

March 10, 1942.

L. W. COLE ET AL

2,276,226

ELECTRIC PANEL

Filed Jan. 9, 1940

4 Sheets-Sheet 1

FIG. 1

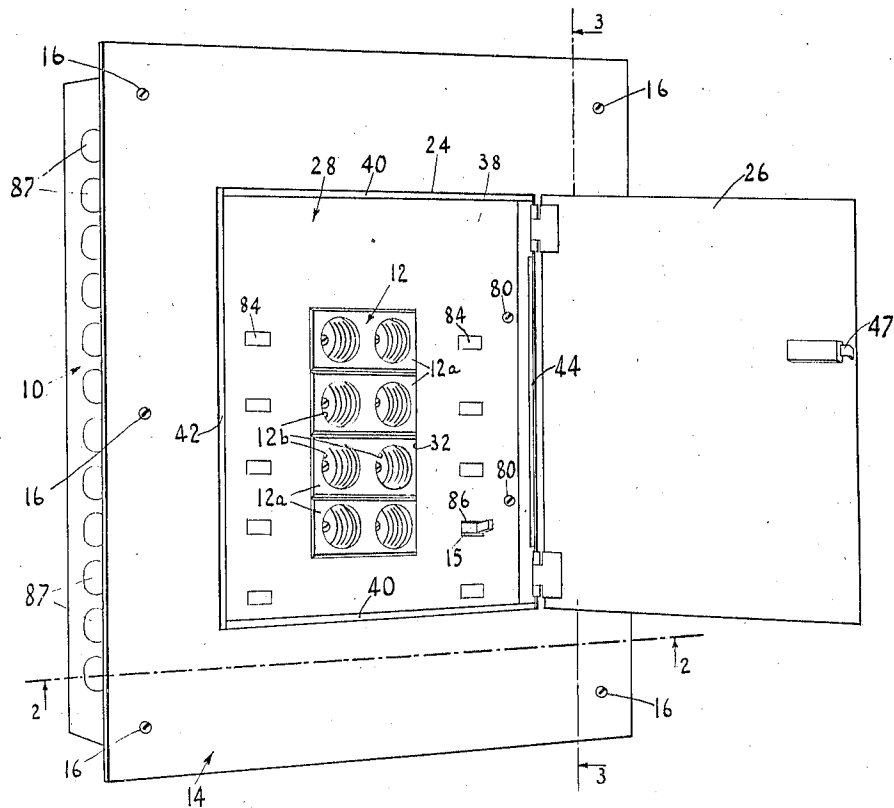
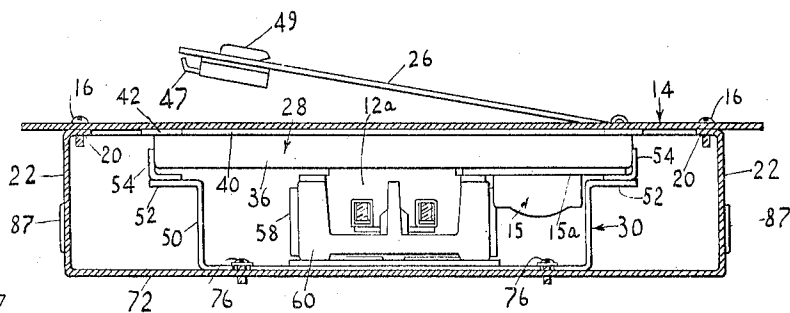


