

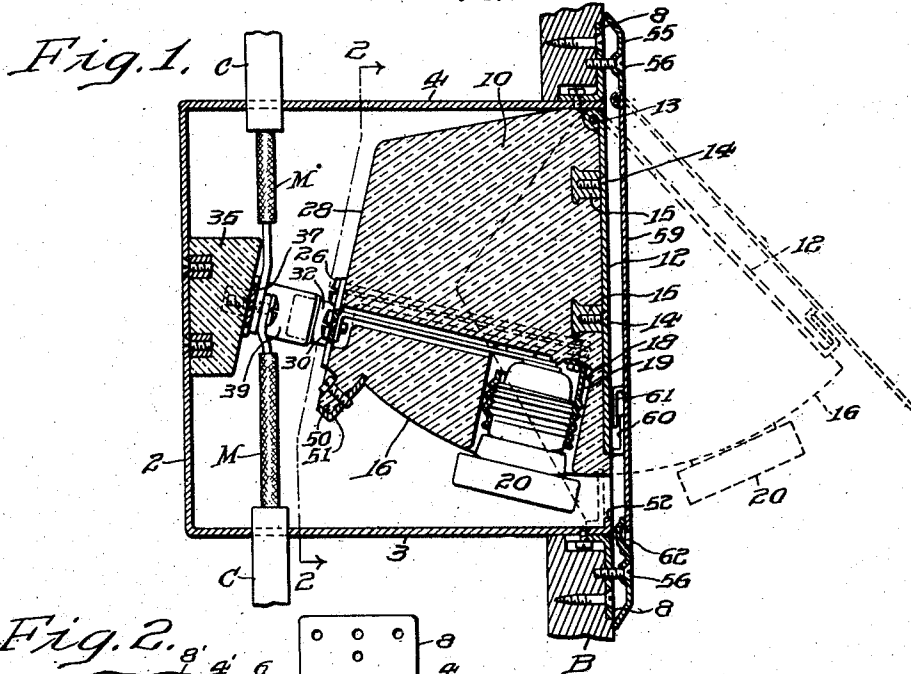
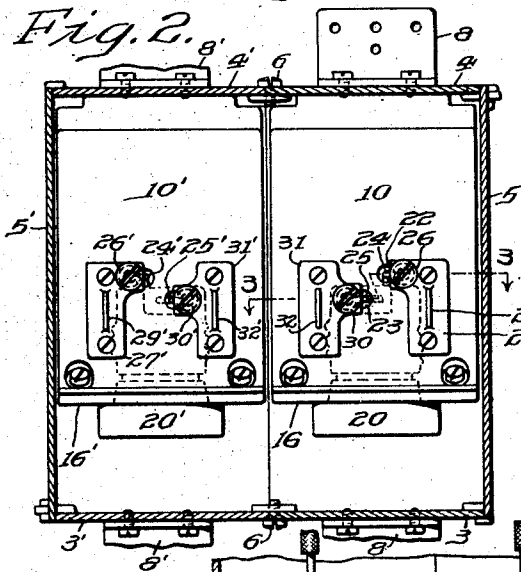
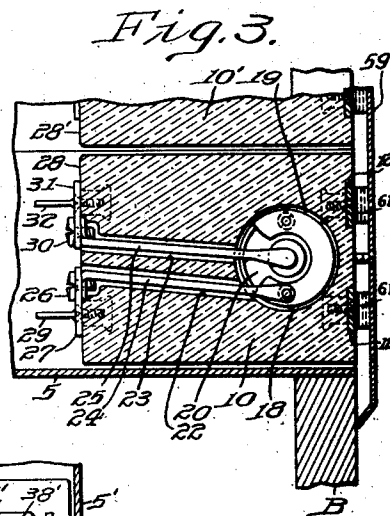
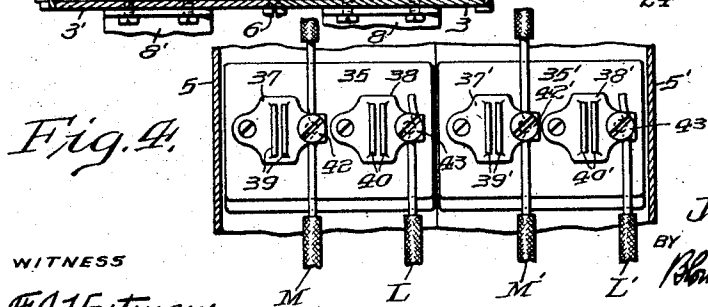
July 27, 1926.

