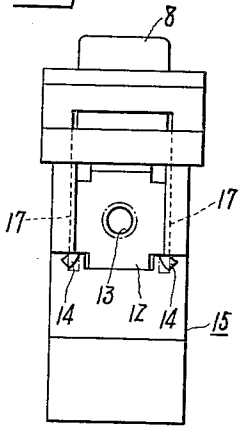


Fig. 5

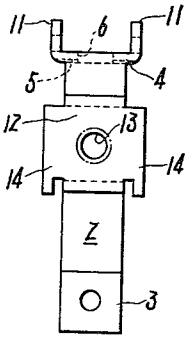


Fig. 6

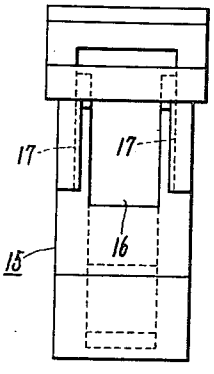
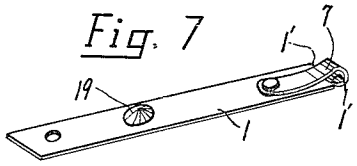


Fig. 7



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3,090,846
Patented May 21, 1963

3,090,846

TUMBLER SWITCH

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Filed Aug. 4, 1960, Ser. No. 47,440
1 Claim. (Cl. 200—67)

This invention relates to a tumbler switch.

According to this invention, a button for actuating a spring carrying a movable contact and a frame for supporting said spring are previously assembled into one unit and said unit is inserted into an open mouthed casing so as to form a tumbler switch. In this way, the construction of the tumbler switch can be much simplified.

In the accompanying drawings:

FIG. 1 is an inside view of the tumbler switch according to this invention,

FIG. 2 is a side view,

FIG. 3 is a sectional view through the line A—A in FIG. 1,

FIG. 4 is a side view of the switch,

FIG. 5 is a front view of the supporting frame,

FIG. 6 is a side view of the casing, and

FIG. 7 shows the flat spring.

1 is a flat spring carrying a movable contact 19. The lower end of said spring is riveted at the lower end 3 of a supporting frame 2 and the upper ends or shoulders 1' of said spring are forced to engage with grooves 5 formed in the bottom of the upper portion of said frame so as to curve the spring 1 slightly as shown in FIG. 1, while the loop 7 riveted at the upper end of the spring 1 protrudes from the opening 6 situated between the grooves 5 and engages with the central recess 10 formed at the bottom of said button.

The upper portion 4 of the frame 2 is provided with a pair of uprights 11 to which the inverted U-shaped shaft 9 is pivoted so as to make the button 8 swingable.

The middle portion 12 of the frame 2 is provided with an opening 13 in which a terminal 21 is to be threaded. Further, the middle portion 12 is provided with downwardly extending projections 14 on the sides thereof. The casing 15 of a suitable insulating material is provided with windows 16. In each side of said window, a groove 17 is formed to receive the projection 14.

The assemblage consisting of the button 8, the flat spring 2 and its supporting frame 1 is then inserted into the open mouthed casing 15 with the projections 14 sliding in the grooves 17. Next, the lower exposed portions of

the projections 14 are bent so as to connect the assemblage and the casing 15 securely. Then, a terminal 21 is threaded into the opening 13 and the other frame 18 supporting a stationary contact 20 is also inserted in the casing 15 in the same manner as the frame 2 and the other terminal 22 is threaded into the frame 2.

The operation of this switch is as follows:

Assuming that the movable contact 19 is in contact with the stationary contact 20 as shown in FIG. 1. By turning the button 8 in a clockwise direction, the spring 1 snaps in the opposite direction whereby the contact between the contacts 19 and 20 will be broken. The spring 1 will maintain its position upon the removal of hand from the button 8.

Turning the button 8 to the opposite direction causes the spring 1 to snap back to its initial position and the movable contact 19 will be brought into contact with the stationary contact 20 again.

As is clear from the above, the assemblage of the parts of this switch is very simple.

I claim:

A tumbler switch comprising, a frame, a flat spring carrying a movable contact, one end of the spring being attached to the frame, the frame having grooves located remotely from the last-mentioned end of the spring, the spring having shoulders adjacent to its opposite end and which shoulders engage with the grooves, the frame having an aperture located between the grooves, the spring having an end part extending through said aperture and projecting beyond the frame, a U-shaped loop member fitting over and embracing said end part of the spring, said U-shaped member having a rounded bight and having legs riveted to the spring, an inverted U-shaped shaft, a rocking button mounted on said shaft over the loop, the upper portion of the frame having spaced lugs in which said shaft is mounted, said button having a groove in its under surface in which the rounded bight of the loop member snugly fits belows the shaft.

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