Dec. 24, 1929. C. E. HANNY 1,740,862

RESIDENCE PANEL BOARD

Filed April 2, 1926 2 Sheets-Sheet 1

Fig. 1.

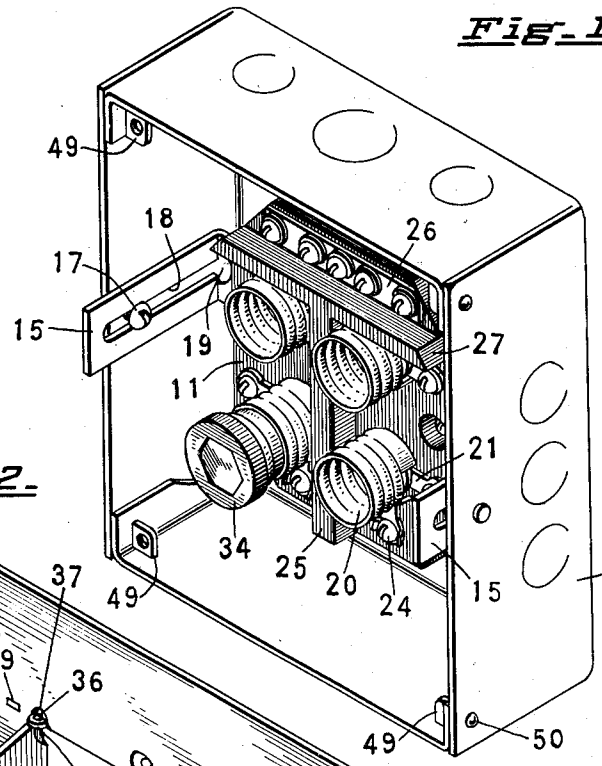


Fig. 2.

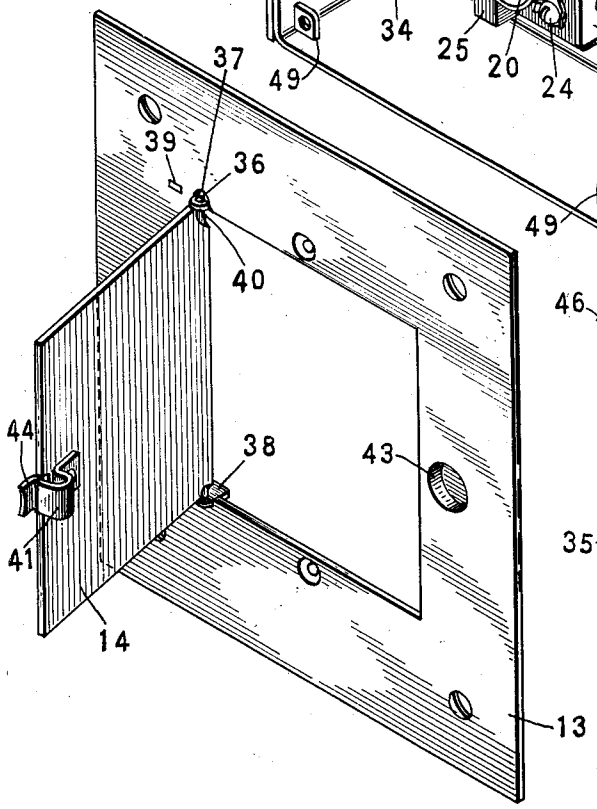
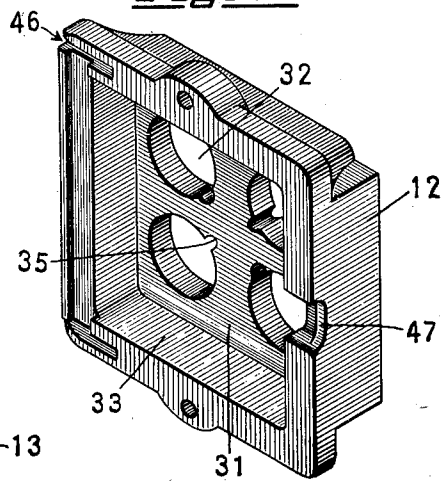


Fig. 3.



