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3,242,298

MOUNTING MEANS FOR OPERATOR OF ELECTRIC SWITCH

Filed Sept. 17, 1962

Fig. 1

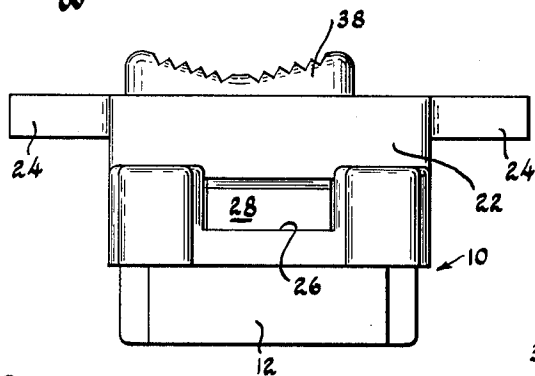


Fig. 7

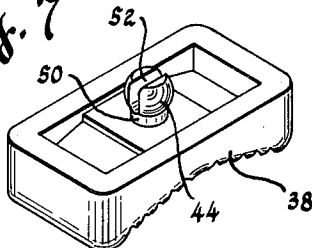


Fig. 2

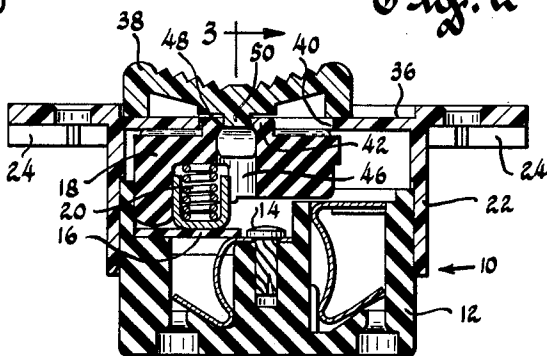


Fig. 3

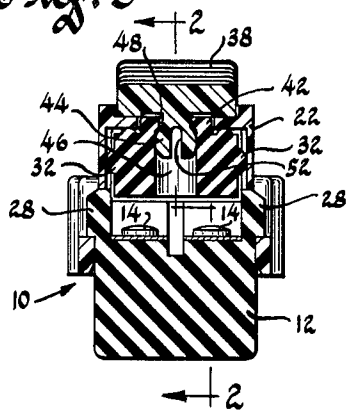


Fig. 4

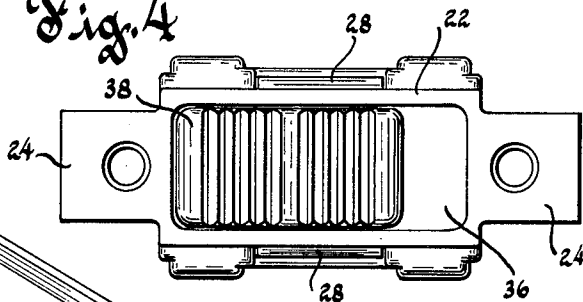


Fig. 6

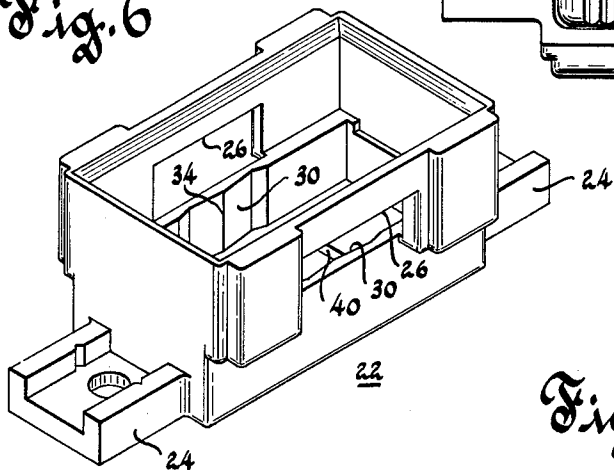
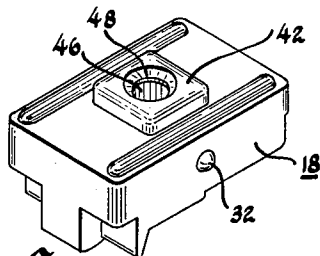


Fig. 5



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3,242,298 MOUNTING MEANS FOR OPERATOR OF ELECTRIC SWITCH

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This invention relates to manually operated electric switches and more particularly to slide operating mechanisms therefor.

It is an object of this invention to provide a manually operated electric switch with a slide button operator which may be assembled securely to the operating mechanism of the switch more quickly and easily than has heretofore been possible.

It is a more specific object of this invention to provide a slide button operator with an integral resilient member for snap connection of the slide button to the interior operating mechanism of the switch and retention of the slide button in operating position on the exterior of the switch housing.

Further objects of the invention will be apparent upon reference to the following description and claims.