FIG. 2



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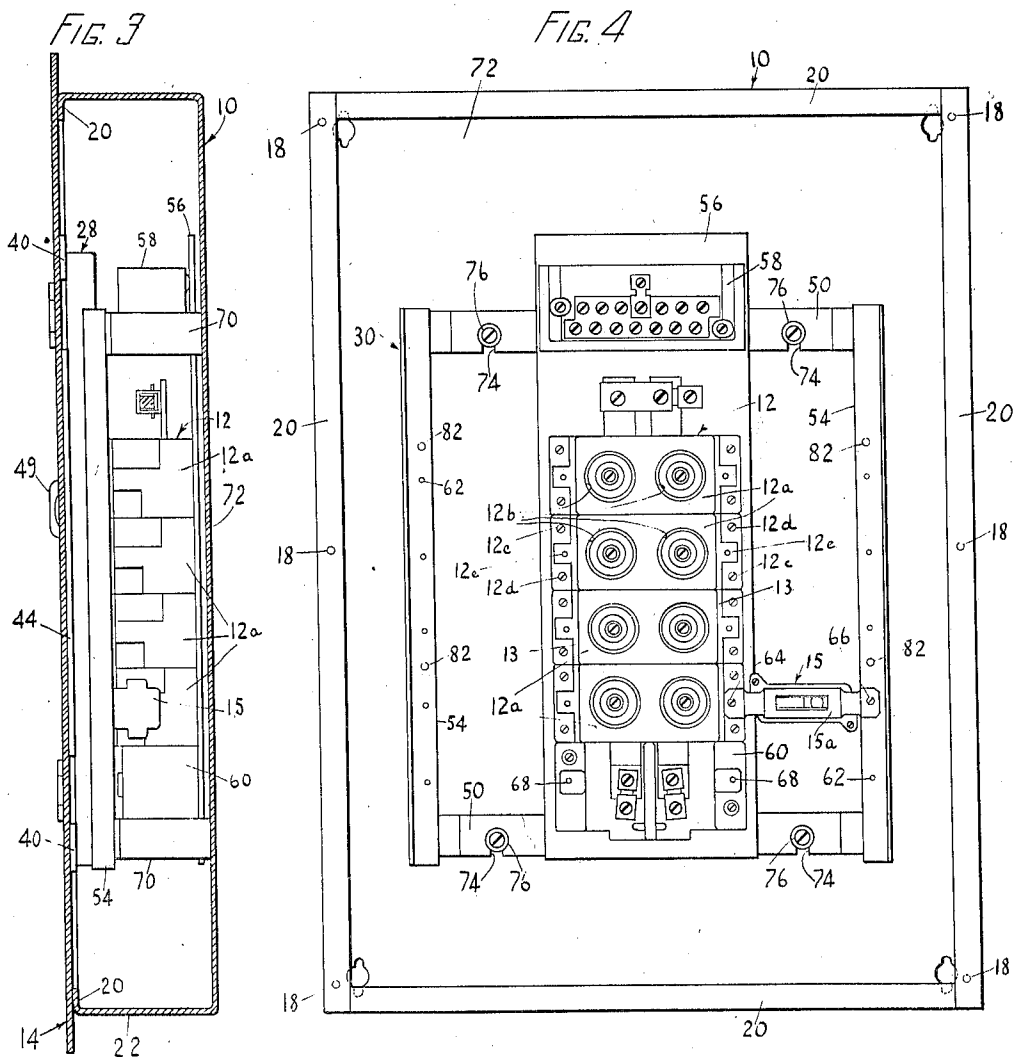
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4 Sheets-Sheet 2