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Dec. 24, 1929. C. E. HANNY 1,740,862

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Filed April 2, 1926 2 Sheets-Sheet 2

Fig. 4.

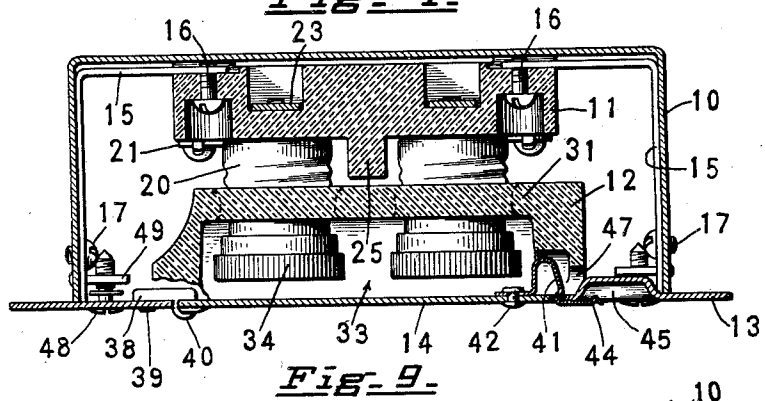


Fig. 9.

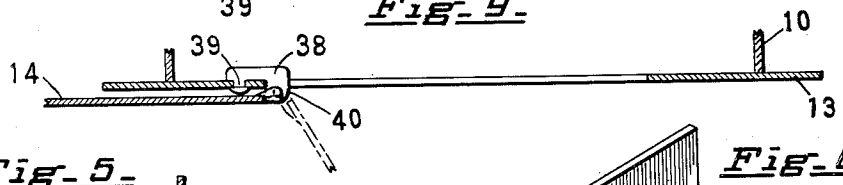


Fig. 5.

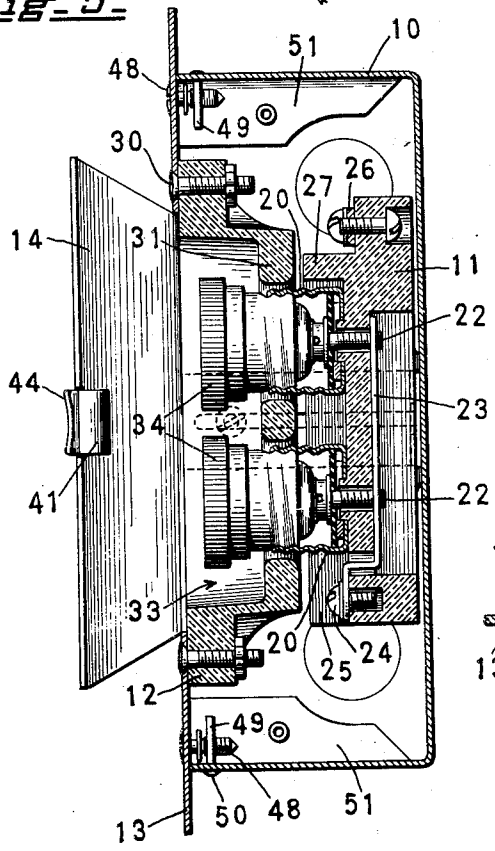


Fig. 6.

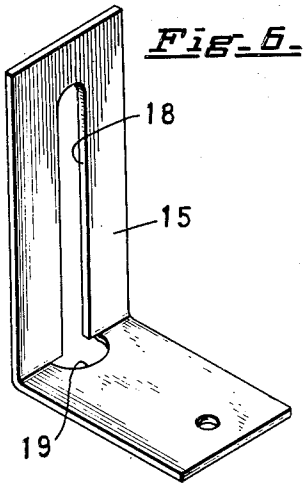


Fig. 7.

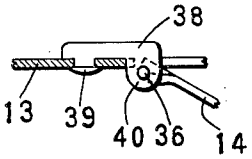
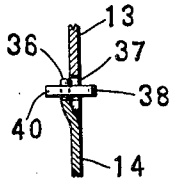


Fig. 8.



