

No. 743,471.

PATENTED NOV. 10, 1903.

L. W. DOWNES.
FUSE CASING AND SWITCH.

APPLICATION FILED JAN. 12, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

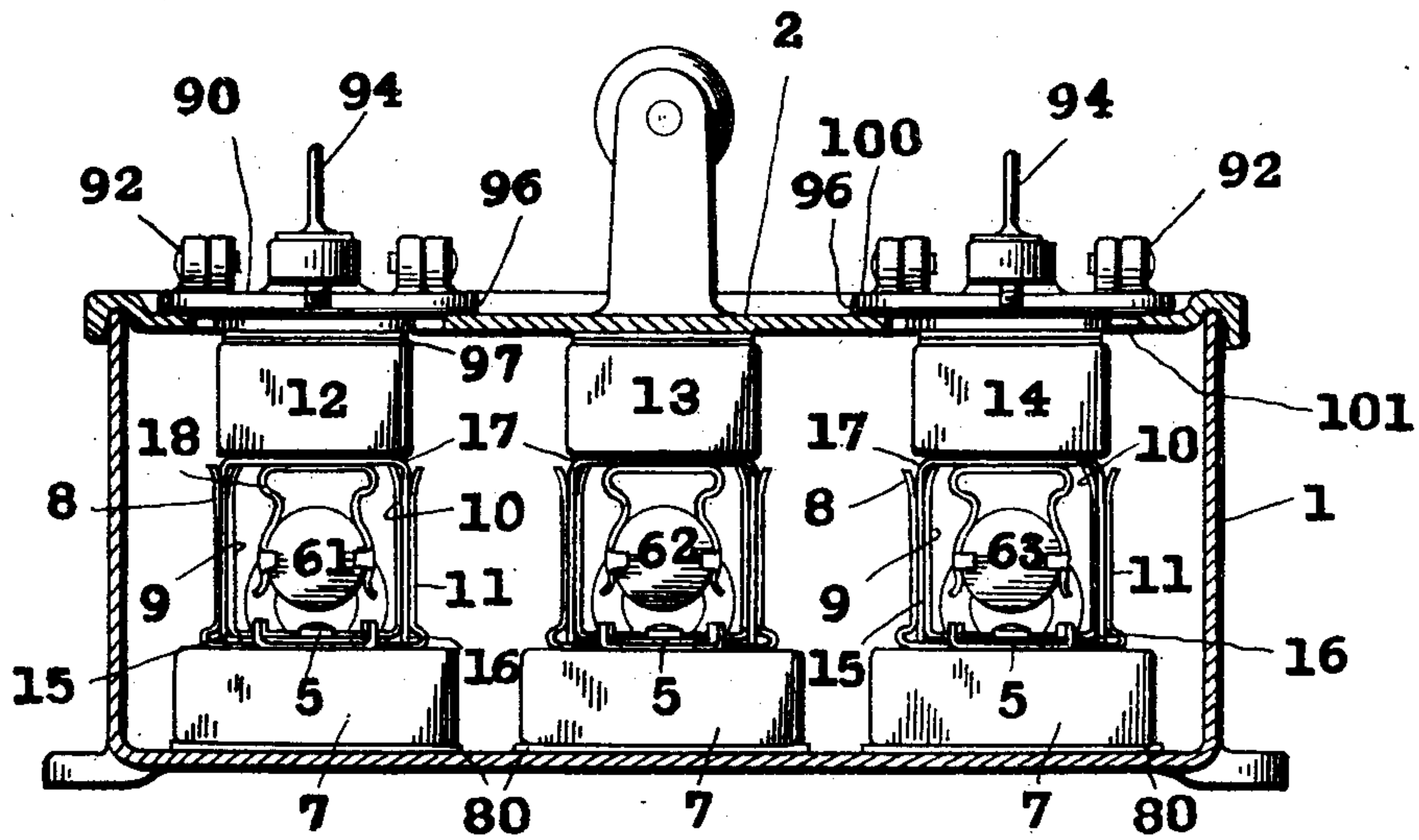


FIG. 3.

Witnesses

Chas. K. Davie.
[Signature]

Louis W. Downes Inventor

By *Maurice Laurence* Attorneys

UNITED STATES PATENT OFFICE.

LOUIS W. DOWNES, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE
D. & W. FUSE COMPANY, OF PROVIDENCE, RHODE ISLAND, A CORPO-
RATION OF RHODE ISLAND.

