Jan. 24, 1939. A. CORBETT 2,145,155

FUSE CABINET

Original Filed Feb. 5, 1936 2 Sheets-Sheet 1

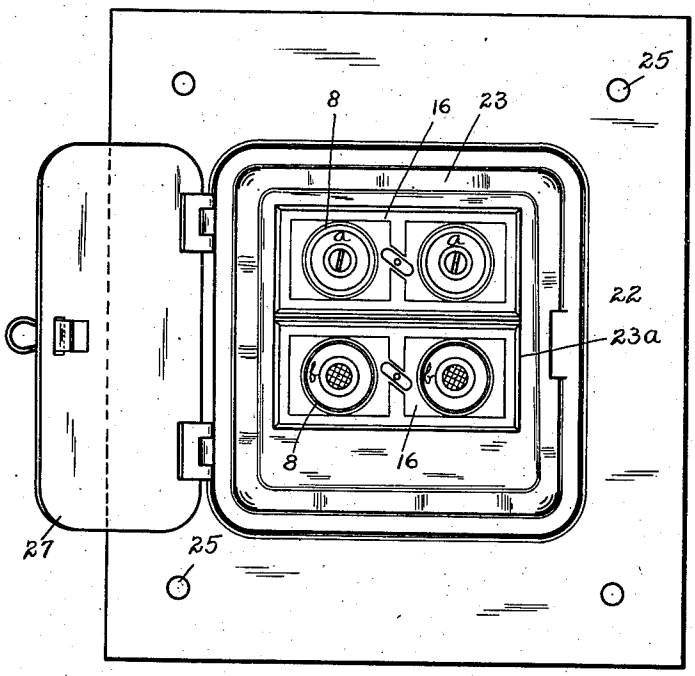


Fig. I.

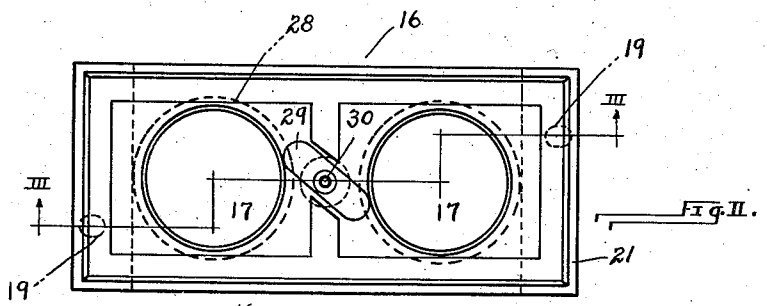


Fig. II.

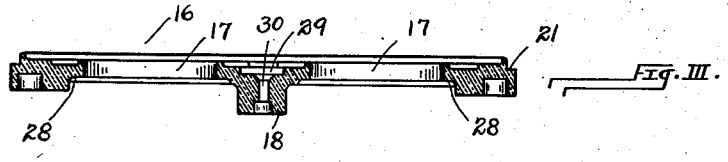


Fig. III.

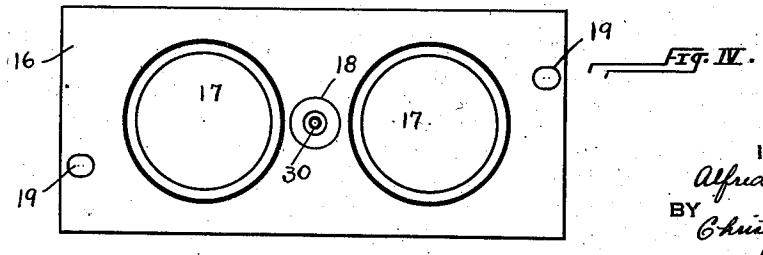


Fig. IV.

