Nov. 25, 1958 J. A. BAILEY 2,862,083

CAM ACTUATED SWITCH

Filed Feb. 6, 1957

FIG. 1.

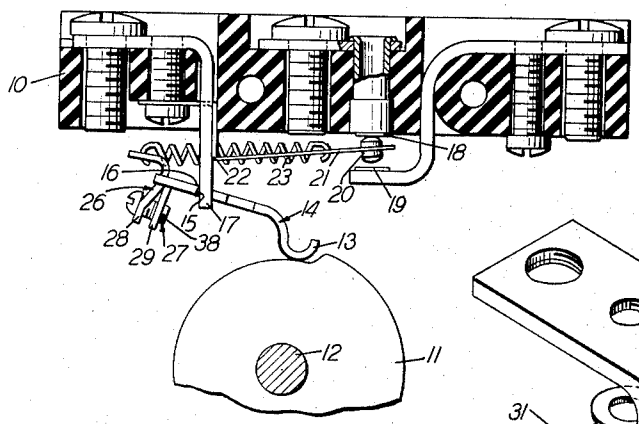


FIG. 2.

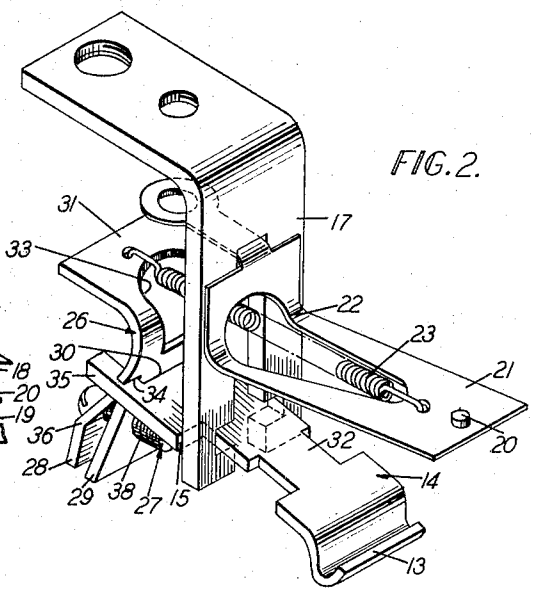


FIG. 3.

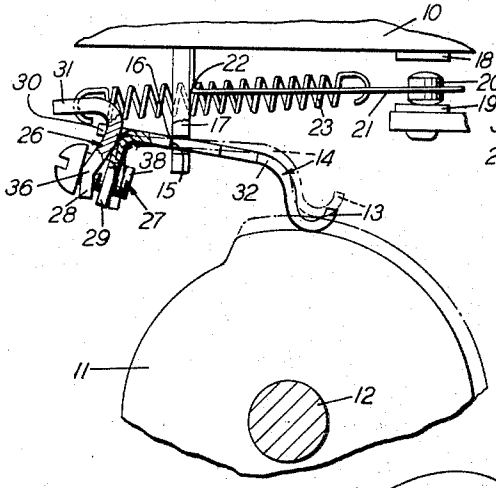
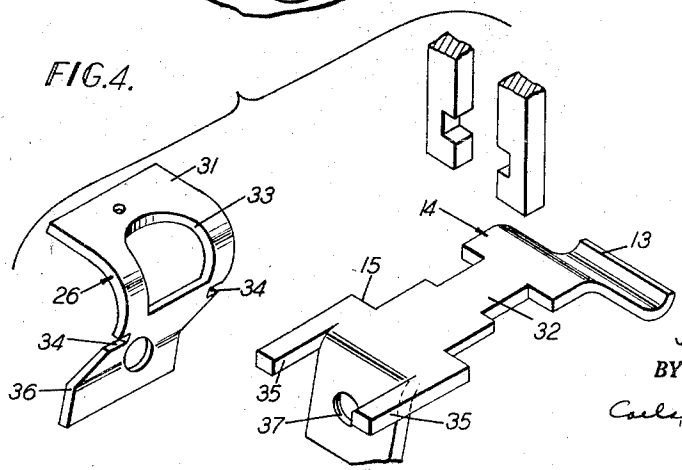


FIG. 4.



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CAM ACTUATED SWITCH

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3 Claims. (Cl. 200—166)

This invention relates to a self-contained switch having a contact arm movable back and forth between different positions by a lever projecting outwardly from the switch housing and constituting the follower of a movable cam.

The general object is to provide a switch of the above character incorporating a novel means for enabling the follower lever to be adjusted readily relative to the actuating cam in order to compensate for manufacturing variations in the mounting of the switch housing and the cam.

A more detailed object is to form the follower lever in two parts normally connected rigidly but swingable relative to each other to adjust the position of the follower end of the lever relative to the cam surface.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with a accompanying drawings, in which

Figure 1 is a longitudinal sectional view of a switch unit embodying the novel features of the present invention.

