

Sept. 25, 1923.

1,468,985

F. G. WHITTINGTON

ELECTRIC SWITCH

Filed March 6, 1922

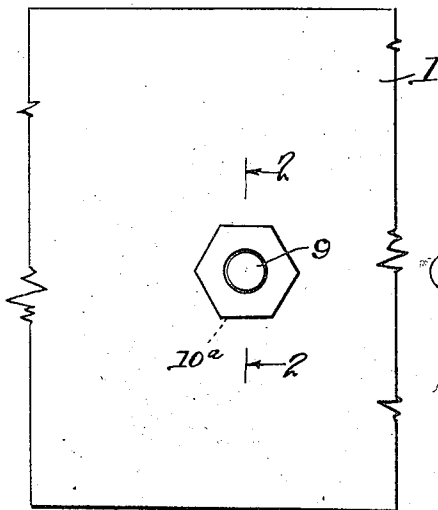


Fig. 1.

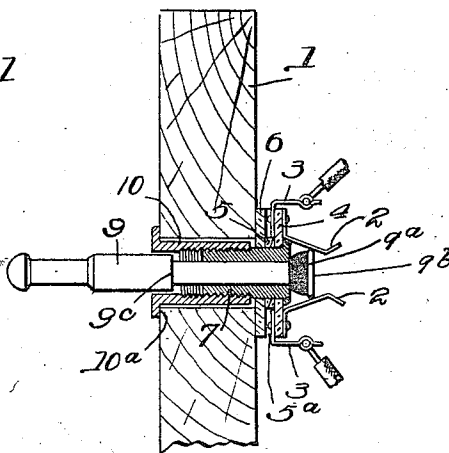


Fig. 2.

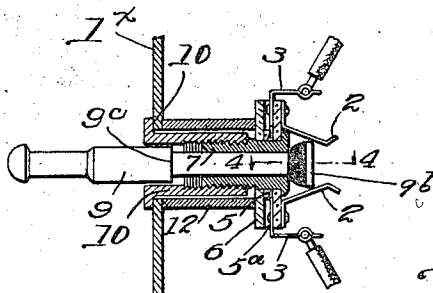


Fig. 3.

Fig. 4.

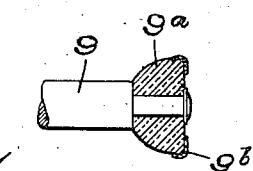
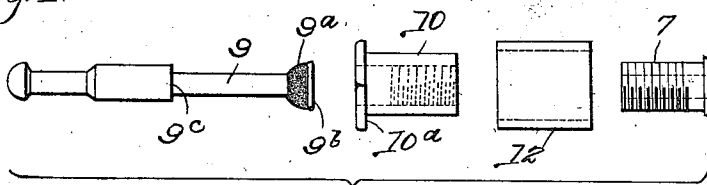


Fig. 5.

Witness:
C. C. Shultz

Inventor:
Frederick G. Whittington
by Burton Burton
his attys.

UNITED STATES PATENT OFFICE.

FREDERIK G. WHITTINGTON, OF EVANSTON, ILLINOIS, ASSIGNOR TO STEWART-WARNER SPEEDOMETER CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF VIRGINIA.

ELECTRIC SWITCH.

Application filed March 6, 1922. Serial No. 541,275.

To all whom it may concern:

Be it known that I, FREDERIK G. WHITTINGTON, a citizen of the United States, residing in Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved construction of an electric switch, particularly with respect to its adaptation for mounting upon instrument boards or the like, in an automobile. It consists in the elements and features of construction shown and described as indicated in the claims.

In the drawings:—

Figure 1 is an elevation of a portion of the board showing the switch pull button.

Figure 2 is a section at the line, 2—2, on Figure 1, showing mounting on a board of substantial thickness.

Figure 3 is a view similar to Figure 2, showing mounting on a relatively thin metal plate without board.

Figure 4 is a sectional plan view of a portion of the plunger, section being axial with respect to the head.

Figure 5 is a dissected plan view of all parts of the device.