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UNITED STATES PATENT OFFICE

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RESIDENCE PANEL BOARD

Application filed April 2, 1926. Serial No, 99,209.

My invention relates particularly to what are known as dead front panel boards.

One object is to provide a construction in which all of the electrical parts and connections are completely housed so as to prevent accidental contact or tampering.

Another object is to provide a construction of this character to which access can be readily had by authorized persons when necessary but in which all of the live wires and terminals are normally inaccessible.

Another object is to provide a construction of this character which may be readily and conveniently installed.

Another object is to provide an enclosed panel board construction, the parts of which may be readily installed from time to time as the building is being erected, for instance, so that the box may be installed, the conduits connected, and the wires run in to the empty box after which the fuse units may be added and secured in position and the cover attached.

Another object is to provide an enclosed panel board construction in which the face plate may be applied or set flush with the wall, nothwithstanding the irregularities in the position of the body of the box.

Another object is to provide a construction having means which permit the casing, the fuse unit, the guard member, and the cover to be adjusted into correct relative positions.

Another object is to provide a construction of this character in which all of the fuse receptacle parts and terminals are mounted on a base as a unit and the unit may be readily removed or replaced.

Another object is to provide a construction in which the main cover, the fuse door and the guard member are secured together as a unit, which unit may be readily removed for inspection, wiring, or replacement of parts.

Another object is to provide a neat, cheap, and practical door and frame construction applicable to devices of this character.

Fig. 1 is a perspective view of the body of the box with the fuse carrying unit.

Fig. 2 is a perspective view of the cover plate and door.

Fig. 3 is a perspective view of the guard member.

Fig. 4 is a horizontal cross-section and plan of the assembled construction.

Fig. 5 is a vertical section of the construction showing the door partly opened.

Fig. 6 is a perspective view of one of the brackets for supporting the insulating base.

Figs. 7 and 8 are fragmentary detail sectional views showing the method of hinging the door to the front plate or frame.

Fig. 9 is a horizontal sectional view through the front plate, showing the door in the open position.

The box 10 may be of any suitable character provided with knock-outs with suitable means for connecting cables or conduits. The base 11 which carries the conducting parts to be described hereinafter, may be made of any suitable insulating material. The guard member 12 is also formed of some suitable insulating material. The front plate or frame 13 is preferably of sheet metal and provided with a door 14.

The base 11 is removably secured in the box, for instance, by a pair of angular brackets 15 each of which is secured to the base by a screw 16 and may in turn be secured to the box by a screw 17. The sides of these brackets are provided with slots 18 which permit them to be adjusted in and out, as indicated in Fig. 1. Each bracket is provided with an enlarged passage 19 so that the base 11 and attached parts may be entirely withdrawn as a unit from the box by simply loosening the screw 17 slightly. Obviously, the two brackets 15—15 may be in one piece with a connecting section extending across the bottom of the base, thus forming, in effect, a cradle or saddle mounting for the fuse unit. These brackets are preferably bent at a slight angle so that they press yieldingly against the inner side walls of the box. The insulating base 11 and the brackets 15 constitute a swinging fuse carrier adapted to position itself in conformity with the position of the front plate 13 and its guard 12.

The screws 17 serve as pivots or hinges about which the fuse carrier and its brackets or arms can swing and take up various posi-

tions to correspond with the angular relation of the front plate 13, as will be understood later. The base 11 is provided with any suitable number of fuse sockets 20, each of which, as usual, has two circuit terminals. One terminal 21 for each socket may extend outwardly at the side and be connected to the screw shell in the usual manner. The center terminal of each socket may consist of a screw 22 of the usual form. A pair of these sockets may have a connection strap 23 at the rear into which the center screws 22 are seated and provided with a circuit terminal 24. An insulating barrier 25 may be provided between the right and left hand pairs of sockets. A terminal strip 26 may be provided along the upper edge of the base for convenience in making circuit connections. An insulating flange 27 may be provided between this terminal strip 26 and the adjacent sockets.