Fig. 2 is a perspective view of the operating parts of the switch.

Fig. 3 is a fragmentary view of part of Fig. 1 showing a different position of the parts.

Fig. 4 is an exploded perspective view of the parts of the switch lever.

In the form shown in the drawings for purposes of illustration, the switch and its operating parts are mounted on a separate housing or base **10** of insulation adapted to be mounted adjacent an actuating cam **11** which may as shown be of the open face type fast on a rotary shaft **12** journaled in a mounting separate from the switch. The cam has rises and falls engageable with a follower **13** which comprises the rounded end of a lever **14** having side shoulders **15** intermediate its ends fulcrumed at **16** on a post **17** rigid with and projecting from the base **10**.

The switch shown herein comprises opposed contacts **18** and **19** fixed to the base and coacting with a contact **20** on the free end of an arm **21** fulcrumed at **22** on the post and swingable back and forth between the fixed contacts. If desired, such swinging may be effected with a snap action by stretching a tension spring **23** between a point near the free end of the arm **21** and the other end of the lever **14** which is adapted to swing back and forth across the longitudinal center line of the arm in response to transfer of the follower **13** from the low to the high part of the cam **11** and vice versa.

In accordance with the present invention, the lever **14** is formed of two parts **14** and **26** arranged in end to end abutment and normally joined rigidly by a device **27** which is adjustable manually to vary the angular relation of the parts and therefore the posiiton of the follower **13** relative to the cam surface in the final assembly. For this purpose, the two parts are generally L-shaped levers with the short legs **28** and **29** lying alongside each other

and the heel portions rounded and abutting each other to define a fulcrum **30** for permitting swinging of the legs **28** and **29** toward and away from each other and thereby vary the angular relation of the other or longer legs **31** and **32**. The latter project in opposite directions from the fulcrum **30**, the lever **26** being apertured at **33** and offset outwardly from the long leg **32** of the lever **14** to permit the line of action of the spring **23** to be located in the proper position.

Preferably the levers are interlocked to swing relative to each other in a single plane. Herein, such interlocking is effected by notches **34** formed in opposite sides of the lever **26** at the fulcrum **30** and receiving lugs **35** formed on the end of the lever **14** opposite the follower **13**.

The short leg **28** of the lever **26** is bent intermediate its ends as indicated at **36** so as to be spaced angularly from the leg **29**. A threaded hole **37** in the latter receives a screw **38** which extends through a hole in the leg **28** with its head abutting against the leg **28** thereby forming the fastening device **27**. The force of the spring **23** urges the legs **28** and **29** apart so that by turning the screw **38** back and forth, the angular relation of the two levers **14** and **26** may be varied as desired in order to vary the spacing of the follower **13** from the axis of the cam **11** as indicated by the positions of the follower shown in full and in phantom in Fig. 3. In this way, manufacturing variations in the location of the cam axis and the switch lever in the final assembly of the parts may be compensated for simply by turning the screw so as to bring the follower into the proper position for operation by the rises and falls of the cam at proper times.

I claim as my invention:

1. A switch comprising a base, switch elements thereon, a lever on said base swingable back and forth to actuate said switch elements, and a cam follower formed on one end of said lever, said lever comprising two L-shaped parts arranged in end to end abutment at the bends of the L's with legs of the two parts lying adjacent each other but separated from each other, means defining a fulcrum for said lever across the line of abutment of said parts and comprising laterally spaced lugs on one part seated in notches on the other part, and a screw coupling said adjacent legs together at a point spaced from said fulcrum and rotatable in opposite directions to move the legs toward and away from each other and thereby vary the position of said follower for a given position of said lever.

2. A switch comprising a base, switch elements thereon, a lever fulcrumed intermediate its ends on said base and movable back and forth to actuate said switch elements, and a cam follower formed on one end of said lever, said lever comprising two L-shaped parts arranged in end to end abutment at the bends of the L's to provide a fulcrum, two legs of said parts lying adjacent but separated from each other, and a screw coupling said legs together at a point spaced from said fulcrum and rotatable in opposite directions to move the legs toward and away from each other and thereby vary the position of said follower for a given position of said lever.

3. A switch comprising a base, switch elements thereon, a lever fulcrumed intermediate its ends on said base and movable back and forth to actuate said switch elements, and a cam follower formed on one end of said lever, said lever comprising two L-shaped parts arranged in end to end abutment at the bends of the L's to define a fulcrum permitting of relative angular adjustment of said parts, two legs of the respective parts projecting in opposite directions from said fulcrum with the other two legs lying adjacent but separated from each other, means coupling said other legs together at a point spaced from said fulcrum and movable in opposite directions to

swing said other legs toward and away from each other and thereby vary the angular position of said first legs.

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