

A. I. FROMAGER AND J. F. SIX.
ELECTRIC SWITCH DEVICE.
APPLICATION FILED JAN. 17, 1917.

1,305,998.

Patented June 10, 1919.
2 SHEETS—SHEET 1.

Fig. 1.

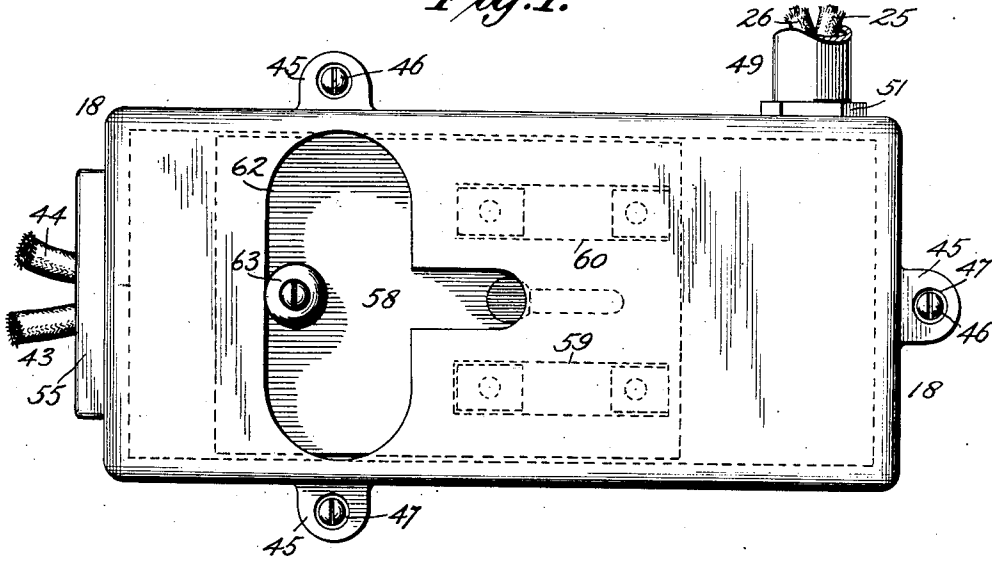
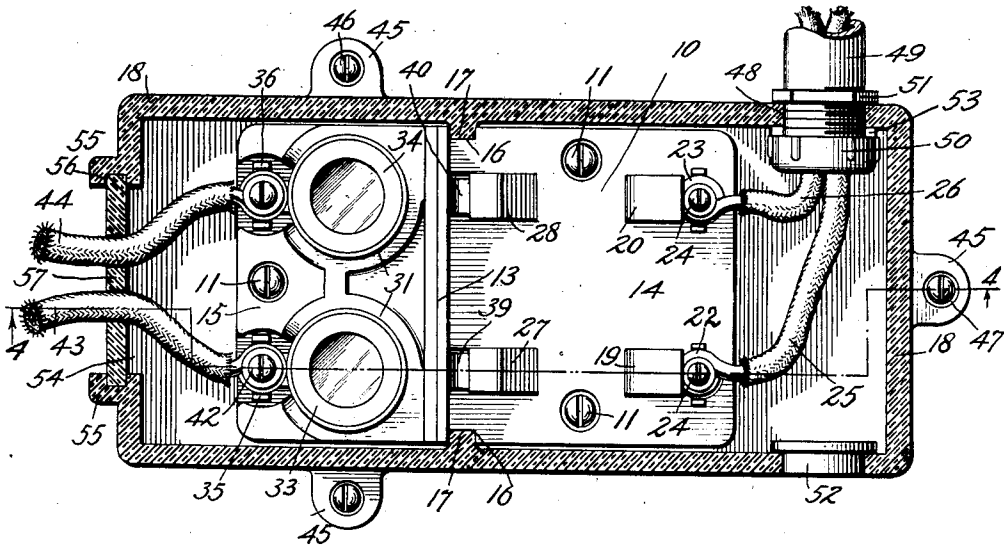


Fig. 2.



