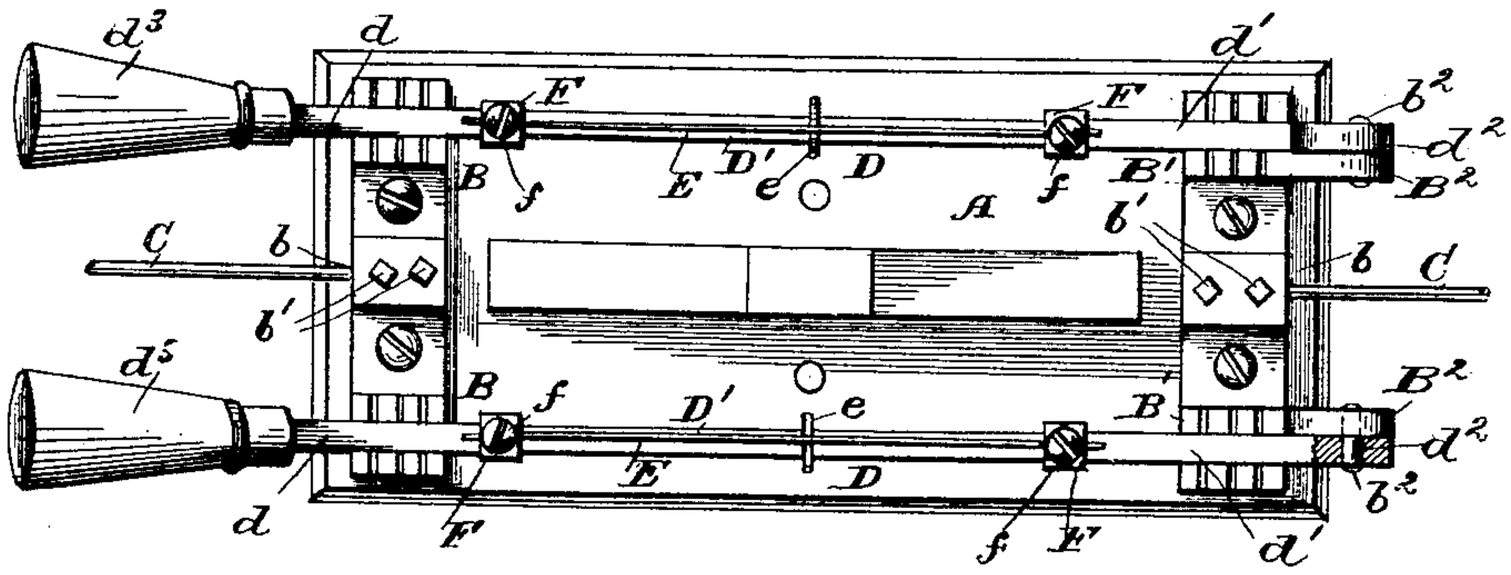
(No Model.)

# W. B. CLEVELAND.

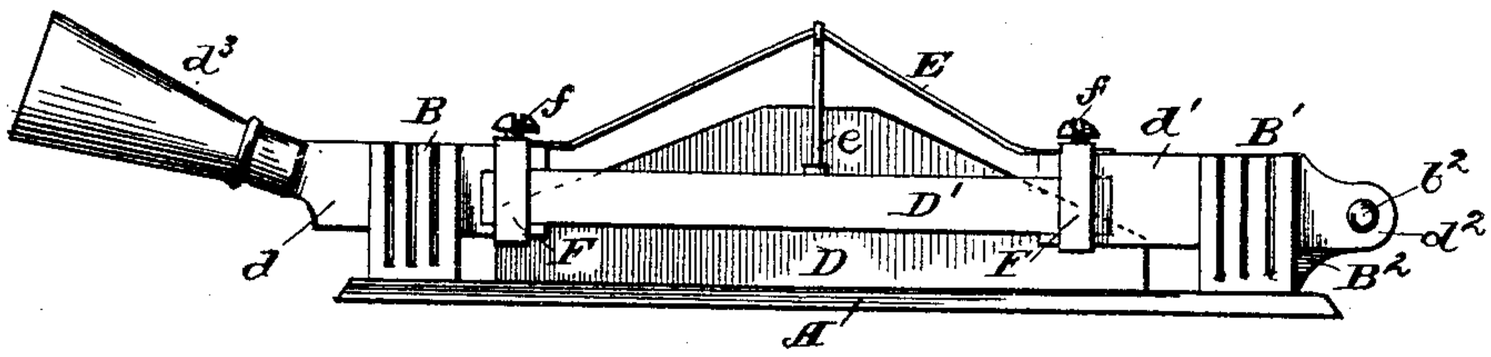
## CUT-OUT SWITCH.

No. 478,689. Patented July 12, 1892.

