Aug. 16, 1927. 1,638,905

C. AALBORG

ELECTRIC SWITCH

Filed Oct. 25, 1921

Fig. 1.

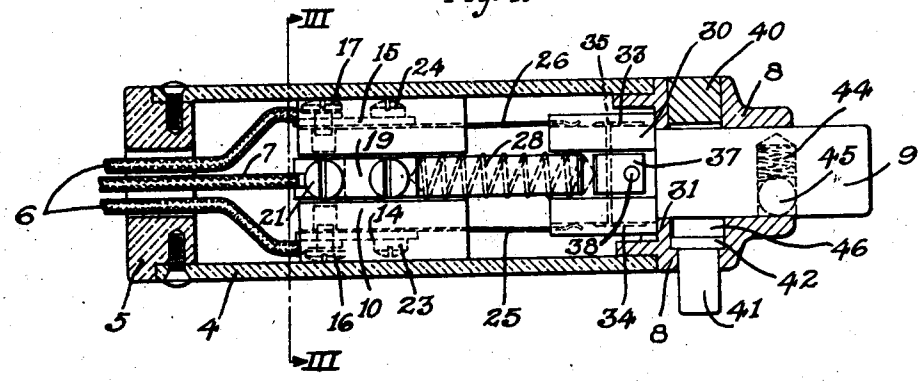


Fig. 2.

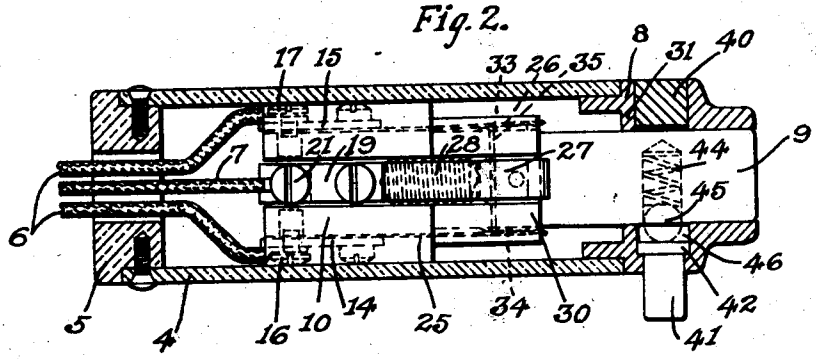
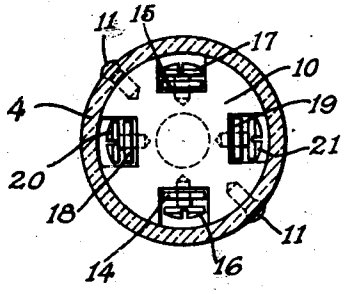


Fig. 3.



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Patented Aug. 16, 1927. 1,638,905

UNITED STATES PATENT OFFICE.

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ELECTRIC SWITCH.

Application filed October 25, 1921. Serial No. 510,351.

My invention relates to electric switches and particularly to those of the push-button type.

My invention has for its object the provision of a switch of the push-button type that shall be of simple and compact form and which may be conveniently installed and operated.

My switch is particularly adapted for use in connection with the testing of wattmeters and is shown as designed for completing a circuit through a pair of main conductors of a polyphase circuit and two voltage conductors of a wattmeter although it may be employed in permanent installations.

As shown in the accompanying drawing, Figure 1 is a view of my switch, in longitudinal section, showing the position of the parts when the circuit is interrupted.

Fig. 2 is a view showing the movable parts of the switch in closed position, and

Fig. 3 is a view taken on the line III—III of Fig. 1.

The switch comprises a casing member 4, of tubular form, that is closed at its one end by a plug member 5 through which two pairs of conductors 6 and 7 extend, only one of the conductors 7 being shown. At its other end, the casing 4 is provided with a cap member 8 through which a plunger 9 extends. A block 10, of insulating material, is secured in the casing by a pair of screws 11. The block 10 is provided with four grooves extending longitudinally thereof and of such depth that they may accommodate the terminal members, hereinafter described, in spaced relation to the inner wall of the tubular casing 4.

The ends of the conductors 6 are secured to a pair of terminal blocks 14 and 15 by means of screws 16 and 17, respectively, and the conductors 7 are secured to terminal blocks 18 and 19 by means of screws 20 and 21, respectively.

The terminal blocks 14 and 15, at their outer ends, together with screws 23 and 24, serve to clamp a pair of contact fingers 25 and 26, respectively, into grooves of the block 10, and the terminal blocks 18 and 19, in like manner, maintain the contact fingers 27 in place in the other pair of grooves.

The block 10 is provided with a recess in which one end of a compression spring 28 is seated. The other end of the spring 28 extends into a recess that is centrally located in the inner end of the plunger 9. The spring thus serves to normally maintain the shouldered end 30 of the plunger in engagement with the flanged portion 31 of the cap member 8, as shown in Fig. 1. The enlarged end portion 30 of the plunger 9 is provided with four grooves in its periphery similar to those in the terminal blocks 10. Two of these grooves are provided with contact plates 33 and 34 that are secured in place by means of a rivet or pin member 35 that extends through the plunger 9. The contact plates 33 and 34, together with the pin 35, constitute a bridging member for the fingers 25 and 26.

The other two grooves in the plunger 9 are each provided with a contact plate 37, and these contact plates are connected by a pin 38 that extends through the plunger 9. The plates 37 and pin 38 constitute another bridging member. The fingers 25 and 26 extend into the grooves which carry the contact plates 33 and 34 and are bridged by such plates and the pin 35 whenever the plunger is depressed. The contact fingers 27 have sliding engagement with the other pair of grooves and are bridged by the plates 37 and the pin 38 when the plunger 9 is depressed.

It will be seen from the foregoing that, whenever the plunger 9 is depressed against the spring 28, the circuit through the conconductors 6 is completed, as is also the circuit of the conductors 7.

The cap member 8 is provided with an opening that is closed by a removable plug 40 and at its opposite side it is provided with an opening through which a push button 41 extends, the push button being provided with an enlarged portion 42 of smaller diameter than the plug 40, so that it may be placed in the assembled position, through the opening before the plug 40 is inserted. The plunger 9 is provided with a recess in which a compression spring 44 and a ball 45 are carried and, when the plunger is depressed, the ball 45 will be forced, by the spring 44, into a recess 46 of the cap member 8, thus locking the plunger 9 in depressed, or closed, position and holding the circuit closed. The push button 41 may be depressed to force the ball 45 out of engagement with the shoulder 46 and thus permit the switch to be moved to open position, by the spring 28.

From the foregoing, it will be observed that the switch may be quickly and conveniently operated and it is of simple design.

If desired, the switch may be employed as an interrupter for a single circuit instead of a plurality of circuits, and various other changes may be made therein without departing from the spirit of the invention as defined in the accompanying claim.

I claim as my invention:

In an electric switch, the combination with an insulating terminal-supporting block provided, at its opposite sides, with stationary contact members, of an insulating plunger provided, at its opposite sides, with a pair of movable contact members in alinement with the said stationary contact members and adapted to co-operate therewith, a spring disposed between and engaging the adjacent ends of the block and plunger, and a conducting member extending through the plunger and insulated from the said spring for securing the movable contact members to the plunger.

In testimony whereof, I have hereunto subscribed my name this 21st day of October, 1921.

CHRISTIAN AALBORG.