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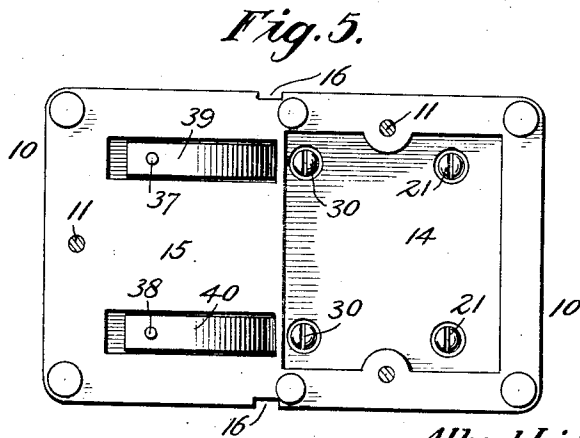
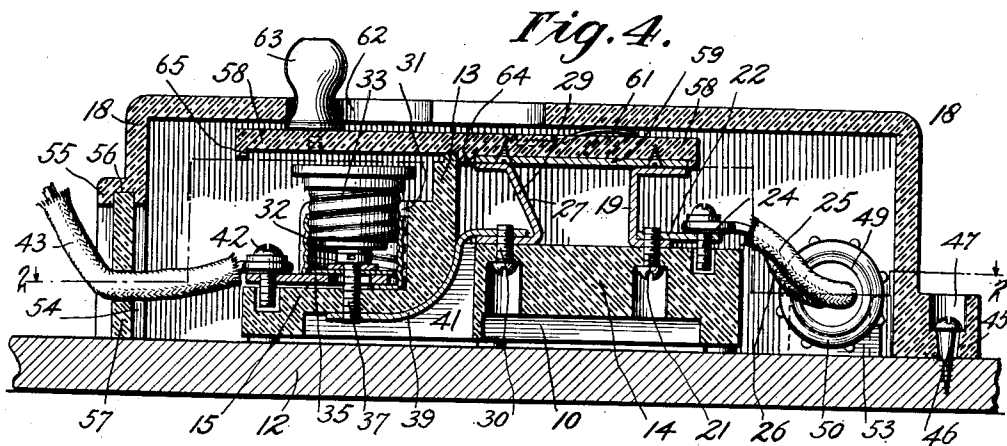
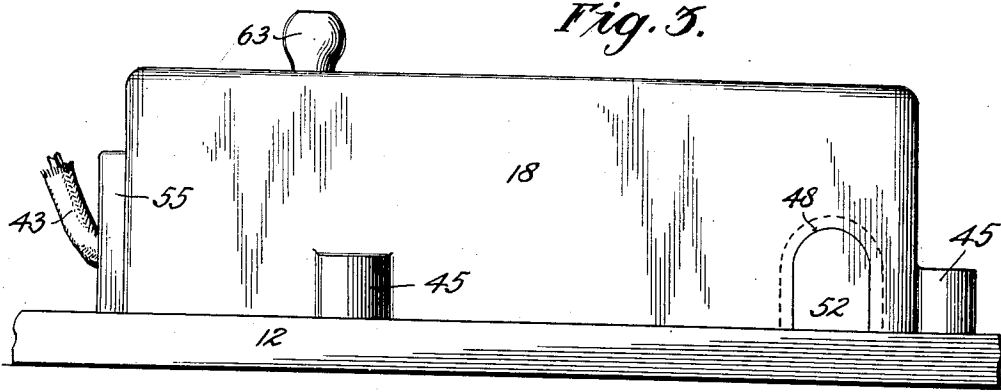
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UNITED STATES PATENT OFFICE.

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ELECTRIC-SWITCH DEVICE.

1,305,998.

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To all whom it may concern:

Be it known that we, ALBERT ISIDORE FROMAGER and JOSEPH FERDINAND SIX, subjects of the King of Great Britain and Ireland, residing at Montreal, in the Province of Quebec, Dominion of Canada, have invented certain new and useful Improvements in Electric-Switch Devices, of which the following is a specification.

10 This invention relates to electric switch devices, and more especially to the block upon which the wires are secured and to the casing for inclosing the same, and has for its primary object the provision of a simple, safe and secure means for the attachment of the main lead wires of an electric circuit and the ends of the service wires, these wires terminating in contact plates that are adapted to be connected by a sliding member for closing the electric circuit from the main lines through the service wires and meter, these terminals being so inclosed by the casing as to render it impossible to make unlawful connections from the main wires around the meter for the purpose of stealing the current. The construction of the device is such that the act of breaking the circuit between the main to the service wires exposes the fuse plugs connected to the service wires for ready access when new ones are to be inserted, and positively cuts out the current from said main wires to the plug, thus permitting a change of fuse plugs without danger of shock to the person making the change.

