Sept. 12, 1950 R. F. GATES 2,522,172

ELECTRIC SWITCH MOUNTING MEANS

Filed July 22, 1947

Fig. 1

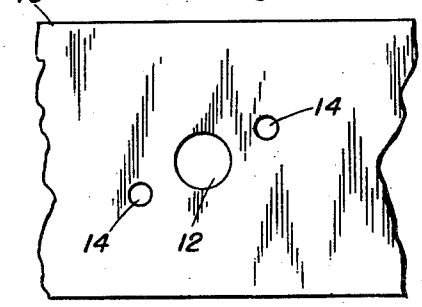
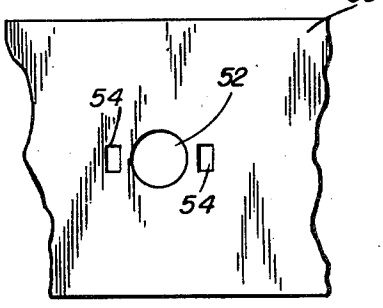


Fig. 4



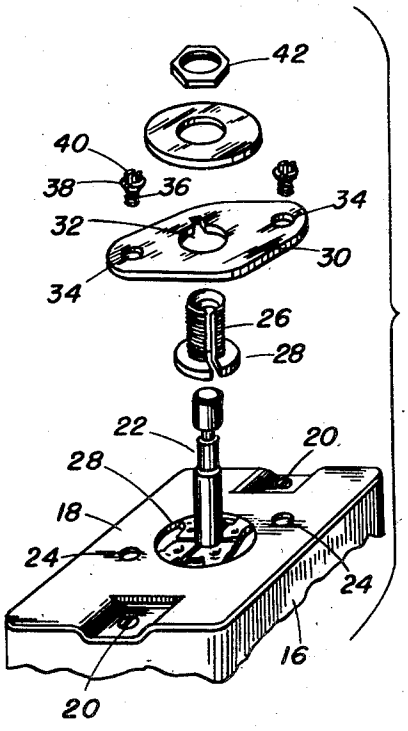


Fig. 2

Fig. 5

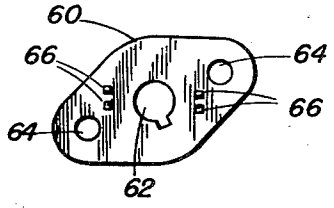
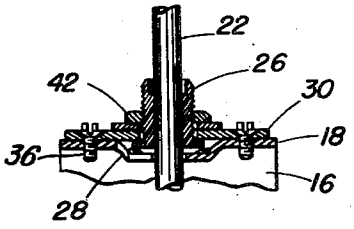


Fig. 3



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ELECTRIC SWITCH MOUNTING MEANS

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2 Claims. (Cl. 200—168)

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This invention relates to electric switch mounting means, particularly for mounting rotary electric switches behind panels such as the sub-panels of electric ranges.

It is an object of this invention to provide means to enable mounting of an electric switch behind a standard form of panel either by direct screw connection or by the "center hole" type of mounting, whereby a switch manufacturer need carry but one form of switch which can be adapted by the means of this invention for mounting by either method upon the standard panel.

Another object is to provide means enabling the mounting of the same form of switch contemplated above, behind old panels of different form from the standard form, so that said switch can be mounted either as a replacement for other different switches or in connection with other than the standard form of panel in new assemblies of electric ranges and the like.

Other objects and advantages of the invention will appear as the invention is described in the accompanying drawing.

In the drawing—

Fig. 1 is a plan view of a standard panel.

Fig. 2 is an exploded perspective view of the mounting parts and switch embodying the principles of the invention.

Fig. 3 is a section view through a switch mounted on a panel having provision for center hole mounting embodying the invention.

Fig. 4 is a plan view of another form of panel.

Fig. 5 is a plan view of another form of adapter plate for mounting the switch of Fig. 2 behind the panel of Fig. 4.

In the drawing the panel 10 is or may be a common or standard sub-panel as found in electric ranges. A standard form of such panel has a large circular aperture 12 around which are two small holes 14 located on an oblique axis through the center hole 12 in diametrically opposite positions.

A common form of electric range switch comprises a prismatic, rectangular insulating casing 16 molded of insulating material and having a rectangular sheet metal cover 18 secured thereon by screw bolts 20 or other suitable fastening means. Through the cover extends a conventional switch 22 whose rotation by a handle (not shown) operates the switch.

