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J. ALTAMURA

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PUSH BUTTON SWITCH

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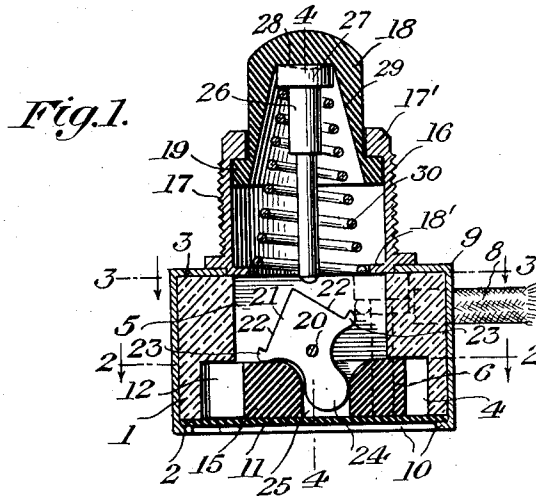


Fig. 2.

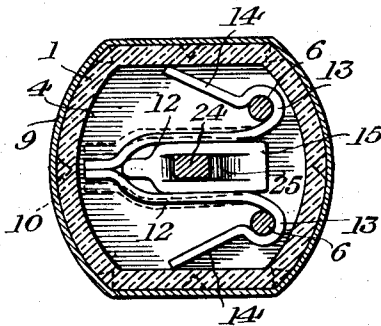


Fig. 3.

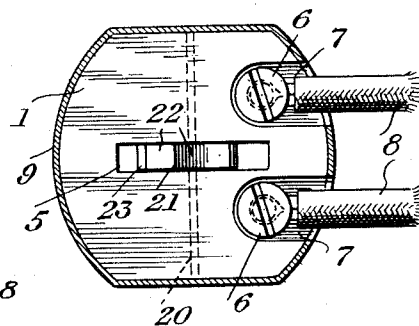
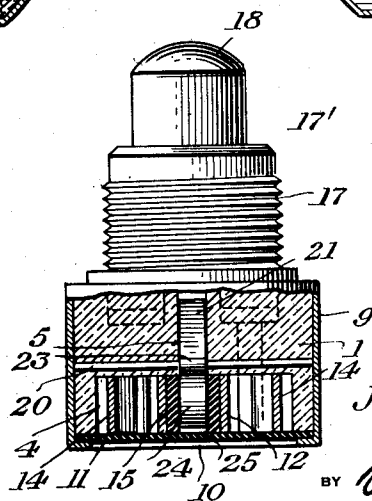


Fig. 4.



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UNITED STATES PATENT OFFICE

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PUSH BUTTON SWITCH

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1 Claim. (Cl. 200-153)

My invention relates to switches and more particularly to improvements in electrical switches of the push button type.

The important object of my invention is to provide a push button switch of relatively few parts which is efficient in operation, economical to manufacture and durable in character.

Other and subordinate objects will appear when the following description and claim are read in conjunction with the drawing accompanying and forming a part of this specification.

In said drawing:

Fig. 1 is a vertical sectional view of a switch constructed according to my invention.

Fig. 2 is a transverse section taken on the line 2-2 of Fig. 1.

Fig. 3 is a similar view taken on the line 3-3 of Fig. 1; and

Fig. 4 is a view in vertical section taken on the line 4-4 of Fig. 1.

Reference being had to the drawing by numeral, 1 designates the base proper of the switch which may be formed of any suitable insulating material, such as porcelain, and having opposed flat faces 2 and 3. A chamber 4 is provided in the face 2 of the base 1 and a centrally located slot 5 in said base opens into said chamber and the other face of said base, respectively. A pair of terminal posts 6 extend thru said base upon opposite sides of the slot 5 and into the chamber 4. Preferably the posts 6 have the form of headed screws and the base 1 is provided with countersinks 7 for receiving the heads of said posts and opening onto one side of the base 1 for the attachment of leads 8 to said posts in the usual manner. Surrounding the base 1 is a metallic casing 9 having on the side of the chambered face of the base 1 inwardly projecting lugs 10 adapted to engage a plate 11 to clamp the latter between said lugs and the base 1 in closing relation to the chamber 4.

Within the chamber 4 is a pair of opposed resilient contacts 12 secured to the posts 7, respectively, as by loops 13, and having portions 14 bearing against the side walls of the chamber 4, whereby said contacts are yieldingly urged into contacting relation and are adapted for yielding separative movement. Intermediate said contacts 14 is a spreader member 15 for separating said contacts and slidable in a fixed plane in opposite directions into effective and ineffective positions, respectively. Extending from the casing 9, on the side of the base opposite the before-mentioned chambered side, is a circular sleeve 16 opening at its inner end into the slot 5 and hav-

ing at its outer and inner ends inwardly projecting flanges 17 and 18. The sleeve 16 may be formed as a separate part of the casing secured thereto in any suitable manner and is provided with exterior threads 17 for attachment to the usual socket, not shown. A push button 18 is mounted in the sleeve 16 to project outwardly therefrom, said button having an end flange 19 for cooperation with the flange 17 to limit its outward movement. As will be clear, the axis of movement of the push button 18, because of the location of the sleeve 16, is at a right angle to the plane of movement of the spreader 15.

Means are provided intermediate said button 18 and spreader member 15 for moving the latter 15 in either direction by movement of the former in one direction, i. e., inwardly, and including the following. Pivoted in the slot 5, as at 20, is a rocking cam member 21 having oppositely inclined cam faces 22 terminating in outstanding lugs 23 and a tail piece 24 projecting into a slot 25 in the spreader member 15. Intermediate the cam member 21 and button 18 is a single cam operating connection in the form of a plunger 26 having at one end a head portion 27 seating 25 against the end wall 28 of a frusto-conical chamber 29 formed in said button 18. A convolute spring 30 also of frusto-conical form surrounds said plunger 26, the opposite ends of said spring bearing against said head 27 and the base 30 1, whereby said plunger is yieldingly held in its seated position and said button 18 tensioned against movement inwardly.

In the operation of the device, it is obvious that, the plunger 26 being mounted for yielding lateral 35 motion, an inward or downward motion of the push button toward the cam member 21, will bring the inner or free end of the plunger into surrounding contact with the adjacent inclined face of the rocking member until the corresponding 40 ing detent or lug 23 is reached, whereupon the force of the plunger will rock the cam member to the opposite position, thereby sliding the spreader member 15 into contact making or breaking 45 position as the case may be. Release of pressure on the push button enables the coil spring 30 to return the push button to uppermost or outermost position relative to the cam member 21 so that on the next downward or inward movement 50 of the push button, the plunger 26 will act on the other inclined face of the cam member and throw the latter into the opposite position.

What is claimed as new is:

A switch comprising a body having a chamber opening through the bottom thereof and a slot 55

communicating with the chamber and opening through the top, a plate closing the bottom of the chamber, terminal posts extending into the chamber, looped resilient contact members having the looped portions thereof disposed about the posts and substantially parallel portions extending therefrom, one of the end portions of the looped contact members being engageable with each other and the opposite ends thereof bearing against the walls of the chamber to yieldably hold the engageable portions in normal contact, an insulating spreader slidable on the plate between

the substantially parallel portions of the contact members for disposal between the engageable portions to separate the latter, means rockably mounted in the slot and extending into the spreader for aliding the same, cam means for actuating the rocking means, means covering the slot and including a spring pressed push button, and means movable with the button and depending therefrom for disposal in the slot for engagement with the cam means for actuating the rockably mounted means.

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