No. 743,348. PATENTED NOV. 3, 1903.

G. B. THOMAS.

ELECTRIC SWITCH.

APPLICATION FILED JUNE 8, 1903.

NO MODEL.

Fig. 1.

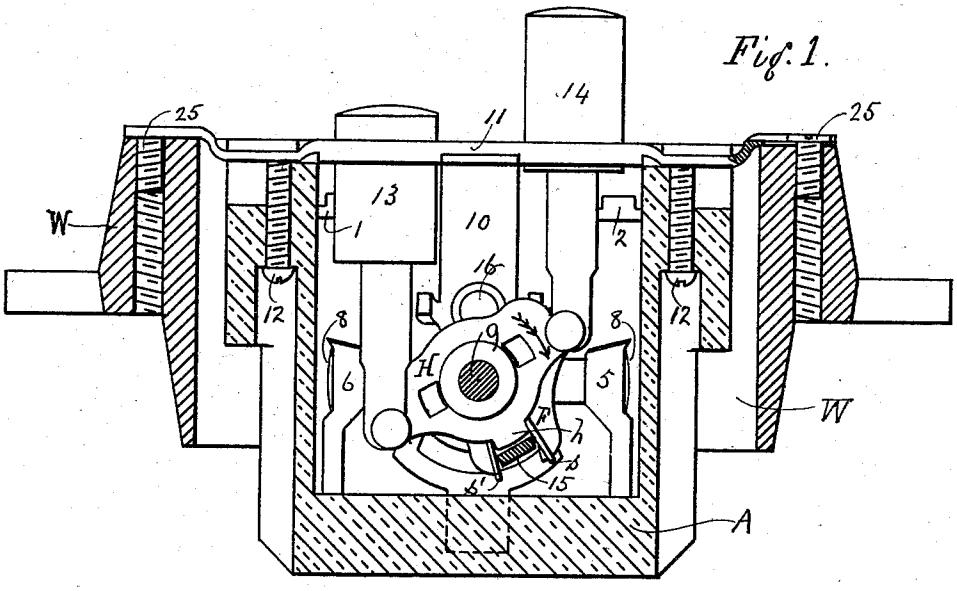


Fig. 2

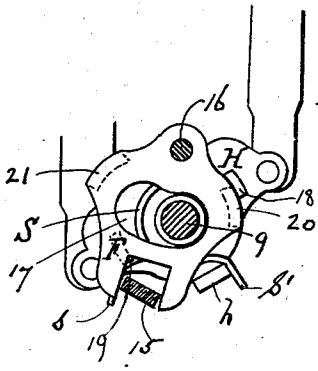


Fig. 3.

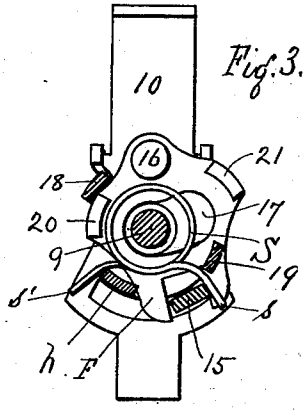


Fig. 5.

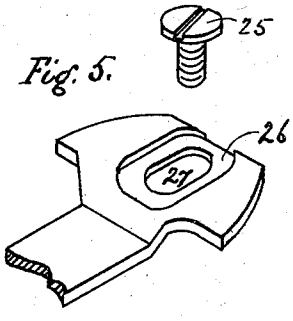
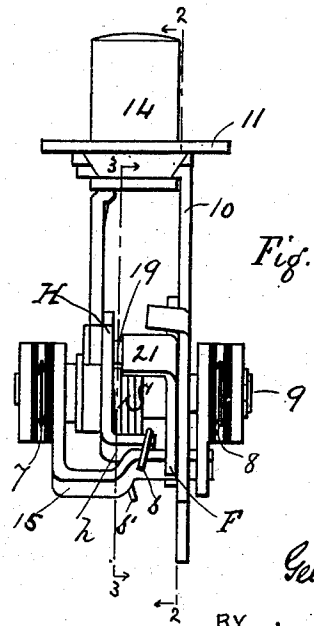


Fig. 4.



WITNESSES

Walter Abbe

F. W. Wright

INVENTOR

George B. Thomas

BY

Howson and Howson

ATTORNEYS

No. 743,348. Patented November 3, 1903.

UNITED STATES PATENT OFFICE.

GEORGE B. THOMAS, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE PERKINS ELECTRIC SWITCH MANUFACTURING COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 743,348, dated November 3, 1903.

Application filed June 8, 1903. Serial No. 160,634. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. THOMAS, a citizen of the United States of America, and a resident of Bridgeport, in the county of Fairfield, State of Connecticut, have invented Improvements in Electric Switches, of which the following is a specification.

My invention relates to improvements in the construction of electric switches, more particularly of the two-push-button type.

