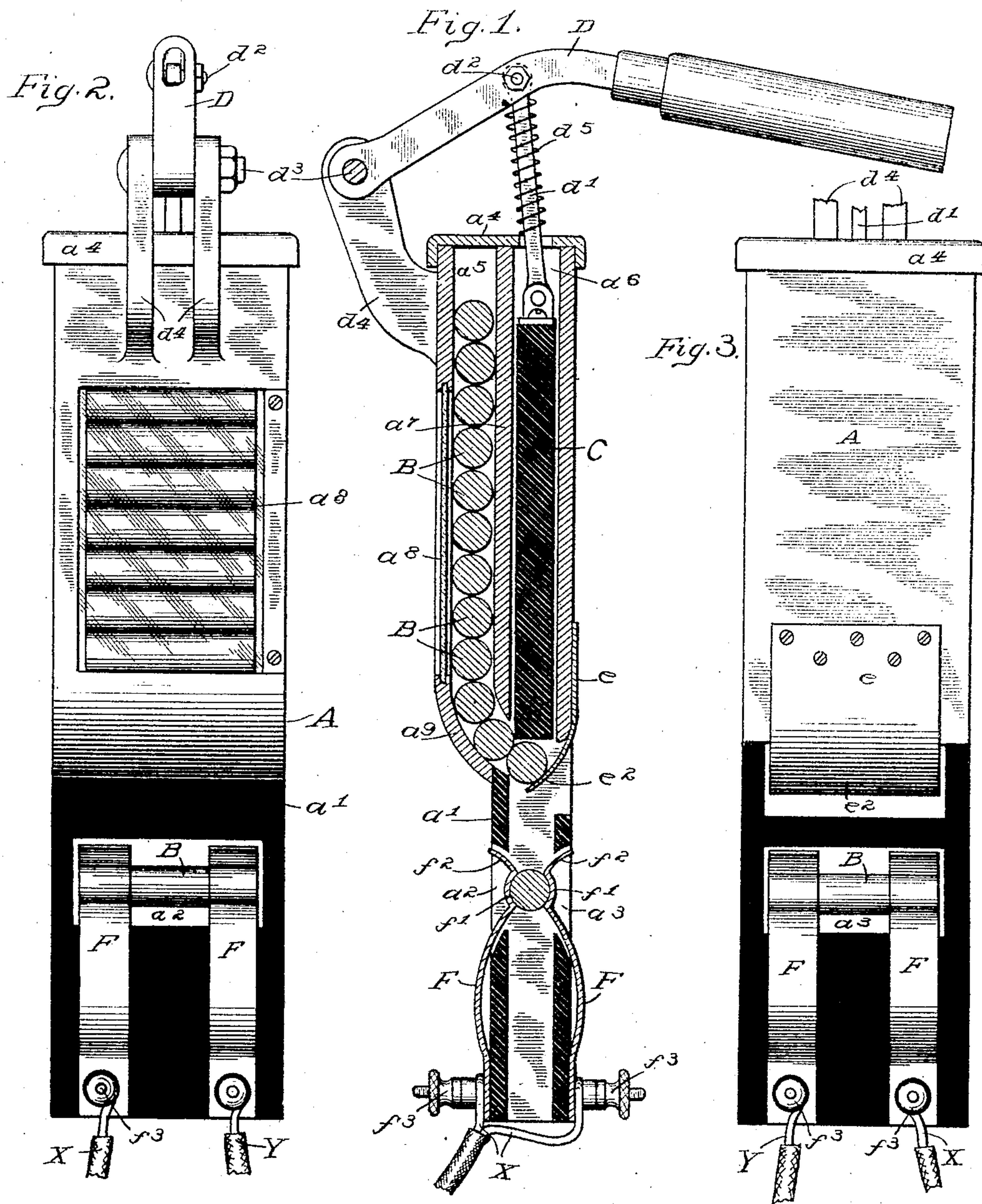


H. G. ADDIE.
 DEVICE FOR REPLACING FUSES.
 APPLICATION FILED APR. 4, 1904.

NO MODEL.



Witnesses:
 John Braunwalder.
 L. G. Snow.

Inventor:
 Herbert F. Addie.
 By Frederick Benjamin
 Att'y.

UNITED STATES PATENT OFFICE.

HERBERT G. ADDIE, OF CRESCO, IOWA.

DEVICE FOR REPLACING FUSES.

SPECIFICATION forming part of Letters Patent No. 772,200, dated October 11, 1904.

Application filed April 4, 1904. Serial No. 201,606. (No model.)

To all whom it may concern:

Be it known that I, HERBERT G. ADDIE, a citizen of the United States, residing at Cresco, in the county of Howard and State of Iowa, have invented certain new and useful Improvements in Devices for Replacing Fuses, of which the following is a specification.

This invention relates to improvements in means for replacing blown-out fuses; and the particular device described is especially adapted for use in connection with the electric equipment of street-railway cars, though it may be utilized with slight modifications in other relations where the fuses are liable to be burned out.