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FIG. 6

FIG. 5

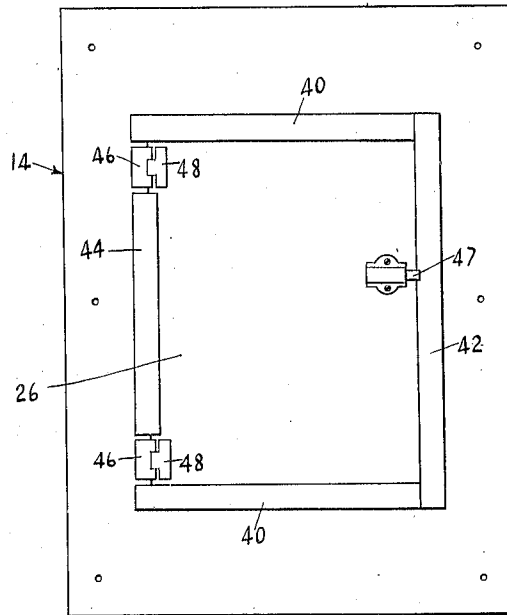
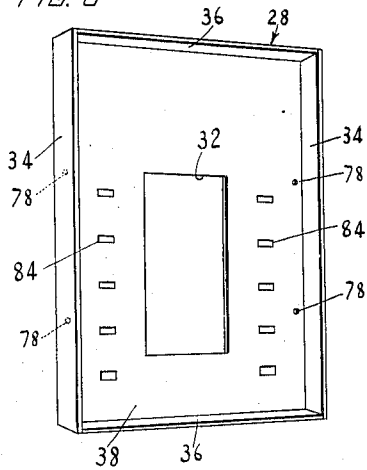
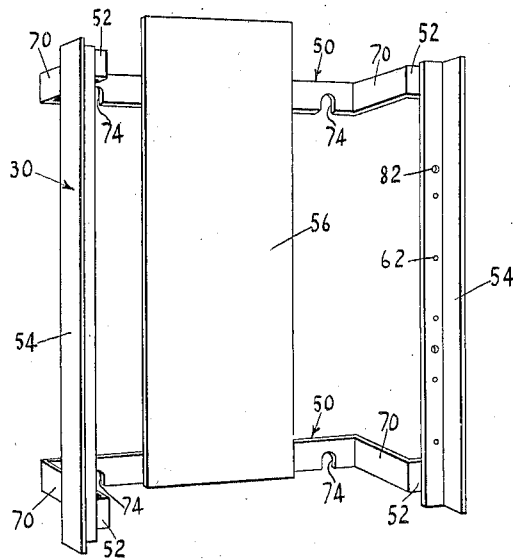


FIG. 7



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4 Sheets-Sheet 4

FIG. 8

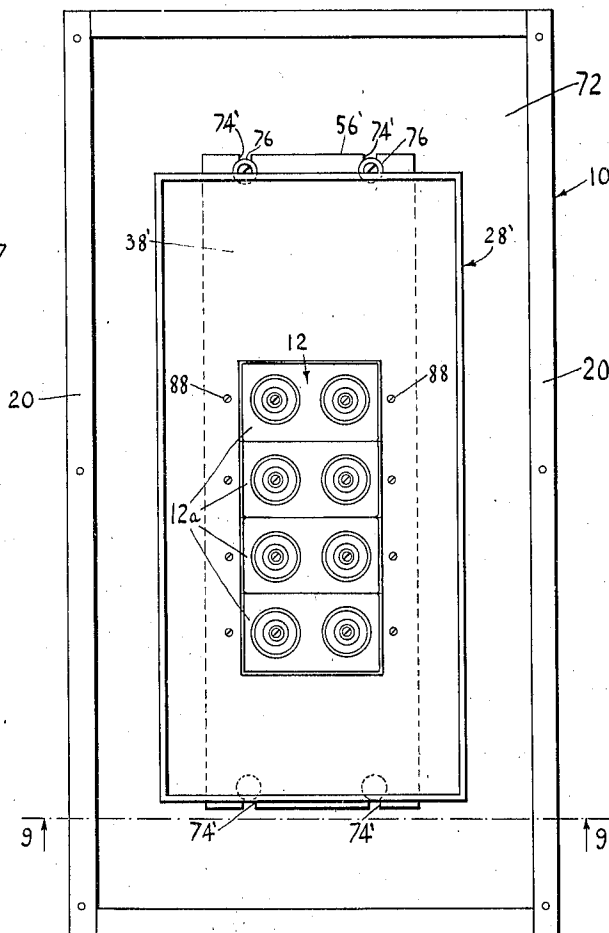
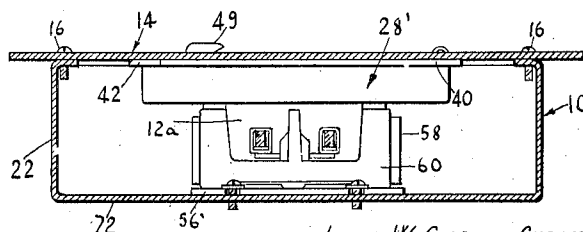


FIG. 9



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UNITED STATES PATENT OFFICE

2,276,226

ELECTRIC PANEL

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Application January 9, 1940, Serial No. 313,072

14 Claims. (Cl. 175—308)

This invention relates to electric panels and more particularly to fuse panels of the panel box type.

