

Jan. 18, 1938.

L. C. GEORGE

2,105,883

ELECTRICAL SWITCH

Filed Jan. 21, 1937

Fig. 1

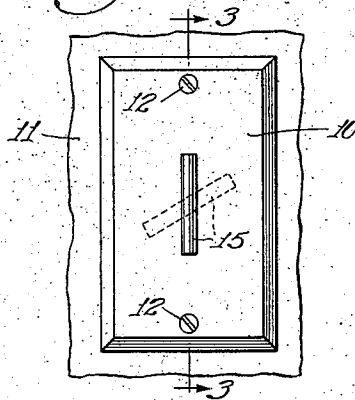


Fig. 2

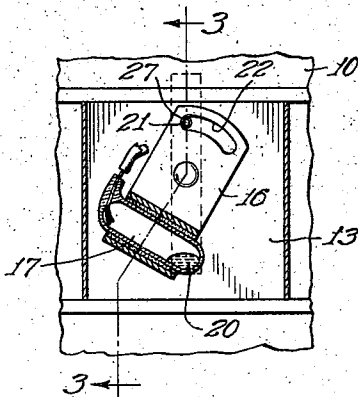


Fig. 3

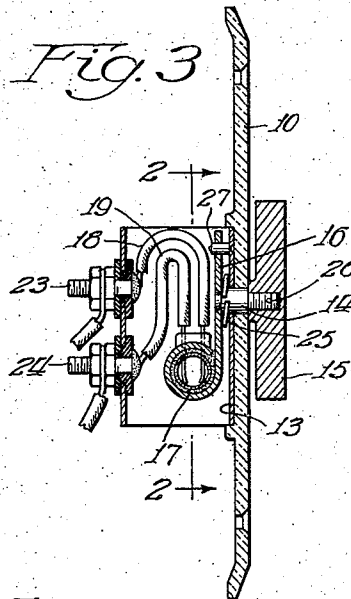
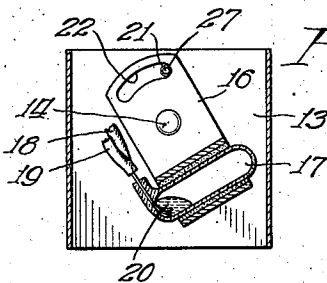


Fig. 4



Witness:
V. Sigander

Inventor:
Landon C. George
By: Hill and Hill

UNITED STATES PATENT OFFICE

2,105,883

ELECTRICAL SWITCH

Landon C. George, Chicago, Ill.

Application January 21, 1937, Serial No. 121,603

2 Claims. (Cl. 200—152)

The invention relates to electric switches and more particularly it relates to an electric switch comprising an actuating member having a fluid contact making and breaking member mounted thereon, said actuating member being operated by a handle suitably mounted on a support.

An object of the invention is to provide a manually operated electrical switch having operating parts which are so constructed and arranged as to eliminate noises in the operation thereof.

Another object of the invention is to provide a manually operated electrical switch which is inexpensive to manufacture, durable, satisfactory for its intended purpose and comprises simple operating parts which may be readily assembled or disassembled.

To this end my invention consists in the novel construction, arrangement and combination of parts herein shown and described, and more particularly pointed out in the claims.

Referring now to the drawing wherein like reference characters indicate like or corresponding parts, in which:

Fig. 1 is a front elevational view of the device as it appears when mounted upon an outlet box or the wall of a cabinet or the like;

Fig. 2 is a sectional view along the line 2—2 of Fig. 3, showing the switch in circuit breaking position;

Fig. 3 is a sectional view along the line 3—3 of Fig. 2; and

Fig. 4 is a view similar to Fig. 2 with the switch in position to close the circuit.

Referring now more particularly to the drawing, the device comprises a mounting plate or face plate 10 shown as secured to an ordinary outlet box 11 as by means of screws or the like 12. A housing 13 open at both ends is mounted on and has one side wall fastened to the inner face of the plate 10 by any suitable means such as welding or the like. A shaft 14, extending through the plate 10 and the adjacent wall of the housing 13, is rotatable by a handle or thumb piece 15 to manipulate a bar 16 mounted on and rotatable with the shaft. A fluid contactor switch is mounted on the bar 16 and tiltable by the rotation of the bar resulting from the manipulation of the thumb piece 15.