1,594,010

J. GASPARI

COMBINED FUSE HOLDER AND CUT-OUT

Filed May 10, 1922



WITNESS

H. J. Hartman,

INVENTOR

Joseph Gaspari.

BY *Robert M. Hill*

ATTORNEYS

Patented July 27, 1926.

1,594,010

UNITED STATES PATENT OFFICE.

JOSEPH GASPARI, OF PHILADELPHIA, PENNSYLVANIA.

COMBINED FUSE HOLDER AND CUT-OUT.

Application filed May 10, 1922. Serial No. 559,919.

My invention relates to a combined fuseholder and cutout for use in electric circuits and more especially in electric wiring installations in dwellings and the like, a principal object of the invention being to provide a device of this character which may be installed at any suitable point in the building for the purpose of enabling a local circuit to be taken from the main circuit and protected with suitable fuses adjacent the point at which the local circuit is to be employed.

A further object of my invention is to provide a fuseholder and cutout conveniently arranged for installation in the baseboard of the room in which it is to be located and which, when so installed, is adapted to permit the convenient removal and replacement of the fuses normally disposed in the device and operative to protect the local circuit which, through the medium of the device, is taken off from the mains at the point where the fuseholder and cutout is located.

A still further object of the invention is to provide a device of the character aforesaid so constructed and arranged that, during the operation of inserting or removing the fuses, the contacts, binding posts and other current carrying elements disposed within the device are entirely out of the way of and protected from possible contact with the operator's hands or with the fuses which are being inserted or removed, thus enabling the latter to be changed without danger of effecting a short circuit.

A still further object of the invention is to provide a combined fuseholder and cutout of the character and adapted for the purposes to which reference has hitherto been made, in which the relatively movable parts and particularly the cooperative switch members are always maintained in properly aligned relation with each other, and which readily lends itself to assemblage in a plurality of units by "ganging" as it is termed in the art, thus facilitating the taking off of a plurality of local circuits from the mains at a single point and the protection of each of said circuits with suitable fuses.

The invention further includes all of the other various objects and novel features of construction and arrangement which are apparent from, or to which more definite reference will be made, in the following description taken in connection with the ac-

companying drawing in which I have illustrated one embodiment of my invention in a form suitable for taking off a single two-wire local circuit from a pair of adjacent mains.

In the said drawing Fig. 1 is a vertical section through the device in the central plane of one of the fuse plugs with certain parts in elevation and showing the device in full lines in operative position in a baseboard, the position of certain of the parts during the operation of removing or inserting fuses being also indicated in dotted lines. Fig. 2 is a section of the device shown in Fig. 1 substantially on the line 2—2 in said figure and looking in the direction of the arrows; Fig. 3 is a fragmentary section substantially on line 3—3 in Fig. 2 and with certain parts shown in elevation and Fig. 4 a fragmentary front elevation of the switch finger supporting blocks and adjacent parts. Like numerals are employed to designate the same parts in the several figures.

In the preferred manner of carrying out the invention a single fuse plug of suitable form is employed to protect each wire of each local circuit and arranged in conjunction and association with certain elements including parts adapted to form a section of the box or casing in which the device when operatively assembled is enclosed so as to form an individual, unitary structure and in such manner that any desired number of the units may be combined into a single gang of suitable character to enable the desired number of local circuits, each of either two-wire or three-wire type, to be taken off from the mains. To enable those familiar with the art to comprehend and practice the invention, I have therefore illustrated in the accompanying drawing and will now proceed to describe, a form of the invention suitable for taking off a single, two-wire local circuit from a pair of mains, under which conditions a pair of the said units are employed and assembled in interlocked and associated relation as will hereinafter more fully appear.

