June 17, 1947. E. G. JOHANSSON ET AL 2,422,553

SWITCH BOX MOUNTING

Original Filed Dec. 5, 1941

Fig. 1.

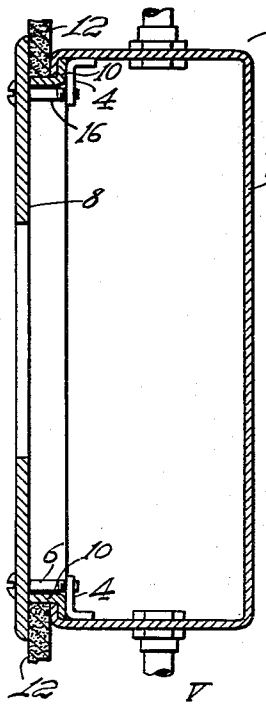


Fig. 2.

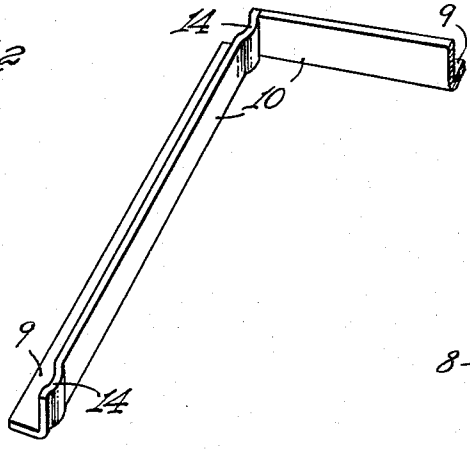


Fig. 3.

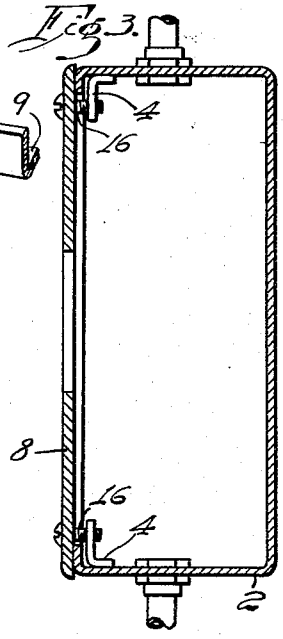


Fig. 4.

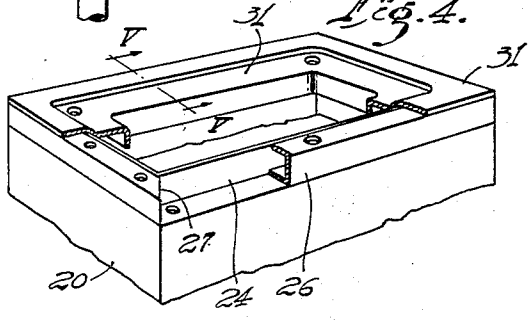


Fig. 5.

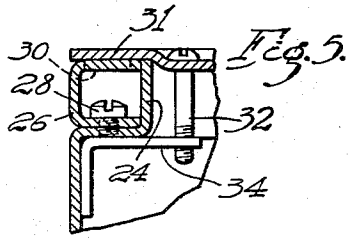


Fig. 6.

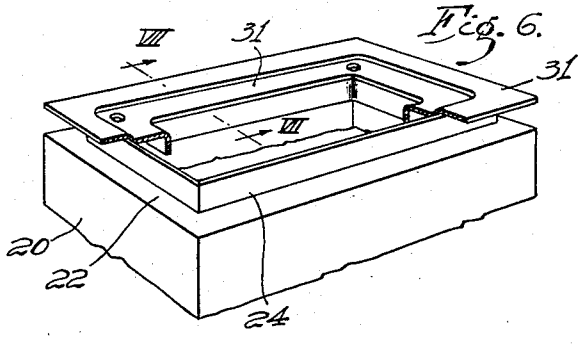
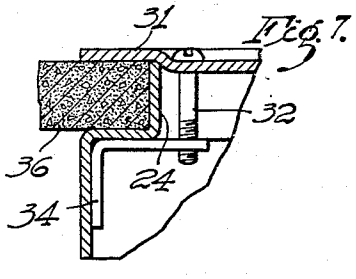


Fig. 7.



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SWITCH BOX MOUNTING

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Original application December 5, 1941, Serial No. 421,786. Divided and this application August 19, 1944, Serial No. 550,154

2 Claims. (Cl. 220—3.6)

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The present invention relates to equipment for housing electrical apparatus such as circuit breakers and the like, and has particular relation to a receptacle which is suitable for either flush or projection mounting with respect to a wall structure.

The present application is a division of our application Serial No. 421,786, filed December 5, 1941, entitled "Equipment for electrical installations," which resulted in Patent No. 2,372,083, issued March 20, 1945.

Installations of the type in question are frequently made with the supporting receptacle disposed within a wall structure so that its cover is flush with the outer wall surface, while at other times it is necessary to support the receptacle in a position projecting from the wall. The present invention provides a receptacle and cover assembly which is readily adaptable for either type of mounting.

It is accordingly an object of the invention to provide an electrical receptacle assembly which is readily adaptable for use in flush or projection mounted installations.