A guard member 12 is secured to the front plate by a pair of bolts 30, these bolts preferably having slotless heads which prevent manipulation from the front or outside of the box. This guard member is provided with a rear wall 31 which has passages 32 corresponding in number and position with the screw shells of the fuse sockets. This guard member is so proportioned with respect to the box and the base that the outer ends of the screw shells 20 are located within the opening 32 when the parts are assembled, and a space or recess 33 is provided in front of the wall 31 for the fuse plugs 34. A groove or passage 35 is preferably provided in the wall of each of the passages 32 to permit a wire or testing instrument to be readily inserted alongside of the screw shell 20 for convenience in testing the condition of the circuits in which the apparatus is connected.

The front plate or frame and door are so designed that the door may be stamped or cut from the plate in one piece, together with the hinge pintles 36, which are off-set slightly, as shown in Figs. 2, 7 and 8. The cutting out of the door leaves, of course, the opening for the door and also the passages 37 at the corners where the hinge pintles were cut out. The hinge bearings are formed by small separate pieces 38 which are secured to the frame plate 13 by integral portions 39. Each of these pieces has a forwardly projecting lug 40 which extends through the passage 37 and provides a bearing for the hinge pintles 36 of the door. The blank cut out of the cover is trimmed at the edges so as to provide the proper clearance when placed back in the opening as a door. The door is preferably provided with a spring catch 41 which is riveted to the back of the door at 42 and is adapted to engage the rear edge 43 of the opening in the frame so that the door will automatically latch when closed. The catch 41 has a finger-piece 44 which overlaps the edge 43. The front plate is provided with a depression 45 to permit the insertion of the tip of the finger behind the extension 44 of the catch to facilitate release of the catch and opening of the door. The guard member 12 is preferably provided with guide grooves 46 and 47 which accommodate, respectively, the hinge members 38 and the latch member 41 so that in assembling the parts, the guard member is readily located or positioned with respect to the holes for the bolts 30.

The front plate or frame is preferably secured to the body of the box by a series of screws 48 which pass loosely through the face plate and screw into lugs 49 which are riveted at 50 in the corners of the box. A spring washer 51 on the shank of the screw 48 prevents the screw from being accidentally withdrawn from the front plate. The lug 49 being of thin metal and being spaced some distance below the cover, permits the screw 48 to be inserted either straight or at a slight angle so that the front plate can be readily attached to the box even though the front of the box is not exactly parallel with the rear face of the front plate.

For the purpose of installing the construction, the front plate 13 and guard 12 are removed as a unit. The fuse base, together with the strap members, may also be removed and the box installed in the wall and secured as nearly as possible in the proper position. The conduit or cable connections are attached to the box and the conducting wires may be run into the empty box. Such an arrangement provides a maximum facility in installation. The insulating base 11 with the fuse sockets may then be inserted into the box, leaving the ends of the brackets 15 protruding slightly from the box. The screws 17 can then be loosely set up so as to add to the frictional resistance caused by the engagement of the spring side arms of the brackets against the walls of the box and hold the base yieldingly in place. The front plate and guard member may be then applied and pushed into position until the front plate is flush with the wall (not shown) the fuse base being pushed inward by the pressure against the outer ends of the brackets 15. The front plate may be then removed and the screws 17 set up tight to hold the brackets and base in the position to which they have been adjusted by the pressure of the front plate. This method assures an accurate positioning of the fuse base and sockets with respect to the front plate and guard, even though the box may have been somewhat tilted or angularly displaced with respect to the side wall. The front plate is then again applied and the screws 48 tightened so as to hold the front plate permanently in place with the door, covering the fuse plugs.

When the door 14 is open, the guard mem-

ber 12 forms a substantial one-piece insulating guard having continuous side and end walls and effectually prevents accidental contact with the wires or live parts.

A particular advantage of this construction is that the guard member 12 is provided with a fully insulated fuse recess having solid side walls which walls are drawn into close engagement with the cover so as to obviate any crevices or openings. The guard member also acts as a rabbet or stop for the fuse door and thus precludes any crevices or openings at this point.