In the precise embodiment illustrated, the invention comprises a casing of cast or sheet metal. Preferably, and as shown, this casing is formed from a pair of sections each comprising a back 2, bottom 3 and top 4, the sections being arranged for interlocking engagement in conjunction with the pieces

forming the ends 5 and adapted to be secured together by screws 6 in the well known manner common to casings for switch boxes and other electrical devices, the arrangements of the parts being such that any desired number of the sections may be locked together side by side so as to extend the casing to any required length. The top and bottom walls of each section may support removable lugs 8 by means of which the casing may be operatively secured in a suitable aperture formed in a baseboard B or the like in a manner which will be readily understood by those familiar with the art, the front or open end of the casing being preferably, under these circumstances, disposed substantially flush with the exposed face of the board. Each of the sections of the casing preferably adjacent its rear wall is provided with suitable apertures for the reception of conduits C, through which the mains M, M' may be led into the casing.

Each of the sections composing the casing is arranged to house similar elements now to be described, and to avoid repetition, reference will therefore be made more particularly to the section lying adjacent the right hand edge of the paper in Fig. 2, the corresponding parts adjacent the other section being designated by similar numbers but with the addition of a prime (').

Disposed in each section of the casing is a fuse block 10 of porcelain or other suitable insulating material conveniently slightly narrower than the section and hinged adjacent the forward end of the top or bottom wall, as shown adjacent the top wall, to swing from normal position as shown in full lines in Fig. 1, in which it is entirely disposed within the casing, preferably with its front face adjacent the open end thereof, to open position as shown in dotted lines in said figure, in which it is partially outside of said casing. The hinging of the block may be accomplished in any suitable manner, conveniently by providing one or more straps 12 pivoted at one end on a pivot 13 secured in lugs disposed at the forward end of the top 4 and extending over the front face of the block to which the strap is secured by screws 14 extending there-through and into sockets 15 let into the block or in any other suitable way.

The major portion of the lower face 16 of the block may conveniently follow an arc of which the pivot 13 is the approximate center, and extending inwardly and upwardly from the forward part of this face is a socket 18 in which is disposed a metallic threaded shell 19, which may be of the ordinary construction, adapted to receive a standard fuse plug 20. Formed within the block and extending rearwardly from adjacent the socket are a pair of suitable

conduits 22 and 23 in which are respectively disposed conducting plates, bars or wires 24 and 25, the forward end of the bar 24 being secured to and in contact with the shell 19 and the corresponding end of the bar 25 being arranged to contact with the central contact stud of the fuse when the latter is screwed into position in the shell. The opposite end of the bar 24 is connected, as by a screw 26, with a metallic base 27 secured on the rear face 28 of the block 10 and carrying a rearwardly and outwardly extending switch blade 29. In a similar manner, the corresponding end of the bar 25 is connected, as by a screw 30, with a base 31 carrying a switch blade 32 disposed in laterally spaced relation with the blade 29.

Arranged in the rear part of the casing and preferably secured to the wall 2 thereof is a supporting block 35 of suitable insulating material having its forward face preferably disposed in substantially parallel relation with the rear face 28 of the block 10 when the latter is in normal position, and upon this supporting block are suitably secured separated bases 37, 38 from each of which a pair of spaced fingers or clips 39 and 40 respectively project toward the fuse block, the fingers 39 being positioned to receive the blade 29 and the fingers 40 to receive the blade 32 when the fuse block is in normal position. In operation one of these bases, conveniently 37, is connected through the medium of a binding screw 42 with one of the main wires M and the other base by the binding screw 43 with a local circuit wire L, from which it will be apparent that when the fuse block is in normal position current from the main wire will pass through the fingers 39 and blade 29 to the shell 19, thence through the fuse plug, bar 25, blade 32 and fingers 40 to the local circuit wire L which leads from the casing through a conveniently disposed opening in its wall. In a corresponding manner current from the other main M' will pass through the corresponding parts adjacent the block 10' to the other local wire L'.