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FUSE CABINET

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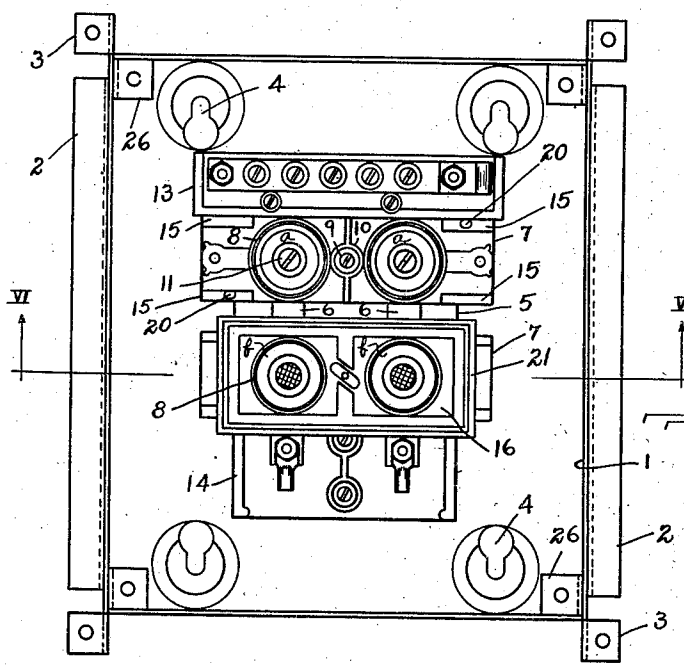


Fig. V.

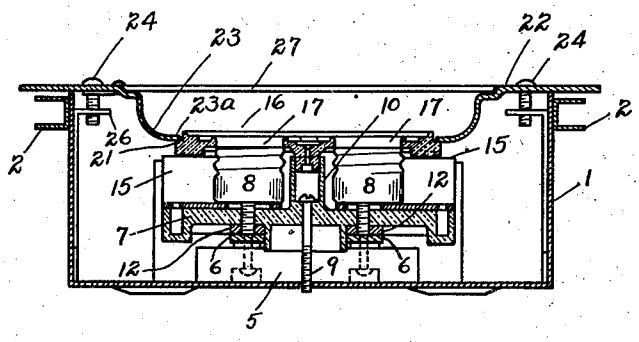


Fig. VI.

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FUSE CABINET

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Application February 5, 1936, Serial No. 62,448
Renewed July 1, 1938

1 Claim. (Cl. 247—21)

This invention relates to a fuse cabinet, and particularly to a fuse cabinet, and fuse cabinet assembly, in which tamper-proof fuse sockets are incorporated.

More specifically to consider my invention, I have so incorporated the mounting for tamper-proof fuse sockets, as disclosed in my co-pending application Serial No. 12,426, filed March 22, 1935, that I produce a fuse cabinet assembly in which the socket mounting is neatly housed and is so arranged with respect to the cabinet that the cabinet presents a pleasing, finished appearance when the cabinet door is open. I have also made such modification in elements of the fuse socket mounting that the cover plates for the fuse sockets are freely liftable from mounted position to give access to electrical connection carried by the mounting structure which carries the fuse sockets and supports the cover plates; and have made the socket cover elements so to cooperate with the fuse sockets that they are usable either with standard fuse sockets or with tamper-proof fuse sockets. Also, I so form and arrange the means carrying the electrical conductors, and other electrical connections, that they form in the fuse cabinet a built-up structure, which is readily assembled, and which is peculiarly adapted to the mounting of tamper-proof fuse sockets; and so form the body of the cabinet that it may conveniently be built into a wall in any locality thereof.

In the drawings:

Fig. I is a front elevation of the fuse cabinet with the fuse socket structures mounted therein, the door of the cabinet being shown open to expose the cover plates of the fuse socket mounting.

Fig. II is a top plan view of a fuse socket cover plate forming an element of the fuse socket mounting.

Fig. III is a longitudinal, vertical section through the cover plate shown in Fig. II, taken on the plane of the irregular section line III—III of Fig. II.

Fig. IV is a bottom plan view of the cover plate shown in Figs. II and III.

Fig. V is a front elevation of the fuse cabinet, with the true, or fixed, cover of the cabinet removed to expose the mounting structure for the fuse sockets.

Fig. VI is a cross-sectional view taken on the plane of the section line VI—VI of Fig. V.