In the accompanying drawings, Figure 1 is a vertical section of a two-push-button switch embodying my invention. Fig. 2 is a detailed sectional view on the line 2 2, Fig. 4, showing the locking-lever partially thrown over. Fig. 3 is a corresponding sectional view on the line 3 3, Fig. 4. Fig. 4 is a side view of the operative parts of the switch. Fig. 5 is a perspective view of a detail.

A is the insulating-casing, of porcelain or other suitable material, carrying within it the usual binding-posts 1 2 and spring contact-clips 5 6, with which blades 7 8, secured on but insulated from the rock-shaft 9, make and break contact in the usual way.

The operative parts of the switch are carried by an upright post 10, mounted at its lower end in a suitable recess in the bottom of the casing A and secured at its upper end to a cross-plate 11, to which the casing A is fixed by screws 12. The cross-plate also has openings for the passage of the push-buttons 13 14 and has its opposite ends extended beyond the casing A for attachment to the wall box or frame W, as hereinafter described.

The stems of the push-buttons 13 14 are pivotally connected to a rocking catch-lever H, pivoted to turn freely upon the rock-shaft 9, which carries at its opposite ends the two contact-blades 7 and 8, insulated from the shaft and from each other.

The lever H has a laterally-projecting stud *h*, on the opposite sides of which bear the legs *s* and *s'* of the spring S, coiled about the shaft 9, Fig. 3. The legs of this same spring are also adapted to bear against the opposite sides of a cross-arm 15, Fig. 4, which mechanically connects but is insulated from the two contact-blades 7 and 8. This cross-arm 15 is embraced by the forked lower end of a swinging plate F, pivoted to the post 10 at 16, Figs. 1 and 3, above the rock-shaft 9, the plate F having a curved slot 17, Figs. 2 and 3, for the free passage of the said shaft 9. The slot 17 is of such a length that the shaft acts as a stop for the plate F in its movements to the right and to the left. On the latch-lever H are two lugs 18 and 19, facing toward the plate F, while on the latter are two lugs 20 and 21, facing toward the lever H, Figs. 2 and 3. The lugs on one plate overlap the lugs on the other, as shown in Fig. 4, so that when the plate F has swung over on its pivot 16 to the right in Fig. 3 (the left in Fig. 2) the lug 21 on that plate will pass over the lug 19 on the then depressed end of the lever H, and when the finger-pressure is removed from the push-button 13, Fig. 1, to let the plate H recover to its position of rest the lug 19 on the plate H will pass behind and will hold on the lug 21 on the lever H. When thereafter the push-button 14 is depressed to open the switch and the lever H is consequently turned in the direction of the arrow, Fig. 1, the lug *h* will act on the leg *s'* of the spring S and tension it to cause the leg *s* to act with increasing force against the bar 15, but without being able to move the bar 15 or plate F or blades 7 and 8 until the rising lug 19, Figs. 2 and 3, has passed beyond the upper side of the lug 21, whereupon the plate F will be instantly swung over on its pivot 16 to the left, Fig. 3, carrying the blades 7 and 8 out of contact with the clips 5 6 and breaking the circuit. The lug 20 will in this movement pass over the upper side of the lug 18, Fig. 3, while the lever H is depressed at the right hand beyond its normal position of rest, and then when pressure is removed from the push-button 14 the right end of the lever H will rise again sufficiently to cause the lug 18 to latch behind the lug 20 on the swinging plate F.

As I have before described, the ends of the cross-plate 11 extend beyond the insulating-casing A to leave ears for attachment to any suitable construction of wall-box or wall-frame. In Fig. 1 I have shown an iron wall-frame W, to the upper edge of which the switch is secured by screws 25. In order that a flat surface may be presented for the appli-

cation of the cover-plate, (not shown,) I use flat-headed screws 25, Figs. 1 and 5, and I mill out a flat-bottomed depression 26 in the face of each ear on the plate 11 around the slot 27, through which the screw passes. I make the screw flat under the head, and I make the slot and depression wider, as well as longer, than the diameter of the screw-shank and head, respectively, in order that the switch may be self-adjusting in all directions to limited variations in wall-boxes or wall-frames.

I claim as my invention—

1. In a push-button switch, the combination of a frame, a pivoted latch-lever having lugs, and a rock-shaft carrying insulated contact-blades with a plate pivoted to the frame and having lugs to engage the lugs on the latch-lever, said plate having a slot through which the rock-shaft passes, and a spring adapted to be tensioned by the latch-lever to act on the plate, when the lugs release the latter, all substantially as described.

2. A push-button switch having ears for attachment to a wall box or frame, said ears having slots and flat-bottomed depressions around the faces of the slots larger than the corresponding parts of the securing-screws, in combination with securing-screws flat under the head, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE B. THOMAS.

Witnesses:
G. W. GOODRIDGE,
H. G. WALES.