One object of the present invention is the provision of a panel of the character described constructed and arranged so that the trim member can be mounted evenly with respect to the wall in the recess of which the panel box is positioned, without requiring adjustments of the elements within said box.

Another object of the invention is the provision in a panel of a combination fuse base and switch frame which can be assembled and wired when the frame, fuse base, and switches are out of the box. This facilitates the assembly and wiring and eliminates soiling of the fuse base and frame, which might otherwise occur, for example, during plastering or other building work.

Another object of the invention is to provide a combination fuse base and switch frame constructed and arranged to permit the switches to be mounted in position without precise spacing of parts of the frame in relation to the fuse base. More specifically, for accomplishing this object the fuse base and switch frame has one or more elements which are resiliently movable toward and away from the fuse base to permit the switches to be mounted and secured in position to and between the fuse base and said parts of the frame even though the latter are not precisely spaced from the fuse base.

Another object of the invention is to eliminate the difficulty heretofore encountered in registering the shield with the fuse base, and further to eliminate the difficulty of registering the switches with the openings in the shield. These difficulties were encountered heretofore in panel boxes in which the shield is fixed to the trim member or when the mounting for the switches at the outer ends thereof are formed rigidly with the box.

The above and other objects of the invention will be more clearly understood from the following description considered with reference to the accompanying illustrative drawings.

In the drawings:

Fig. 1 is a perspective view of a panel embodying the present invention, showing the panel box and associated parts in assembled relation and showing the cover of the trim member in open position;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1, showing the cover in partially open position;

Fig. 3 is a sectional view on the line 3—3 of Fig. 1, showing the door in closed position;

Fig. 4 is a front view of the panel box with the shield and trim member removed;

Fig. 5 is a perspective view of the shield;

Fig. 6 is a rear view in elevation of the trim member, showing the door in closed position;

Fig. 7 is a perspective view of the frame for the fuse base and switches, the fuse base and switches being removed;

Fig. 8 is a front view of a panel embodying another form of the present invention, the trim member being removed;

Fig. 9 is a sectional view on the line 9—9 of Fig. 8 with the trim member in position.

Referring now to the drawings in detail and first to the form of the invention illustrated in Figs. 1 to 4, the panel comprises a box or housing 10 which customarily is made of metal for housing the fuse base or other electrical receptacle 12 and the switches 15. It will be understood by those skilled in the art that the box 10 is installed in a recess in a building wall, the front of the box being spaced slightly rearwardly of the outer surface of said wall. Trim member 14 is secured to the front of the box removably, as by screws 16 threaded into openings 18 provided in the opposite inturned flanges 20 of the side walls 22 of said box. It will be understood that trim member 14 engages the adjacent outer surface portions of the building wall when the panel box is mounted on the recess therein and lies sufficiently close to the shield 28 to meet the usual requirements. Said trim member has an opening 24 to provide access to the fuse base 12 and switches 15 and has a hinged cover 26 for said opening.

In accordance with the present invention the shield member 28 is formed separately from the trim member 14 and is associated with a fuse base and switch frame 30 and with the fuse base 12 and switches 15 mounted on said frame. As shown, said shield has an opening 32 through which the front of fuse base 12 projects slightly, the front reduced peripheral edge portion of said fuse base fitting in said openings with but slight clearance, and the narrow peripheral shoulders 13 of said base adjacent said reduced edge portion lying inwardly of said opening. Said shield is, as shown (Fig. 5), in the form of a shallow pan, having side walls 34 and 36 which are integral with and extend forwardly from the shield plate 38 so that the free edges of said side walls lie sufficiently close to the inner surface of trim member 14, when said