The invention comprises means for holding a fuse in operative position and other means, including a reservoir or chamber containing a supply of fuses, whereby when the operative fuse is blown a new fuse may be easily and quickly inserted in operative position without the necessity of stopping the car and without appreciable interruption to the current in the circuit wherein the fuse is placed.

In the accompanying drawings, which form a part of this application, I have shown a preferred adaptation of my invention in the following views:

Figure 1 is a vertical section through the device complete. Fig. 2 is a front elevation of same, and Fig. 3 is a rear elevation.

Referring to the details of the drawings, A represents a box of the shape shown, which contains the operative parts of the device. At the lower end of the box is a hollow extension a' , made of suitable insulating material, in the front and rear sides of which are provided, respectively, openings a^2 a^3 . The upper end of the box is open and provided with a cover a^4 . Dividing the box longitudinally into compartments a^5 a^6 is a vertical partition a^7 , which extends from the top to near the lower end. The front wall of the box is provided with a glass a^8 and is curved at its lower portion a^9 , thus forming a curved discharge-opening at the bottom of the magazine-compartment a^5 , which merges with the straight opening at the bottom of the compartment a^6 . The magazine-compartment a^5 is adapted to hold a supply of fuses of suit-

able construction, but preferably cylindrical in form, as B, and arranged in single-column form, as shown.

Slidably arranged in the compartment a^6 is a plunger C, of insulating material, to the upper end of which is pivotally connected the lower end of a link d' , the upper end of which is pivoted at d^2 on the handle or lever D. The lever is in the bent form shown and is pivoted at d^3 between the uprights d^4 , secured to the side walls of the box, and is operated by raising and lowering the free end in the usual manner.

To the lower part of the rear wall of the box is secured a flat spring e , the free and curved end e^2 of which projects inwardly through a suitable opening e' in said wall at the throat or entrance to the extension a' , thus forming a yielding obstruction at said point.

Secured to the front and rear walls of the extension a' are spring plates or bands F F, made from flat metal and bent to form curved recesses f' f' , and outward-flaring end portions f^2 f^2 , which project into the extension a' through the respective openings a^2 a^3 . The recesses f' f' when oppositely placed, as shown, form an open socket which is adapted to receive a fuse, and the latter is held in operative position by the partial embrace of the springs. Binding-posts f^3 connect the circuit-wires x y , respectively, to one pair of the spring-plates F, so that the latter are at all times in circuit, and the circuit is closed when a fuse is in position between and embraced by said springs.

When my device is used in connection with an electrically-operated car, I place it where the handle will be readily accessible by the motorman, and its operation will be as follows: The compartment or magazine a^5 being supplied with extra fuses and one fuse being in operative position between the spring-plates F, any excess of current beyond the capacity of the fuse will blow or burn out the latter, thus opening the circuit, whereupon the motorman will depress the handle of the lever, and thus force downwardly the plunger, the lower end of which bears upon the lowermost fuse, whereupon such fuse will be forced past the spring e (which normally holds

the lowermost fuse in readiness for this operation) and into the socket formed by the recesses f' in the spring-plates F and takes the place of the blown fuse, which will be forced out by the incoming fuse. By the expansive action of the spring d^5 on the link d' the plunger will be restored to its normal position and permit the next fuse to drop against the end e^2 of the spring e .

10 While I have shown a cylindrical-shaped fuse, it will be apparent that spherical or other shapes may be used, the fuse *per se* forming no part of this invention.

Having thus described my invention, what
15 I claim as new, and desire to secure by Letters Patent, is—

1. In a fuse-replacer, a box comprising a fuse-holding magazine, and having an extension adapted to receive the fuses singly from
20 said magazine, means for holding the fuses at the entrance of the extension, and means for holding a fuse in operative position within the extension, said last-mentioned means being arranged within the electric circuit.

25 2. In a fuse-replacer, a box comprising a fuse-holding magazine and having an extension adapted to receive the fuses singly from the magazine, yielding means for holding the fuses at the entrance of the extension, means

for holding a fuse in operative position, and
30 means for forcing a fuse from the magazine into operative position.

3. In a fuse-replacer, a box comprising a fuse-holding magazine and having an extension adapted to receive the fuses singly from
35 the magazine, a spring for holding the fuses at the entrance of the extension, means in said extension for holding a fuse in operative position and manually-operated means for forcing a fuse from the magazine into operative
40 position.

4. In a device for replacing fuses, a box comprising a fuse-magazine and a plunger-slideway, said box open at its lower end, an extension registering with the lower end of
45 the box, a spring extending partially across the entrance to said extension, a plunger arranged in said slideway and means for operating same, and yielding plates arranged in said extension and adapted to hold a fuse in
50 operative position.

In testimony whereof I affix my signature in presence of witnesses.

HERBERT G. ADDIE.

Witnesses:

A. D. PERRY,
JAS. GANNON,
D. H. McINTOSH.