FUSE CASING AND SWITCH.

SPECIFICATION forming part of Letters Patent No. 743,471, dated November 10, 1903.

Application filed January 12, 1903. Serial No. 138,704. (No model.)

To all whom it may concern:

Be it known that I, LOUIS W. DOWNES, a resident of Providence, Rhode Island, have invented a new and useful Improvement in Fuse Casings and Switches, which invention is fully set forth in the following specification.

In my application filed December 13, 1902, Serial No. 135,113, I have shown and described certain improvements in casings or boxes for inclosing a plurality of electric fuses or cut-outs adapted to be included in two or more circuits or in two or more branches of one and the same circuit passing through said casing, the prominent features of said improvements being, first, that one or more of several fuses associated with one and the same inclosing casing or box may be withdrawn from its or their circuit-terminals without withdrawing the remaining fuse or fuses from its or their circuit-terminals, so that one circuit passing through the box may be interrupted or a new fuse inserted therein if said circuit has already been interrupted by blowing of the fuse without breaking another circuit or other circuits passing through another fuse or other fuses; second, that the fuses are so associated with the cover of the inclosing casing or box that by opening said cover the fuses may be withdrawn to simultaneously break all circuits passing through the box. In another aspect the improvements set forth in said application are described as constituting an improved switch comprising two separable members adapted when brought together to electrically connect two or more pairs or sets of circuit-contacts by conducting elements associated with one of the members in such manner that one of said elements may be withdrawn while another element or other elements is or are left in circuit.

My present invention relates to a somewhat different and preferable construction to that illustrated and described in my earlier application; but it embodies the broad and prominent features of construction set forth in said application.

The present invention will be more fully understood by reference to the accompanying

drawings, showing one embodiment thereof, wherein—

Figure 1 is a top plan view of the box closed. Fig. 2 is a sectional view, the cover, which is partly opened, and the parts associated therewith being shown in elevation; and Fig. 3 is a sectional view at right angles to Fig. 2.

Referring to the drawings, 1 is a box or casing, and 2 a lid or cover hinged thereto.

3 is a thumb nut and screw for securing the cover in its closed position.

4 represents porcelain bushings, through which circuit-conductors enter the box to the binding-posts 5 and 6, of which there are three of each shown in the drawings.

7 7 are porcelain blocks secured to the bottom of box 1 with interposed layers of felt 80. On each end of each block 7 and in electrical connection with the respective binding-posts are mounted two U-shaped pieces, one within the other, forming two sets of opposing contact-blades 8 and 9 and 10 and 11.

12, 13, and 14 are porcelain blocks associated with the cover in a manner hereinafter described. At each end of each of these blocks is secured a U-shaped contact-piece 17, the arms of which form contact-blades 15 and 16, the former, 15, adapted to enter between blades 8 and 9, heretofore referred to, and the latter, 16, adapted to enter between blades 10 and 11. Secured to each contact-piece 17, between the arms thereof, is a spring contact-clip 18, adapted to embrace and make electrical contact with a metallic cap 19, of which there is one at each end of the inclosed fuses 61 62 63, which are thus removably held in place. Block 12 is secured to the under side of a movable section, plate, auxiliary cover, or lid 90, adapted to close an opening 91 through cover 2 and to be moved relatively to the latter to withdraw block 12 and the parts mounted thereon either entirely or partly through opening 91, so as to disengage the blades 15 and 16 from engagement with the sets of blades 8 and 9 and 10 and 11. As shown in the drawings, the auxiliary cover 90 is hinged at one end to cover 2 at 92 and at its other end carries a thumb-screw 94, adapted to engage a threaded opening 95 in

cover 2 to tightly clamp the auxiliary cover in its closed position over opening 91. A strip of packing 96 (such as felt) along the under edge of the auxiliary cover bears against the upper surface of cover 2 adjacent to opening 91 and enables a tight yielding joint to be made. A layer 97 of felt or similar material is interposed between block 12 and auxiliary cover 90. The foregoing description with reference to auxiliary cover 90 also applies to a second auxiliary cover 100 for opening 101 and to which block 14 is secured. When thumb-nut 3 and its screw are disengaged from cover 2, it may be swung open on its hinges 20 20 to simultaneously withdraw all of the fuses from circuit.