shield is mounted on frame 30 and when said trim member is in position, to meet the requirements. The provision of shield 28 as a member separate from the trim member 14 eliminates the difficulty of registering the shield with the fuse base 12, which difficulty is frequently encountered when the shield is in fixed relation with the trim member. The trim member 14 is provided with means forming a rabbet at the edges of the openings 24 so that the cover 26 when moved to closed position can have its outer surface flush with the outer surface of the trim member. The rabbet-forming means is, as here shown, constituted by metal strips 40, 42 and 44 secured to the rear surface of trim member 14, preferably by welding, and extending on the inner surface of said trim member slightly beyond the edges of openings 24. Pairs of companion hinge members 46 and 48 are secured to the trim member and to the door 26, respectively, for pivotally mounting said cover on said trim member. Cover 26 is provided with a latch 47 and with a latch-operating member 49.

The frame 30 (Fig. 7) provided in accordance with the present invention comprises a pair of U-shaped straps 50 disposed in spaced relation and carrying at their upper outturned end portions 52 side rails 54 which are constituted by angle members. Said side rails 54 are fixedly secured to straps 50 preferably by being welded to said outturned portions 52. A plate 56 is secured to straps 50 preferably by being welded thereto and forms a mounting for the fuse base 12. As here shown, said fuse base 12 is constituted by a plurality of individual insulation blocks 12a provided with sockets or receptacles 12b for the usual plug fuses (not shown). Said blocks are removably secured to mounting plate 56 in the usual way as by screws 12c. Each block has a pair of terminals as indicated at 12d. Terminal blocks 58 and 60 are also mounted on and removably secured to mounting plate 56 of frame 30, said terminal blocks being concealed by plate 38 of shield 28 when the latter is in position.

Frame 30 is a combination fuse base and switch frame. For this purpose side rails 54 are provided with a plurality of threaded openings 62 disposed in spaced relation longitudinally of said side rails in alignment or substantially in alignment with threaded openings 12e in each receptacle block 12a of fuse base 12. The mounting strap 15a of switch 15 is secured at one end thereof to a companion block 12a by a screw 64 and said mounting strap is secured at its other end to the adjacent side rail 54 of frame 30 by a screw 66, said screws being threaded into said openings 12e and 62, respectively. The terminal block 60 is also preferably provided with threaded openings 68 in alignment with threaded openings 62 of side rails 54 to permit switches to be secured to said terminal block.

The upstanding portions 70 of straps 50 are resiliently movable toward and away from each other and from the adjacent ends of receptacle blocks 12a of fuse base 12, said straps 50 being made of metal which is sufficiently resilient for this purpose. This resiliency permits the switches 15 to be readily installed even though the side rails 54 are not precisely spaced from the adjacent ends of receptacle blocks 12a and even though the threaded openings 62 are not precisely located in reference to the distance between the ends of switch straps 15a. Also, this

resiliency of upstanding strap portions 70 of frame 30 facilitates the installation of shield 28.

The combination fuse base and switch frame 30 is removably secured to the rear wall 72 of box 10. For this purpose each strap 50 is provided with a pair of open-end notches 74 in which are engaged the shanks of screws 76 threaded into said rear wall 72. It will be understood that the fuse base and switches can be assembled with frame 30 and much of the wiring can be done while these parts are out of box 10, and thereafter the frame 30 carrying said fuse base and switches as well as the other electrical equipment mounted on plate 56 of frame 30 can be installed as a unit in box 10 by mounting straps 50 on screws 76, notches 74 of said straps engaging over said screws. Also, if desired, the shield 28 can be assembled and secured to frame 30 prior to the installation of said frame in box 10. Said shield is provided with openings 78 for the passage of screws 83 which are threaded into openings 82 in side rails 54 of frame 30 for securing the shield removably in position. Shield 28 is also provided with a plurality of knock-outs 84 to provide openings for the projection through the shield plate 38 of the switch-actuating members, one of said openings being indicated by way of example at 86 in Fig. 1. The housing or box 10 is, of course, also provided with knock-outs for wiring, some of said knock-outs being indicated at 87.