In the drawings 1 represents the instrument board or dash board upon which the switch embodying this invention is mounted. The switch itself comprises two opposed and spaced-apart contacts, 2, 2, which with their respectively co-operating wire attachment pieces, 3, 3, are secured to an insulating support, 4, consisting of a layer of fiber or like suitable material, to the opposite sides of which the parts, 2 and 3, are secured by rivets extending through said insulating member, 4. An additional insulating layer, 5, below the layer, 4, has its ends notched at 5^a, to accommodate the riveted ends of the wire attachment pieces, 3, and a third layer, 6, serves further to insure insulation of the said wire attachment pieces by covering their ends lodged in the notches, 5^a.

Through all three of the insulating layers, 4, 5 and 6, there is inserted a sleeve, 7 flanged at one end for stopping upon the insulating layer, 4, and threaded from the other end back into the shoulder of said flange. In this sleeve there is mounted for

reciprocation a plunger, 9, having at its end which stands between the contacts, 2, 2, a knob or head, 9^a, of insulating material which is encompassed at the end by a metal ring, 9^b, for making contact with the contacts, 2, 2, at or back of the point of nearest approach of these contacts which are mounted inclined toward each other and at their ends reflexed outward so as to form angles at the point of nearest approach. The parts are dimensioned so that when the knob, 9^a, is retracted against the end of the sleeve, 7, the metal ring, 9^b, is in contact with the contact pieces, 2, 2, back of their points of nearest approach, and when the plunger is thrust in toward sleeve until its shoulder, 9^c, encounters the inner end of the latter, the insulating head, 9^a, of the plunger occupies the position between the angles or points of nearest approach of the contacts, 2, 2, and the circuit is thereby open.

For adapting this switch to be mounted upon boards of different thickness, and to readily accommodate itself to different thicknesses, there is provided a second sleeve, 10, interiorly threaded at one end for screwing onto the threaded end of the sleeve, 7, and flanged at the other end for stopping against the surface of the board on which the device is mounted, so that by screwing the two sleeves together, the board is clamped between the insulating layers, 4, 5 and 6, on one side, and the shoulder, of the flange, 10^a, on the other side, and the device can be clamped tightly upon boards varying in thickness substantially the full extent of the threaded portion of the engaged sleeves.

For mounting this device upon a thin plate, or on a board whose thickness is less than the length of the sleeve, 10, there is provided a third sleeve, 12, fitting outside the sleeve, 10, and substantially the same length as that sleeve from the under side or shoulder of its flanged end; and this sleeve amounts to a continuation or advancement of the shoulder of the flange, 10^a, down toward the interiorly threaded end of said sleeve, 10;—that is to say, the end of the sleeve, 12, serves for binding upon the surface of the thin board or plate, performing the function of the flange, 10^a, at any degree of proximity to the opposed clamping member consisting of the insulating layers, 4, 5 and 6.

This sleeve, 12, may also be applied as

shown in Figure 3 at the back side of the metal plate, 1*, spacing the part, 6, back from said plate, the flange, 10, then binding on the forward face of the plate and clamping the device securely thereto upon screwing the threaded sleeves together.

I claim:—

1. An electric switch device for mounting on an instrument board or the like, comprising in combination with a pair of contacts, an insulating support on which the contacts are mounted with an intervening gap, and a plunger carrying an insulated conductor mounted for reciprocation to enter and withdraw from the gap for closing and opening the circuit; two sleeves respectively threaded interiorly and exteriorly for screwing together, one of said sleeves being longitudinally stopped in one direction on said insulating support axially in alignment with the gap between the contacts, the other sleeve being flanged for stopping it in the opposite direction, and a third sleeve fitting outside the outermost of the screwed-to-

gether sleeves for supplementing or replacing the thickness of a board thinner than the length of the outermost of the two sleeves to adapt them for clamping upon such thinner board.

2. In an electric switch having a plunger for opening and closing the circuit, a pair of sleeves telescopically screwed together affording bearing for the plunger, said sleeves having each a flange for clamping a supporting board or the like by screwing one of them into and out of the other, a third sleeve adapted to telescope outside the other two and to be stopped at one end by the flange of the outer of them for stopping at the other end against and clamping the board, whereby the device may clamp a board thinner than the length of the two outer screwed-together sleeves.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 28th day of February, 1922.

FREDERIK G. WHITTINGTON.