According to the invention the switch cover is provided with a pair of internally threaded holes 24 located and dimensioned as to size to register with the holes 14 in the sub-panel 10

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when the switch is placed behind the panel with spindle extending through the center hole 12. The switch may therefore be directly mounted behind the sub-panel by screws passing freely through holes 14 and threaded into holes 24.

In order to adapt the same switch as above described to a center-hole type mounting, an externally threaded nipple or hollow boss 26 having a circumferential flange 28 at one end is slid on the spindle 22. The flange will seat within a recess or a depressed portion 28 stamped into the switch cover 18 around the spindle. Such depression may conveniently be created in the formation of the indexing means for the switch mechanism; but the recess may be otherwise formed.

To secure the nipple 26 in that position, there is provided an adapter plate 30 stamped from sheet metal with a large central opening 32 for the nipple and two smaller openings 34 of size and position to register with the screw holes 24 in the switch cover. Screw bolts 36 pass through the opening 34 in the adapter plate and screw into the threaded holes 24 in the switch cover. Above the heads 38 of the screw bolts 36 are cylindrical extensions 40 coaxial with the shanks of the bolts. The extensions are slotted complementally with a slot in the head of the bolts to receive a screw driver whereby the screw bolts may be driven home. The underside of the heads 38 are beveled so that the head 38 is flush with the top surface of the adapter plate when the adapter plate is secured on the switch cover; but the extensions 40 will project above the cover, and they are of such diameter as to fit within the holes 14 in the panel 10 in order to prevent rotation of the whole switch when the switch is secured to the panel.

For securing the switch to the panel, a nut 42 is screwed on the nipple 26.

The principles of the invention can also be applied in providing means to enable the use of the same switch as herein described, to another old form of panel.

In Fig. 4 is illustrated a panel 50 having a central aperture 52 similar to aperture 12 of panel 10. On opposite sides of the aperture 52 are smaller openings or indentations 54. For adapting the switch 16 to mounting behind the panel 50, there is provided an adapter plate 60, like adapter plate 30 except that it has twin lugs 66 stuck up on opposite sides of the central opening so as to regsiter with and interlock in openings or indentations 54 in the panel 50 when the adapter plate is behind the panel 50. The adapt-

er plate can be secured to the switch cover by conventional screws (i. e. without extensions 40) passing through holes 64 and threaded into the cover holes 24 to hold the nipple 26 between the cover and adapter plates.

From the foregoing it will be understood that the provision of the adapter plate 30 and novel form of screws 36 in combination with the nipple 26 make it optionally possible to mount the switch by either center-hole type mounting or by direct screw mounting. The same form of screw bolt or nipple 26 can be used in either case because ordinarily there is sufficient clearance between the sub-panel 10 and the outside covering or panel of such apparatus as electric ranges and the like with which this invention may be used to accommodate the small extensions 40 of the screw heads.

Modifications within the scope of my invention will occur to those skilled in the art. Therefore I do not limit the invention to the details of form as illustrated.

I claim:

1. In combination, an electric switch comprising a casing, a plate extending across the top of the casing, a spindle extending up from the casing, a panel having a central aperture and spaced holes on opposite sides of said aperture, said top plate having screw threaded holes registering with said panel holes when said spindle is passed through said aperture, whereby said switch may be secured to said panel by screw bolts passed through said panel holes and threaded into said plate holes; an adapter plate having a central opening and holes on opposite sides of the opening to register with said top plate and panel holes, a nipple secured to said switch by said adapter plate and passing through said central opening, and screw bolts adapted to pass through the holes in said adapter plate and to thread into said top plate holes for securing said adapter plate to said top plate, and means extending from said screw bolts and fitting into said panel holes to prevent rotation of the switch relative to the panel, and means engaging said nipple to secure the switch to the panel.

2. In combination, an electric switch having a cover member, a spindle extending through said cover member, a panel having a central aperture and spaced holes on opposite sides of said aperture, said cover member having screw threaded holes registering with said panel holes when said spindle passes through said aperture, whereby said switch may be secured to said panel by screw bolts passed through said panel holes and threaded into said cover holes; an adapter member having a central opening and holes to register with said cover member and panel holes, a nipple secured to said switch by said adapter member and passing through said central opening, and screw bolts adapted to pass through said holes in said adapter member to thread into said cover holes for securing said adapter member on said cover member, and means extending from said screw bolts and fitting into said panel holes to prevent rotation of the switch relative to the panel, and means engaging said nipple to secure the switch to the panel.

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