Referring now to the form of the invention illustrated in Figs. 8 and 9, in the panel made in accordance with this form of the invention, the frame for the fuse base does not include means for mounting switches or for supporting the shield 28'. Said shield 28' is of the same construction as the shield 28 illustrated in Fig. 5 except that it is not provided with knock-outs to accommodate switch-operating parts. In this form of the invention, the fuse base 12 is mounted on a plate 55' which constitutes the frame for said fuse base. Said plate 55' is secured to the rear wall 72 of the panel box 10 by screws 76 which engage in notches 74' in said plate. The shield 28' is secured to fuse base 12 and more particularly to the blocks 12a by screws 88, passing through openings in the shield plate 38' and threaded into openings 12e of blocks 12a.

It will be understood that while we have shown and described two forms of the preferred embodiment of the invention, the latter may be embodied otherwise than as here shown and that certain changes in the details of construction and in the arrangement of parts may be made. Therefore, we do not wish to be limited to the constructions of the fuse panels as herein shown or described except to the extent which may be required by the scope of the appended claims.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. A panel for electric equipment, comprising a housing adapted to be mounted in a recess in a building wall, a frame mounted in said housing and carrying a fuse base or the like, said frame having side members spaced laterally from said fuse base, a shield removably secured to said side members and having an opening for providing access to said base, a trim member separate from said shield positioned at the front of said housing over said shield, said trim extending outwardly beyond the side walls of said housing for overlapping the outer surface of said wall around said recess, and means separate from said shield

for securing said trim member in said position and for engagement of said outwardly extending portions thereof with the outer surface of the building wall around said recess.

2. A panel for electric equipment, comprising a housing adapted to be mounted in a recess in a building wall, a frame mounted in said housing and carrying a fuse base or the like, said frame having side members spaced laterally from said fuse base, said base and said side members of said frame having provision for the connection thereto of one or more switches, a shield removably secured to said side members and having an opening for providing access to said base, said shield also having provision for access to the switches mounted on said base and frame, a trim member separate from said shield positioned at the front of said housing over said shield, and means for securing said trim member in said position and for engagement with the outer surface of the building wall.

3. A panel for electric equipment, comprising a housing adapted to be mounted in a recess in a building wall, a frame mounted in said housing and carrying a fuse base or the like, said frame having side members spaced laterally from said fuse base and movable laterally toward and away from the opposite sides, respectively, of said base, a shield removably secured to said side members and having an opening for providing access to said base, a trim member separate from said shield positioned at the front of said housing over said shield, and means separate from said shield for securing said trim member in said position to said housing independently of said shield and for engagement with the outer surface of the building wall.

4. A panel for electric equipment, comprising a housing adapted to be mounted in a recess in a building wall, a frame mounted in said housing and carrying a fuse base or the like, said frame having side members spaced laterally from said fuse base and movable laterally toward and away from said base, said base and said side members of said frame having provision for the connection thereto of one or more switches, a shield removably secured to said side members and having an opening for providing access to said base, said shield also having provision for access to the switches mounted on said base and frame, a trim member separate from said shield positioned at the front of said housing over said shield, and means for securing said trim member in said position and for engagement with the outer surface of the building wall.

5. A panel for electric equipment, comprising a housing adapted to be mounted in a recess in a building wall, a frame mounted in said housing, said frame comprising two straps disposed in spaced relation and each having an intermediate portion and upstanding end portions, a plate secured to said intermediate portions of said straps, side members secured to said upstanding portions of said straps, a fuse base secured to said plate, a shield secured to said side members of the frame and having an opening for providing access to said base, and a trim member positioned at the front of said housing and removably secured in said position.