Referring particularly to Figs. V and VI of the drawings, reference numeral 1 designates the body of a metallic fuse cabinet, which has attached to opposite side walls thereof channels 2 and has perforate projected corner lugs 3, for mounting the cabinet in a wall. These perforate corner lugs 3 are projected in a plane parallel to the plane of the side wall channels, so that they provide for attachment of the cabinet to structural members which present faces parallel to the channels. The bottom wall, or floor, of the cabinet body has therein key slots 4 for mounting the cabinet on the surface of a wall.

As in my co-pending application referred to above, the mounting means comprise primarily contoured tie blocks 5 of insulating material, which are attached to the floor of the cabinet. These insulating blocks 5 are spaced from each other in the assembly, and carry the bus bars 6 in bridging relation therebetween. Decks 7, carrying fuse sockets 8, fit in mounted position on adjacent blocks, and are held to the blocks and to the bus bars each by an elongate screw 9 which is threaded to a screw hole in the floor of the cabinet. Considering each deck individually, its mounting screw 9 has its head lying within, and at the base of, a tubular post 10 projected upwardly from the body of the deck. Tubular post 10 serves additionally as an insulating barrier between the sockets 8. Center-contact screws 11, at the base of each of the sockets or shells 8, are projected through the deck, and beneath the deck carry washers 12 which make contact with the bus bars 6 in intervals between insulating tie blocks.

It may here be observed that the decks 7, and other parts which are of insulating material, are shown in the drawings sectioned to indicate that they are composed of porcelain. It is to be understood, however, that they may be made of a phenol condensation product, or some other suitable molded material having insulating qualities.

In the cabinet assembly, referring specifically to Fig. V of the drawings, blocks 13 and 14 of insulating material carry connection terminals for the fuse sockets, and are attached individually to the floor of the cabinet.

Each of decks 7 which, as shown in Fig. V, is in plan view of elongate rectangular form, has at the corners thereof upwardly extending pedestals 15, which support the cover plates 16 of the assembly. Considering individually one of the cover plates 16 for the fuse sockets, this element is rectangular in form, conforming in shape and size to the deck 7 on which it is mounted, and has therein a pair of circular openings 17 giving access to the fuse sockets or shells 8.

Referring now particularly to Figs. II, III, and IV of the drawings, it will be seen that the cover plate 16 has an interfitting with its associated deck 7 by means of a central dependent boss 18, which is adapted to enter the tubular post 10 on deck 7; and that there are in the under face of the cover plate diagonally disposed circular recesses, or indentations, 19 adapted to receive matching pins 20 projected upwardly from two of the pedestals 15. When placed on its deck, the cover plate has therefor a locking engage-

ment with the deck of a nature to prevent displacement of the cover plate in the horizontal plane.

It will be seen in Figs. II and III of the drawings that the upper face of the cover plate is formed marginally to provide a shoulder 21. The true cover 22 of the cabinet is dished inwardly at an opening therein, and this dished region 23 of the cover, surrounding the opening, terminates marginally in a horizontal trim 23a, which overlies and engages the cover plate at the marginal shoulder 21 thereof. This marginal engagement of the cover plate 16 and the true cover 22 of the cabinet, by preventing vertical displacement of each cover plate from its associated deck, permits adequately firm assembly to be made without fixed attachment of the cover plate to the deck.

Because of the cooperative mounting of the cover plates, they may simply be lifted from position on their associated decks, to permit work to be done on the fuse sockets or shells 8, upon first removing the true cover 22 of the cabinet. This true cover is itself normally fixed on the body 1 of the cabinet by means of screws 24, passing through screw holes 25 in the cover and engaging lugs 26 in the body of the cabinet. The cabinet door 27 is hinged to the true cover 22, and when swung open exposes merely the cover plates 16 of the assembly, and plug fuses inserted in the sockets 8. The appearance of the cabinet is thus neat and attractive when the door 27 is swung open to change fuses.