Another object of the invention is to provide a switch box made of some non-conducting material and of few parts which may be easily put together and sealed to prevent tampering with the current without detection, but which will automatically uncover the fuse plugs to permit their removal or change whenever the switch is opened and the circuit positively cut off from the plugs.

45 With the above as the principal objects in view, the invention consists of the novel construction, combination, and arrangement of parts hereinafter described, pointed out in the appended claim, and illustrated in the accompanying drawings, in which

50 Figure 1 is a top plan view of the complete device,

Figure 2 is a horizontal sectional view of the same on the line 2—2 of Fig. 4,

Fig. 3 is a side elevation of the improved switch device, 55

Fig. 4 is a vertical longitudinal sectional view on the line 4—4 of Fig. 2, and

Fig. 5 is a bottom plan view of the switch.

In the drawings, 10 indicates the block to which the wires are connected, said block being made of any suitable non-conductive material as porcelain and of any convenient size and shape, being shown in the drawings as of rectangular form and of suitable thickness, and having several openings therethrough for the passage of fastening screws or bolts 11 for securing the block to a wall or other stationary support 12. Extending across the block 10 on its upper side about midway between its ends is a vertical partition or wall 13 that divides the block into two portions 14 and 15, the former being at all times covered and has the live main line wires fastened thereto, while the latter portion upon which the service wires are secured is susceptible of exposure at such times as may be desired to insert and remove fuse plugs. In each longitudinal side or edge of the block 10 intermediate the ends of said block is a vertical groove 16, these grooves serving as guides for ribs 17 on the inner sides of a casing 18 which overlies the block and protects the connection from exposure and from unlawful tampering. 85

Near one end of the block 10 are two contacting plates 19 and 20 fastened to said block by screws 21 which pass upwardly through countersunk perforations in the block and are threaded in the contact plates. Each contact plate is formed of a strip of sheet metal, the ends of which are bent at right angles to the central portion, and one of them serving as a means for the threaded connection of the screw 21, the opposite end forming a contact surface for a connecting or switch plate hereinafter described. The screws 21 also extend through short plates of metal 22 and 23 which project beyond the contacts 19 and 20 and are provided with screws 24 or other means for fastening the main line wires 25 and 26 to the plates 22 and 23. 100

Spaced a convenient distance from the contacts 19 and 20 are cooperating contacts 27 and 28 similar to the contacts 19 and 20 but preferably the vertical portions 29 of said contacts are inclined away from the 105

first-named contacts and are preferably slightly more resilient. The contacts 27 and 28 are fastened to the block 10 by screws 30 passing upwardly through the block in a manner similar to the screws 21.

On the opposite side of the partition or wall 13 the block 10 has two upwardly opening chambers 31 which form seats for the sockets 32 of two fuse plugs 33, 34 threaded into said sockets in the usual manner. The sockets are connected to plates 35 and 36 at the bottom of the chambers 31 by screws 37 and 38 which pass downwardly through the block and are threaded into connecting strips 39 and 40 that pass through openings 41 in the block below the wall 13 and upwardly on the opposite side thereof where they are connected by the screws 30 to the respective contact plates 27 and 28. The fastening screws 37 and 38 for the plates 35 and 36 form the center contacts of the sockets 32. The outer ends of the plates 35 and 36 are fitted with screws 42 for connecting the service wires 43 and 44 to said plates.

From the above it will be clear that the main lines wires 25 and 26 have electrical connection with contacts 19 and 20, while the service wires 43 and 44 connect electrically with contacts 27 and 28 through fuse plugs 33 and 34. The connection through the fuse plugs, which are of a common form, being well known, it has not been thought necessary to enter into a detail description thereof.

The block 10 and the connection mounted thereon are protected from interference and tampering, by the casing 18 of box-like form open only on its lower side, which casing is fitted over the block and maintained in proper relation therewith by the rib 17 on its sides which engage the vertical grooves 16 in the block 10. Projecting from two sides and one end of the casing 18 at the open end thereof are lugs 45 through which are formed openings for fastening screws 46, said openings being counter-bored, as at 47, for the insertion of wax or other means for sealing the casing in place after the latter has been secured to the stationary part 12.