While the device hereinafter described is adapted to fulfill the objects stated, it is to be understood that it is not intended that the invention be confined to the particular preferred embodiment disclosed, since it is susceptible of various modifications without departing from the scope of the claims.

Referring to the drawings:

FIGURE 1 is a side elevation view of the exterior of a slide button operated electrical switch which embodies the invention hereinafter described and claimed;

FIG. 2 is a sectional view taken on line 2—2 of FIG. 3;

FIG. 3 is a sectional view taken on line 3—3 of FIG. 2;

FIG. 4 is a top view of the exterior of the switch;

FIG. 5 is an isometric view of a disassembled member showing details of the operating mechanism;

FIG. 6 is an isometric view of another member removed from the assembly and inverted to show certain details; and

FIG. 7 is an isometric view of the underside of the switch operating member.

Referring to the drawings, the switch housing 10 includes a base 12, the construction of which is more completely described in Patent No. 2,942,087, issued to G. J. Meuer, dated June 21, 1960, for a trigger type switch employing a similar base member. Two stationary contacts 14 are mounted in base 12, and a movable bridging contact 16 is retained by and vertically slidable within a recess in the lower face of a horizontally reciprocable contact carrier 18. A compression spring 20 biases movable contact 16 downwardly to insure sufficient contact pressure.

A cover 22 made of resilient plastic material has integrally molded tabs 24 extending from its ends for the purpose of mounting the switch. Openings 26 in the walls of the cover 22 snap over rectangular projections 28 on the sides of base 12 to secure cover 22 to base 12.

The switch is made snap-acting by providing cam surfaces 30 on the interior of opposite resilient walls of the plastic cover 22 upon which projections 32 on the sides of carrier 18 ride. Each cam surface has a peaked center 34 and is integrally molded into the flexible cover wall so that when the carrier 18 is reciprocated, the projections 32 ride up on the center peak of the cams which flexes the cover cam carrying walls outwardly. As the projections 32 ride over the peaked cams, the outwardly flexed cover walls return to their normal position with a

snap thereby snapping the carrier to either an "on" or "off" position. This provides a relatively quick make or break of the circuit and gives a proper "feel" to the switch.

The top outer surface of cover 22 is formed with a shallow substantially rectangular depression 36 to slidably accommodate the slide button operator 38 and restrain the slide button from rotation or transverse movement. In the center of depression 36 there is an opening 40 through which passes a square projection 42 on the top of contact carrier 18. Opening 40 is elongated to accommodate the reciprocatory movement of projection 42.

Slide button operator 38 is molded of resilient plastic material and has a concave transversely grooved upper surface to provide an easily engaged surface for manual operation. The slide button 38 is fastened to the contact carrier 18 by coaction of a ball 44 on the bottom of the slide and a socket 46 formed by a circumferential ridge 48 inside the upper end of a cylindrical aperture passing vertically through carrier 18 and the center of projection 42. The ball 44 is formed on a short stem 50 extending from the lower surface of slide button 38. A slot 52 is molded in ball 44 to increase its flexibility and thereby facilitate the insertion of ball 44 into socket 46.

The parts of the present switch are designed to facilitate assembly. After positioning the interior members of the switch, cover 22 is pressed into place so that it snaps into engagement with base 12. The slide button operator 38 is then aligned with depression 36 and fastened to the switch by simply pressing ball 44 into socket 46. The slot 52 and the resiliency of the plastic material of the slide button 38 allow ball 44 to contact and pass through the constriction formed by ridge 48 and to expand with a snap in the interior of a socket 46 to hold slide button 38 in place. The slide button 38 may be removed from the assembly by reversing the process without damage to either ball 44 or socket 46.

I claim:

1. In combination in an electric switch, a housing, a stationary contact, a movable contact, a contact carrier interior to said housing for moving said movable contact into and out of engagement with said stationary contact, a slide button operator exterior to said housing and fastening to said contact carrier, an opening in said housing through which said contact carrier communicates with said slide button operator, and means for fastening said slide button operator to said contact carrier comprising an elastically compressible ball member mounted on said slide button operator, a socket in said contact carrier with a restricted opening, said ball member being insertable by elastic deformation through said restricted opening to expand in the interior of said socket to engage the interior of said restricted opening and be thereby retained in said socket.

2. The invention as described in claim 1, wherein said ball member has a slot to make said ball member more yieldable and more easily inserted into said socket.

3. In combination in an electric switch, a housing, a stationary contact, a movable contact, a contact carrier interior to said housing and reciprocatorily movable between operating positions for moving said movable contact into and out of engagement with said stationary contact, a slide button operator exterior to said housing and fastened to said contact carrier, an opening in said housing through which said contact carrier communicates with said slide button operator, and means for fastening said slide button operator to said contact carrier through said aperture comprising an elastically compressible member mounted on said slide button operator, a socket in said contact carrier with a restricted opening, said member being insertable in a direction transverse to the direction of movement of said carrier by elastic deformation through said restricted opening to expand in the interior

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of said socket to engage the interior of said restricted opening and be thereby retained in said socket.

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