Referring particularly to the fuse sockets of the assembly, sockets of two differing types are shown associated in conjunction in the cabinet. As shown in Figs. I and V, two of the fuse sockets 8, which are distinguished by reference letter *a*, are of common unspecialized type, while the other two fuse sockets, distinguished by reference letter *b*, are of tamper-proof type. The tamper-preventing structures of these latter fuse sockets are, for increased clarity of illustration, omitted from Fig. VI of the drawings which is taken on a plane intersecting them.

In order that fuse sockets of the tamper-proof type may be selectively adapted to fuses of but one selected capacity, they are made of sizes differing for different capacity circuits protected by fuses of appropriate capacity inserted in the sockets. In the drawings, the sockets distinguished by reference letter *b* are of lesser diameter than the sockets distinguished by reference letter *a*. The cover plates 16 are so made that each of them may appropriately be used with a deck carrying sockets of either diameter.

Referring to Figs. II, III, and IV of the drawings, it will be seen that each of the circular openings 17 through the cover plate has a chamfered rim 28 formed in the under face of the cover plate. If then a screw shell of greater diameter lies under the cover plate, the uppermost bodily formed bulge, or thread, of the shell lies in the chamfer 28 barely to expose the interior of the shell for the insertion of a plug fuse therein. With a socket of the larger diameter, the extreme edge of the socket thus is directly in line with the upper wall line of the opening. If the shell be of a slightly lesser diameter, the extreme edge of the shell lies slightly, and concentrically, within the upper wall line of the opening with the uppermost bodily bulge, or thread, of the shell filling the space between the extreme edge of the shell and the wall line of the opening through the cover plate.

Because of this conformation of the openings through the cover plate, the same cover plate may be used on decks carrying sockets of slightly differing diameter. This is because the chamfer 28 permits the bulge of the uppermost thread on the larger diameter socket so to lie that it is out of actual interfering contact with the cover plate, while with the lesser diameter socket no space which might receive dust and dirt intervenes between the shell and the wall of the opening through the cover plate. It may readily be understood that, because of the very slight tolerance permitted in the diameter of the openings, the accurate positioning of the cover plate, effected by the engagement of boss 18 in tubular post 10, and of deck-carried pins 20 in cover plate recesses 19, becomes a matter of primary importance.

Between the openings 17 through the cover plate there is a shaped depression 29, from which a screw hole 30 extends downwardly into the boss 18. This arrangement is adapted to receive and secure a plate bearing in condensed form identifying data as to the fuses which are to be received in the associated sockets, or as to the circuits to be protected by the fuses.

The fuse cabinet as a whole is, as may be seen from Fig. I of the drawings, of particularly pleasing appearance even when the cabinet door lies in open position exposing the dished region of the true cover of the cabinet, and the upper face of the fuse mounting assembly in the cabinet. The fuse socket arrangement and mounting is such as to provide a maximum of simplicity, convenience, and circuit protection, and one which is peculiarly adapted to the use of tamper-proof fuse sockets. In this latter connection it should be noted that the use of individual socket-carrying decks, and individual terminal-carrying blocks, readily permits the building up within the cabinet of an assembly comprising fuse sockets of differing size, or formation, adapted to receive fuses of variant capacity.

Considering the cabinet itself, the provision of lath-receiving channels on opposite side walls of the cabinet body, and the provision of perforated lugs on all four corners of the cabinet body, permits it to be built into a wall in any locality thereof. That is, in an interval between studding members, the lugs may be used to attach the cabinet to both adjacent studding members, while receiving the ends of the laths severed to permit insertion of the cabinet in the channels carried by its side walls if the positioning of the studding members so permits. Otherwise considered, the channel and lug arrangement permits attachment of the cabinet to a single studding member lying to either side of the cabinet.

I claim as my invention:

In a fuse cabinet primarily comprising a hollow rectangular body having a floor and upstanding side walls and a cover applicable to the cabinet body to overlie the same, outwardly open channels extended along two opposed side walls of the cabinet body to embrace structural members to both sides of the cabinet, and perforate lugs projected beyond the area of the cabinet body at the several corners thereof each in a plane parallel to the plane of the adjacent side wall channel to provide attachment to structural members presenting for attachment of the cabinet surfaces parallel to the channels.

ALFRED CORBETT.