Other objects and advantages of the invention will appear from the following detailed description read in connection with the accompanying drawings, in which:

Fig. 1 is a view in vertical section of a receptacle for flush mounting in a wall;

Fig. 2 is a perspective view, partially broken away, of an adapter unit embodied in Fig. 1;

Fig. 3 is a view in vertical section of a receptacle adapted for projection mounting;

Fig. 4 is a perspective view, with parts broken away of a modified form of receptacle for projection mounting;

Fig. 5 is a view in section taken on the line V–V of Fig. 4;

Fig. 6 is perspective view, with parts broken away of said modified form of receptacle adapted for flush mounting; and

Fig. 7 is a view in section taken on the line VII–VII of Fig. 6.

The foregoing figures correspond respectively to Figs. 15, 17, 16, and 7 through 10 of said application Serial No. 421,786, with the circuit breaker devices omitted for simplifying the illustration of the present invention.

Referring to the drawing, Figs. 1, 2 and 3 show a construction of a receptacle suitable for either flush or projection mounting. A receptacle 2 having an open front is shown with brackets 4 suitably secured to the receptacle walls for cooperation with screws 6 to mount a cover plate 8. The

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inturned periphery of the front of the receptacle is spaced from the faces of brackets 4 to receive therebetween flanges 9 of angle members 10, two of which are illustrated in Fig. 2. The other flange of the angle members projects beyond the inturned peripheral rim of the receptacle for engagement with the sides of an opening in a wall surface 12. Two of these angle members are oppositely disposed and are preferably provided with protuberant portions 14 adjacent their ends as shown in Fig. 2 so that the other two members will be clamped into assembled position between them in a readily detachable manner. The angles will ordinarily be of a somewhat yielding or resilient construction to permit them to be assembled on the receptacle in a convenient manner. The cover 8 is secured to the front of the receptacle in engagement with the wall 12 by the machine screws 6 engaging screw threaded holes in the brackets 4. As has been previously pointed out the supporting panel 8 is movable relative to the front of the receptacle.

If the receptacle is to be projection mounted, the angle members 10 are removed and the same cover is secured against the receptacle rim by machine screws 16 cooperating with brackets 4, as shown in Fig. 3.

Figs. 4 through 7 illustrate a modified form of receptacle which is suitable for either flush or projection mounting. This apparatus comprising an open-front receptacle 20 having its front edges inwardly offset to form a perimetral shoulder portion 22 and a forwardly extending flange 24 defining the receptacle opening. Four channel members 26 (Figs. 4 and 5) are designed to fit about the front of the receptacle with one side engaging the shoulder portion 22 and the open portion extending toward the flange 24. Each of these channels is adapted to extend along one of the four sides of the receptacle and they may be cut at 45 degrees at their ends as shown at 27 (Fig. 4) to form mitre joints. As shown by way of example in the drawings, machine screws 28 extend through spaced openings in the lower sides of the channels to engage corresponding screw threaded holes in the shoulder 22 for releasably securing the channel members in place. The upper sides of these members may be apertured at 30 to permit manipulation of the screws 28. With the channel members in place as shown in Figs. 4 and 5, a cover 31 which may be similar to that shown in Figs. 1 and 3 is secured to the receptacle by means of machine screws 32 extending into threaded engagement with holes in angle brackets 34 secured to the receptacle wall

in spaced relationship about the opening therein. The perimetral portion of the cover thus engages the flat upper arms of the channel members to prevent the entrance of foreign material, and results in a suitable design for projection mounting.

If desired, the cover 31 may have a centrally depressed portion forming a perimetral shoulder to facilitate centering the cover in cooperation with the receptacle flange 24.

By removing the four channel members 26, as shown in Figs. 6 and 7, the above described receptacle is readily adapted for a flush mounting installation with a wall surface 36 extending within the perimetral space formed between the front offset portion of the receptacle and the rim of the cover 31.

It will readily appear from the foregoing that the convertible receptacle structure of Figs. 1 and 3 permits a convenient adaptation of a receptacle for either flush or projection mounting by either using or removing the angle members 10.

Various advantages of the invention will be evident from the foregoing description. The convertible receptacle arrangements permit the equipment to be sold in kit form suitable for either type of mounting. An electrician about to perorm a wiring job seldom knows in advance whether flush mounted or projection mounted service receptacles will be required. In accordance with the receptacles above described, however, a receptacle which may be used for either type of mounting and avoids the necessity of stocking and handling two types of receptacles is provided.

Since various modifications of the apparatus shown and described by way of examples will appear to those skilled in the art, it is intended that the invention shall be limited only by the spirit and scope of the appended claims.

We claim as our invention:

1. In an electrical installation device suitable for flush or projection mounting, a receptacle having a rectangular opening in the front thereof with its edges turned inwardly thereabout to form a flat perimetral surface for projection mounting, a plurality of angle members designed to fit about said opening with a first side fitted against the inner side of said edges and the second side projecting outwardly therefrom to present a perimetral edge surface for flush mounting, at least some of said angle members including means for releasably clamping them in assembled position, a cover having dimensions exceeding those of the opening in said receptacle for closing said opening irrespective of whether said angle members are assembled thereon.

2. In an electrical installation device suitable for flush or projection mounting, a receptacle having a rectangular opening formed in the front thereof with inwardly turned edges disposed thereabout to form a flat perimetral surface, four angle members designed to fit about said opening with a first side of each fitted against the inner surface of the corresponding said inturned edge and the second side projecting outwardly therefrom, one pair of opposite angle members being of substantially the same length as the sides against which they fit while the other pair are of such length as to abut the ends of the first pair to releasably retain the members in assembled position, means in said receptacle for preventing displacement of said angle members into said receptacle when in assembled position thereon, a cover having dimensions exceeding those of said opening, and means for attaching said cover to said receptacle to close the front thereof irrespective of whether said angle members are attached thereto.

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