In order to limit the forward swinging movement of the fuse block with respect to the casing, the former is provided with a stop 50 which is preferably faced with a metallic facing 51, the latter being adapted to engage a lug 52 disposed at the forward end of the bottom 3 when the fuse block is swung forward for a predetermined distance, the position of the socket 18 in the block being such that when the facing 51 is in contact with lug 52, the fuse is considerably in front of the forward edge of the casing and in a position to be readily removed from or inserted into the shell 19. It will be noted, however, that when the block is in extreme forward position it is

effective to substantially close the opening in the casing thereby cutting off access to its interior and preventing the fingers of the operator during removal or insertion of the fuse from coming into contact with any of the charged elements at the rear of the casing or from striking the blades 29 and 32 which might result in throwing them out of alignment with their respective fingers.

In order to provide a suitable finish, the open end of the casing is normally covered under operative conditions by a suitable face plate 55 of stamped or cast metal which is preferably secured by screws 56 to the lugs 8 carried by the casing, the plate being provided with a suitable hinged door 59 giving access to the fuse block, and means are preferably provided effective to cause the fuse block and door to swing in unison when the latter is opened, said means conveniently comprising upwardly turned hooks 60 disposed on each of the straps 12 and similar downwardly turned hooks 61 arranged on the inside of the cover in such position that the ends of the hooks 60 and 61 overlap each other. Thus, when the cover is lifted by the insertion of a suitable instrument in a small aperture or depression 62 in the plate adjacent the free edge of the cover, the hook 61 by engagement with the hook 60 will serve to swing the fuse block in correspondence with the movement of the cover, the hooks meanwhile having a slight relative movement by reason of the slight space between the centers about which the respective movements of the cover and the block take place.

While I have shown a form of the invention suitable for taking off a two-wire local circuit from a two-wire main circuit and in which but a pair of the fuse blocks are employed, both blocks being suitably connected with a single cover 59 so as to swing therewith in unison and thus simultaneously interrupt the flow of current in both wires of the local circuit when the cover is lifted for the insertion or removal of fuses, it will of course be understood that by adding additional sections or units to the casing each containing a fuse block and associated parts, the invention may be readily adapted for use in three-wire systems or for taking off a plurality of local circuits each consisting of two or more wires in correspondence with the number of wires in the mains, and that under such circumstances the cover in the face plate may either be of unitary construction and arranged to lift all of the fuse blocks at once or may be made in sections and each section arranged to move only the blocks adjacent thereto. With such an arrangement of the parts, when a single section of the cover is lifted the flow of current through

the local circuit protected by the fuses which have been moved will be alone interrupted, while as the particular fuse blocks which have been raised are effective to prevent access to the interior of their respective casing sections and as the other sections of the cover are closed, all danger of coming into contact with any charged elements during the operation of changing the fuses in the particular sections which have been lifted is entirely avoided.

Moreover, although in the drawings I have shown the fuseholder and cutout disposed in the building wall in such manner that the fuses are exposed by lifting the cover vertically, it will of course be understood that the device may be disposed in the wall in any other way, so that, for example, the fuses might be exposed by a downward or lateral movement of the cover and that in consequence my employment of such terms as "upper," "lower" or "lifting" is in a relative sense only and with reference to the device when disposed in the manner illustrated.

While, as hitherto stated, I prefer to form the casing from a plurality of sections each containing a fuse block and associated parts in order to conveniently permit the building up of a single gang having the requisite number of fuses for any particular set of conditions, if desired a single unitary casing of suitable size to contain the requisite number of fuse blocks may be employed instead, under which circumstances a single fuse block having the requisite number of apertures for the total number of plugs may conveniently be utilized in place of the plurality of separate blocks operatively united as in the preferred form.