The contactor is of the usual type comprising a sealed container or tube 17 having a pair of conductors 18 and 19 terminating in spaced relation to provide electrodes at one end thereof and a body of current conducting liquid 20, such as mercury, disposed therein to bridge or flow away

from the electrodes thereby making or breaking an electric circuit therethrough.

The other ends of the conductors 18 and 19 are respectively connected with binding posts 23 and 24 suitably mounted on the housing 13. In the operation of the switch when it is desired to make an electric circuit therethrough, the thumb piece or operating handle 15 is rotated from its full line position to its dotted line position of Fig. 1, thereby tilting the contactor tube 17 from the position shown in Fig. 2 to that shown in Fig. 4, wherein the contacting fluid 20 bridges the electrodes 18 and 19.

Conversely, when it is desired to open or break the circuit therethrough, the handle 15 is turned to its full line position wherein the tube 17 is positioned as shown in Fig. 2 and the conducting fluid 20 flows away from the electrodes.

The permissible rotation or oscillation of the tube 17 is controlled by a pin 21 mounted on the plate 10 and projecting through an arcuate slot 22 provided in the bar 16. The pin 21 occupies one end of the slot 22 when the handle 15 is in its full line position and is in the other end of the slot when the handle is moved to the dotted line position corresponding to the circuit closing position of the tube 17. A sleeve 27 of rubber or similar cushioning material mounted on the pin 21 prevents direct contact of the pin with the walls of the slot 22.

A resilient friction member 25, shown in the drawing as a relatively thick split ring or washer oppositely bent at its ends and encircling the shaft 14, is positioned between and has bearing contact with the bar 16 and the contiguous side wall of the housing 13. The handle 15 is rigidly fastened to the shaft 14 by a pin 26 and the spring member 25 exerts a constant pull on the shaft 14 tending to keep the hub portion of the handle in pressure contact with the outside face of the plate 10. The frictional contact of the handle 15 with the plate 10 as well as the contact of the member 25 with the adjacent face of the plate 10 and of the bar 16 tends to retard rotation of the shaft 14 in either direction. The cushion sleeve 27 on the pin 21 and the described frictional resistance of the shaft to rotation cooperate to permit actuation of the device without any noticeable sound.

The device, therefore, is noiseless in operation, simple in construction, and is adapted for use for any purpose wherein it is desirable that a switch be operated in a noiseless manner.

Having thus described my invention, it is obvious that various immaterial modifications may

be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, construction, arrangement and combination of parts herein shown and described or uses mentioned.

What I claim as new and desire to secure by Letters Patent is:

1. In an electric switch mechanism, a wall plate, a shaft rotatably mounted on the wall plate, a liquid flow switch, a plate fixedly mounted on said shaft in proximity to the wall plate and providing a support for said switch, said supporting member providing an arcuate slot, a pin projecting from said wall plate into said slot to provide a stop limiting the oscillation of said supporting member, said switch being respectively in open and closed positions when said pin is positioned at opposite ends of said slot, a sleeve of cushioning material mounted on said pin, and resilient means positioned between and providing a yieldable separator for said plates adapted to hold

the supporting plate against rotation unless actuated by manual rotation of the shaft.

2. In an electric switch mechanism, a wall plate, a shaft rotatably mounted on the wall plate, a liquid flow switch, a plate fixedly mounted on said shaft in proximity to the wall plate and providing a support for said switch, said supporting member providing an arcuate slot, a pin projecting from said wall plate into said slot to provide a stop limiting the oscillation of said supporting member, said switch being respectively in open and closed positions when said pin is positioned at opposite ends of said slot, a sleeve of cushioning material mounted on said pin, and friction means comprising a relatively thick split ring having its ends oppositely inclined positioned between and providing a yieldable separator, said plates adapted to hold the supporting plate against rotation unless actuated by manual rotation of the shaft.

LANDON C. GEORGE.