6. A panel for electric equipment, comprising a housing adapted to be mounted in a recess in a building wall, a frame mounted in said housing, said frame comprising two straps disposed in spaced relation and each having an intermediate portion and upstanding end portions, a plate se-

cured to said intermediate portions of said straps, side members secured to said upstanding portions of said straps, a fuse base secured to said plate, said side members being movable laterally toward and away from said base, said side members and said base having provision for the connection thereto of one or more switches, a shield secured to said side members of the frame and having an opening for providing access to said base, and a trim member positioned at the front of said housing and removably secured in said position.

7. A panel for electric equipment, comprising a housing adapted to be mounted in a recess in a building wall, a frame mounted in said housing, said frame comprising two straps disposed in spaced relation and each having an intermediate portion and upstanding flexible end portions, a plate secured to said intermediate portions of said straps, side members secured to said upstanding portions of said straps, a fuse base secured to said plate, said side members and said base having provision for the connection thereto of one or more switches, a shield secured to said side members of the frame and having an opening for providing access to said base, and a trim member positioned at the front of said housing and removably secured in said position.

8. A combination fuse base and switch frame adapted to be mounted in a panel box, said frame comprising two straps disposed in spaced relation and each having an intermediate portion and upstanding end portions, a plate secured to said intermediate portions of said straps, side members secured to said upstanding portions of said straps, a fuse base secured to said plate, said base and side members having provision for the connection thereto of one or more switches.

9. A combination fuse base and switch frame adapted to be mounted in a panel box, said frame comprising two straps disposed in spaced relation and each having an intermediate portion and upstanding end portions, a plate secured to said intermediate portions of said straps, side members secured to said upstanding portions of said straps, a fuse base secured to said plate, said base and side members having provision for the connection thereto of one or more switches, and a shield adapted to be secured to said side members and having an opening for providing access to said fuse base.

10. A combination fuse base and switch frame adapted to be mounted in a panel box, said frame comprising two straps disposed in spaced relation and each having an intermediate portion and upstanding end portions, a plate secured to said intermediate portions of said straps, side members secured to said upstanding portions of said straps, a fuse base secured to said plate, said side members being spaced laterally of said fuse base and movable laterally toward and away therefrom.

11. A combination fuse base and switch frame adapted to be mounted in a panel box, said frame comprising two straps disposed in spaced relation and each having an intermediate portion and upstanding flexible end portions, a plate secured to said intermediate portions of said straps, side members secured to said upstanding portions of said straps, a fuse base secured to said plate, said side members being spaced laterally of said fuse base and movable laterally toward and away therefrom.

12. A combination fuse base and switch frame adapted to be mounted in a panel box, said frame comprising two straps disposed in spaced relation and each having an intermediate portion and upstanding flexible end portions, a plate secured to said intermediate portions of said straps, side members secured to said upstanding portions of said straps, a fuse base secured to said plate, said base and side members having provision for the connection thereto of one or more switches. 10

13. A combination fuse base and switch frame adapted to be mounted in a panel box, said frame comprising two straps disposed in spaced relation and each having an intermediate portion and upstanding flexible end portions, a plate secured to said intermediate portions of said straps, side members secured to said upstanding portions of said straps, a fuse base secured to said plate, said side members being spaced laterally of said fuse base and movable laterally toward and away therefrom, said base and side members having provision for the connection thereto of one or more switches. 20

14. A panel for electric equipment, comprising a housing adapted to be mounted in a recess in a 25

building wall, a frame mounted in said housing and carrying a fuse base or the like, a shield positioned in said housing and comprising a plate having an opening for providing access to said base and having upstanding side walls terminating in free edges disposed adjacent the front of said housing, a trim member separate from said shield and adapted to be secured in position at the front of said housing adjacent said edges of the side walls of said shield, said trim extending outwardly beyond the side walls of said housing for overlapping the outer surface of said wall around said recess, said trim member having an opening for providing access to said base through said shield opening, means separate from said shield for securing said trim member to said housing in said position at the front of the housing independently of said shield, means fixed to the inner surface of said trim member forming a rabbet at said opening of the trim member in position overlying said free edges of said shield, and a cover adapted to seat in said rabbet.

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