Additionally, while I have herein described with considerable particularity certain instrumentalities and elements as embodied in a preferred form of my invention and for the performance of certain functions, I do not thereby desire or intend to limit myself to any precise details of construction or arrangement of the several parts as the same may be varied and modified in minor particulars as may be deemed advisable without departing from the spirit and scope of the invention as defined in the appended claims.

Having thus described my invention, I claim and desire to protect by Letters Patent of the United States:

1. In a device of the class described, the combination of a casing having top, bottom, side and rear walls and entirely open on its front side opposite the rear wall, a block of insulating material hingedly disposed adjacent to the casing and arranged to swing through said open front side from a position wholly within the casing to a position partially without the casing and adapted to

substantially close said open front side when in said latter position, means carried by the block for receiving a fuse plug, and means for limiting the movement of said block
5 with respect to the casing.

2. In a device of the class described, the combination of a casing having an opening and adapted to be positioned in a baseboard or the like, a block hinged adjacent the casing and arranged to swing through said opening from a position wholly within the casing to a position partially outside thereof, means carried by the block for receiving a fuse plug, a face plate provided with a swinging door, means for securing the plate adjacent the casing to cover said opening, and means connecting said block and said door whereby movement of the latter with respect to the plate will cause a corresponding movement of the block.
10 15 20

3. In a device of the class described, the combination of a substantially rectangular casing having an opening, a block hinged adjacent the edge of one wall of the casing to swing through said opening from a position within the casing to a position partially outside thereof, means carried by the block for receiving a fuse plug, a face plate having a hinged door adapted to cover said opening, means for securing the plate to the casing, and means connecting said door and said block whereby movement of the door with respect to the plate is operative to cause corresponding movement of the block with respect to the casing.
25 30 35

4. In a device of the class described, the combination of a substantially rectangular casing entirely open at the front, a plurality of contact fingers supported by the casing, a block of insulating material hinged adjacent the edge of one wall of the casing to swing in a predetermined arc through said open front from a point within the casing to a position partially outside of the casing, means carried by the block for receiving a fuse plug, a plurality of contact blades disposed on the block and cooperative with said contact fingers, means operative to connect said blades through a fuse when posi-
40 45

tioned in said fuse receiving means, and means for arresting the movement of the block in one direction at a point in which the block is operative to substantially close said open front of the casing and thereby prevent access to the interior of the casing.
50 55

5. In a device of the class described, the combination of a casing having top, bottom and rear wall and entirely open at the front, a plurality of contact members supported from said rear wall, a block of insulating material hinged to one of the other walls and adapted to swing through said open front from a position wholly within the casing to a position partially outside thereof, a fuse plug receptacle carried by said block and positioned therein so as to be outside of the casing when said block is at the limit of its outward movement with respect thereto, a plurality of contact members disposed on the block and each cooperative with a pair of said first mentioned contact members, and means for connecting said last mentioned members through a fuse plug when positioned in said receptacle.
60 65 70

6. In a device of the class described, the combination of a casing adapted for interlocking engagement with other casings to form a gang and having a rear wall, upper and lower walls and open on the side opposite the rear wall, a block of insulating material hinged to one of the last mentioned walls to swing in and out of said open side and to substantially fill said open side when in one position, a fuse plug receptacle carried by the block, switch members carried by the casing, switch members carried by the block adapted for cooperation therewith, means for connecting said last mentioned members through a plug when positioned in said receptacle, and means for limiting the outward movement of the block with respect to the casing at a position in which said fuse receptacle is entirely without the casing and said block is operative to substantially close the opening therein.
75 80 85 90 95

In witness whereof, I have hereunto set my hand this 8th day of May, 1922.

JOSEPH GASPARI.