At opposite sides of the casing 18 near one end are formed U-shaped openings 48 sufficiently large for the passage into the casing of the end of a pipe 49 through which pipe the main wires 25 and 26 pass. The end of the pipe 49 is held in place by a nut 50 within the casing and a similar nut 51 without the casing threaded on the end of the pipe 49, these nuts being secured tightly against the side wall of the casing 18. The opening 48 on the opposite side of the casing is closed by a block 52 flanged as shown on its inner side. The two openings 48 are made in the casing for convenience, as under certain conditions the pipe 49 may be in such

position as to enter the casing from the opposite side. To close a portion of the opening 48 there is provided a block 53 having a semi-circular upper edge that fits closely against the bottom or under side of the pipe 49.

At the opposite end of the casing 18 is a rectangular opening 54, the sides and top of which are surrounded by an outwardly projecting flange 55 having a groove 56 on its inner side that forms a guide or channel-way for a plate 57 adapted to close the opening 54 and having two openings there-through for the passage of the service wires 43 and 44. This plate 57 slides freely into and out of the channel-way 56 when the casing 18 is placed over the block 10 or removed therefrom and forms a secure protection against the introduction of any means into the casing for stealing the current.

Above the block 10 and slidable longitudinally on the top of the wall 13 is a plate 58 made of insulating material and serving as a cover or protection for the contacts 19, 20, 27, and 28 and the fuse plugs 33 and 34. This plate has secured on its under side two longitudinal metal strips 59 and 60 of a sufficient length to extend from the contacts 19 and 20 to the contacts 27 and 28, thus bridging the contacts and conducting the current from the main wires 25 and 26 to the service wires 43 and 44. The strips 59 and 60 are held against the contacts by a spring 61 fastened upon the upper side of the plate 58 and bearing at its free end upon the under side of the top of the casing 18 which is but a short distance above the plate 58. Through the top of the casing 18 immediately over the fuse plugs 33 and 34 is an elongated transverse opening 62 of a size sufficient to permit the removal and insertion of the fuse plugs but does not extend to the opposite side of the wall 13. A handle 63 is fastened to the plate 58 and projects upwardly through the opening 62, said handle being used for the purpose of moving the plate endwise to open the circuit and expose the fuse plugs. The movement of the plate 58 is limited by stops 64 and 65 depending from the under side of the plate and adapted to contact with the wall 13 at each limit of movement of said plate.

From the above it will be clear that when the plate 58 is in the position clearly represented in Fig. 4 the circuit from the main wires will be closed to the service wires through the strips 59 and 60 which bear on the contacts connected to the terminals of said wires. At the same time the plate extends over the fuse plugs and completely covers the same, thereby protecting any one from receiving a shock through grasping the plugs to remove them or through the insertion of new plugs with the current alive

and passing to the service wires. When, however, it is necessary to change or remove a fuse plug, the plate 51 is moved in a direction to uncover the opening 62, said movement being sufficient to cause the strips 59 and 60 to pass beyond the contacts 27 and 28 and thus open the circuit before the uncovering of the opening 62. It follows therefore that further movement of the plate 58 to expose the fuse plugs will increase the distance between the contacts and thus insure a positively dead condition of the service wires 43 and 44 and the switch plugs. At its limit of movement to expose the fuse plugs the edge of the plate 58 will be substantially in line with the side of the wall facing the fuse plugs and extending in the opposite direction over the contact terminals of all the wires, thus making it impossible to gain access in any manner to the live ends of the main line wires for the purpose of shunting the circuit around the meter should such be attached to the service wires and thereby all possibility of using the current unlawfully is prevented. A meter adapter of any well known type will be provided to cover and seal the service wires from its emergence from the casing 18 to its connection with the meter. This adapter forming no part of the present invention has not been illustrated.

What we claim is:

In a device of the class described, the com-

bination with a casing formed of non-conducting material having an opening in the top thereof, a sliding plate of non-conducting material within said casing immediately below the top thereof adapted to cover and uncover said opening in the casing, a block of non-conducting material supported within the casing at the bottom thereof, and having an integral partition intermediate its ends which extends entirely across the casing and upwardly from the block to the underside of said sliding plate and forming a support therefor, said partition dividing the casing into two chambers, one of which only is accessible through the opening in the top of the casing, lugs projecting inwardly from the sides of the casing and bearing against said partition to insure the proper position of the block with respect to the opening in the casing, spaced contact members secured in pairs to said block, a conducting wire connected to each of said contact members when the plate is moved to close the opening in the casing and to break contact between said members when the opening is uncovered.

In testimony whereof we affix our signatures in presence of two witnesses.

ALBERT ISIDORE FROMAGER,
JOSEPH FERDINAND SIX.

Witnesses:

EDMOND T. LAJOIE,
M. C. MURRAY.