Although there is no direct connection between the guard member and the fuse units, the adjustable means shown in this application make it possible to readily adjust the relative position of the parts to conform to the rigid requirements of the underwriters. The slotted strap adjusting means allows the fuse unit to be adjusted, up or down, or tilted at an angle.

By reason of the adjustable relations between the fuse unit and the guard member, and between the outer box or casing and the cover which carries the guard member, the several parts which go to make up a complete panel board may be adjusted and secured together in correct relative position through a considerable range of variations.

I claim:

1. A fuse cabinet construction including a casing, a fuse unit, a mounting strap secured to said unit, said strap having a slot extending lengthwise of the strap and terminating in an enlarged portion at one end, a screw in a wall of the casing for engagement with said slot, the said slot permitting adjustment of said unit and said enlarged portions permitting said unit to be removed from said casing without dismounting said screw.

2. A fuse cabinet comprising a casing, a front plate and guard detachably secured to said casing, a fuse carrier cmprising a base, and side brackets secured to said base, said brackets having ends projecting forwardly and serving as gauges to coact with said front plate and position the base with respect to the guard, means for securing said brackets to opposite sides of the casing in various adjusted positions, and a door for the front plate covering a part of said guard.

3. A fuse cabinet comprising a casing, a detachable front plate, an insulating guard secured to said plate, a fuse carrier mounted in said casing, and having brackets adjustably secured to the opposite sides of said casing, said carrier having forwardly projecting fuse sockets and said guard having individual openings to receive and insulate said sockets, said carrier being adjustable with respect to said casing and to said guard.

4. A construction of the character described comprising a casing, a fuse base, brackets secured to said base and having slotted side arms, screws for adjustably securing said brackets directly to the side walls of said casing, a front plate for said casing, a guard member for said fuse base and provided with openings for fuse plugs, and screws loosely mounted on said front plate for detachably and adjustably securing said plate to said casing.

5. A fuse cabinet comprising a casing, a fuse base mounted therein, slotted adjusting brackets secured to said base oppositely disposed screw means for securing said brackets to the side walls of said casing, and serving as pivots, a front plate provided with loosely mounted screws for adjustably securing said front plate to said casing at various angles, a guard member carried by said front plate, and a door for said front plate extending over said guard member.

6. A casing, a fuse carrier base having resilient brackets secured to the central part of the base at opposite sides thereof, fuse sockets carried by said base, said brackets having slotted arms, a clamp screw passing outwardly through each slotted arm into the adjacent side wall of the casing, said screws serving as pivotal supports for the base and brackets and permitting said base to slide in and out and to swing about said screws, a removable front plate, a guard member carried by and removable with said front plate and having apertures for the fuse sockets and means for securing said front plate in position.

7. A construction of the character described comprising a casing, a fuse base having sockets for fuse plugs, slotted brackets secured to said base and having side arms frictionally engaging the opposite side walls of said casing, screws cooperating with said side arms to secure said base in adjusted position in said casing and permitting the fuse base to swing on said screws, a front plate, a guard member carried by said plate and provided with openings for the fuse plugs, and means for adjustably securing said front plate and guard in the proper adjusted position relative to said fuse base.

8. A fuse cabinet comprising a casing, an insulating base mounted therein, slotted brackets secured to said base to permit relatively in and out adjustment of said base in said casing, screws for screwing said bracket in adjusted position, fuse sockets carried by said base, a front plate having an opening, screw seats in the corners of said casing, screws loosely carried by said front plate and co-acting with said seats, to permit relatively angular adjustment of said plate with respect to said casing, an insulating guard member secured to said front plate and having passages for said fuse sockets and a recess in front thereof, and a door for the front

of said guard member hinged to said front plate.

9. A fuse cabinet comprising a casing, a fuse base mounted therein, slotted adjusting brackets secured to said base, a front plate, loosely mounted angularly adjustable screws for adjustably securing said front plate to said casing at various angles, a guard member secured to said front plate and adapted to be aligned with said base, and a door secured to said front plate and extending over said guard member.

CHARLES E. HANNY.