The construction illustrated and described is particularly adapted to a three-wire system, such as a three-wire electric-lighting system, in which, for example, 61 may be considered to be the fuse for the positive conductor, 62 the fuse for the neutral conductor, and 63 the fuse for the negative conductor.

Assuming that an abnormal current through the positive conductor has blown fuse 61, thereby extinguishing a portion of the lights of the system—say the lights in one side of a large store—it is desirable to insert a new fuse without breaking the negative conductor, and thereby extinguishing the remaining lights of the system—say the lights in the other side of the store—which would leave the store in total darkness. Therefore to insert a new fuse in place of fuse 61 the operator turns thumb-screw 94 to disengage it from its threaded opening 95 and then swings auxiliary cover 90 upwardly on its hinge 92, disengaging contact-blades 15 and 16 from engagement with the contact-blades on block 7. With the auxiliary cover swung back in its open position fuse 61 may be easily withdrawn from its spring-clips 18 and a new fuse inserted, the operation being carried out without disturbing the other fuses and breaking the circuit through the neutral and negative conductors. In case fuse 63 is blown it may in like manner be withdrawn and a new fuse inserted.

As will be apparent, I do not limit myself to the particular construction shown in the drawings, as modifications may be made without departing from the invention.

What is claimed is—

1. In combination, a casing or box having a main cover, an auxiliary cover closing an opening therein, and a conducting element on each cover adapted to close a circuit when its cover is closed and to be withdrawn from circuit when its cover is opened.

2. In combination, a casing or box having a main cover, two separate auxiliary covers closing openings in the main cover, and a conducting element on each auxiliary cover adapted to close a circuit when its cover is closed and to be withdrawn from circuit when its cover or the main cover is opened.

3. In combination, a casing or box having a main cover, two separate auxiliary covers closing openings in the main cover, and a conducting element on the main cover and each auxiliary cover adapted to close a circuit when its cover is closed and to be withdrawn from circuit when its cover is opened.

4. In combination, a casing or box having a main cover, an auxiliary cover hinged to the main cover and closing an opening therein, and a conducting element on each cover adapted to close a circuit when its cover is closed and to be withdrawn from circuit when its cover is opened.

5. In combination, a casing or box having a main cover, two separate auxiliary covers hinged to the main cover and closing openings in the main cover, and a conducting element on each auxiliary cover adapted to close a circuit when its cover is closed and to be withdrawn from circuit when its cover or the main cover is opened.

6. In combination, a casing or box having a main cover, two separate auxiliary covers hinged to the main cover and closing openings therein, and a conducting element on the main cover and each auxiliary cover adapted to close a circuit when its cover is closed and to be withdrawn from circuit when its cover is opened.

7. In combination, a casing or box having a main cover, an auxiliary cover closing an opening therein, and a fuse on each cover adapted to close a circuit when its cover is closed and to be withdrawn from circuit when its cover is opened.

8. In combination, a casing or box having a main cover, two separate auxiliary covers closing openings in the main cover, and a fuse on each auxiliary cover adapted to close a circuit when its cover is closed and to be withdrawn from circuit when its cover or the main cover is opened.

9. In combination, a casing or box having a main cover, two separate auxiliary covers closing openings in the main cover, and a fuse on the main cover and each auxiliary cover adapted to close a circuit when its cover is closed and to be withdrawn from circuit when its cover is opened.

10. In combination, a casing or box having a main cover, an auxiliary cover hinged to the main cover and closing an opening therein, and a fuse on each cover adapted to close a circuit when its cover is closed and to be withdrawn from circuit when its cover is opened.

11. In combination, a casing or box having a main cover, two separate auxiliary covers hinged to the main cover and closing openings in the main cover, and a fuse on each auxiliary cover adapted to close a circuit when its cover is closed and to be withdrawn from circuit when its cover or the main cover is opened.

12. In combination, a casing or box having

a main cover, two separate auxiliary covers hinged to the main cover and closing openings therein, and a fuse on the main cover and each auxiliary cover adapted to close a circuit when its cover is closed and to be withdrawn from circuit when its cover is opened.

13. In combination, a casing or box having a main cover and two auxiliary covers closing openings in the main cover, three sets of contacts in the box, each of the three covers adapted to engage its corresponding set of contacts in the box when its cover is closed

and to be removed from engagement therewith when its cover is open and an electric fuse mounted on each cover and connecting the contacts thereon.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

LOUIS W. DOWNES.

Witnesses:

JAMES H. THURSTON,
EDWIN P. ALLEN.