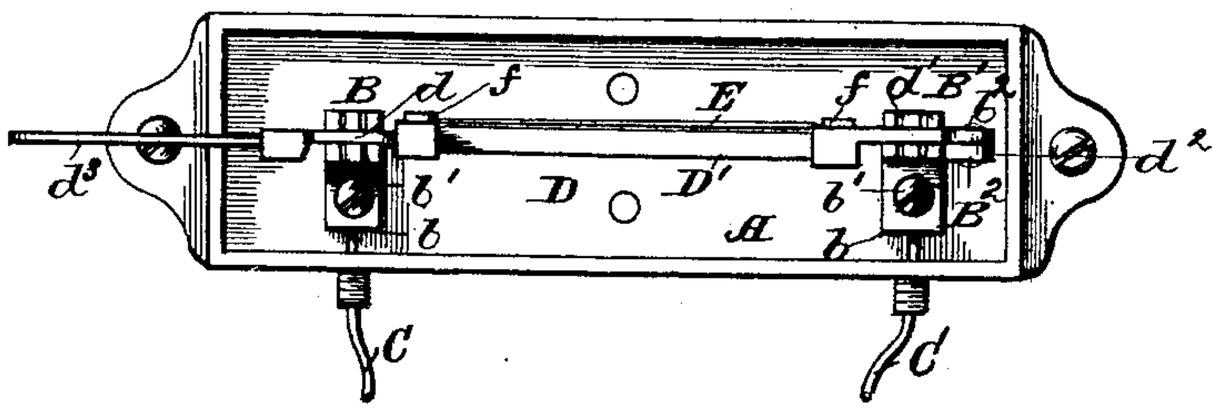
—FIG. I—




—FIG. II—




—FIG. III—




—FIG. IV—


WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM B. CLEVELAND, OF GENEVA, OHIO.

## CUT-OUT SWITCH.

SPECIFICATION forming part of Letters Patent No. 478,689, dated July 12, 1892.

Application filed September 21, 1891. Serial No. 406,413. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM B. CLEVELAND, a citizen of the United States, and a resident of Geneva, county of Ashtabula, and State of Ohio, have invented certain new and useful Improvements in Cut-Out Switches and Fuses, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle so as to distinguish it from other inventions.

The objects of my invention are to provide a combined cut-out switch and fuse, to provide such a device with a detachable switch-lever, and to provide improved means for preventing the flash from the fuse from injuring the switch-arm.

The annexed drawings and the following description set forth in detail one mechanical form embodying the invention, such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents a plan view of one form of my improved combined cut-out switch and fuse; Fig. II, a side view of the same; Fig. III, a plan view of another form of the device, and Fig. IV a side view of the switch and fuse-lever.

In the drawings, the letter A indicates a base of a suitable non-conducting, and preferably non-combustible, material, such as slate or soapstone. Split contacts B and B′, having sockets *b* for the circuit-wires C, are secured upon said base, the sockets being provided with suitable binding-screws *b′* for securing the wires in the sockets. The contacts B′ at one end of the base have ears $B^2$, projecting from them, and said ears have pivots $b^2$, projecting from them and serving to pivotally and detachably connect the switch-levers D. Said switch-levers have non-conducting middle portions D′ and contact portions *d* and *d′*, which may engage the split contacts. One *d′* of the contact portions has an eye $d^2$, which may fit and turn upon the pivot $b^2$ of the stationary contact, the eye being capable of being slipped upon and off from its pivot. The other contact *d* of the switch-lever has an insulating-handle $d^3$ for manipulating it. A fuse E, composed of one or more wires, is secured at its ends to the contacts of the lever, so as to electrically connect said contacts, and said fuse is made of a metal fusible on the passage of a current of greater force than the ampère capacity of the instrument or device connected to the circuit by the switch. In Figs. I and II the fuse is illustrated as clamped at its ends by binding-screws *f*, passing through the ends of stirrups F, which serve, also, to retain the contacts upon the ends of the non-conducting middle of the switch-lever, and the fuse is illustrated as supported away from contact with the lever by means of a prop *e*, which will prevent the flash from the fuse from injuring the lever. In Figs. III and IV the fuse is simply clamped to the contacts by binding-screws *f*.

The eye $d^2$ at the inner end of the switch-lever illustrated in Figs. III and IV is open at one side, so that the lever may be detached by drawing it off from the pivot by a longitudinal movement.

The switch is operative as a common cut-out switch, the currents passing through the contacts and the fuse; but whenever a current of a dangerous power passes through the switch the fuse will melt and cut out the apparatus connected through the switch. As the switch-lever is detachable, it may be opened and pulled off from its pivot, so that a new fuse may be secured in place without danger to the person performing this work of accidentally forming a contact, as would be liable to happen in apparatus where the fuse cannot be replaced excepting upon the connected lever. In apparatus of simple construction, especially such as illustrated in Figs. III and IV, supplemental switch-levers with fuses in place may be kept ready to be inserted in case a fuse should melt.

The prop will keep the fuse sufficiently far off from the insulating portion to prevent the flash from injuring the same, and the fused metal of the fuse will be prevented from dropping down upon or adhering to the insulating middle of the switch-lever, and thus, perhaps, form a conducting-body between the contacts by being supported away from the lever by the prop *e*. (Illustrated in Figs. I and II.)

Other modes of applying the principle of

my invention may be employed for the mode herein explained. Change may therefore be made as regards the mechanism herein set forth, provided the principles of construction respectively recited in the following claims are employed.

I therefore particularly point out and distinctly claim as my invention—

1. The combination of stationary contacts, a switch-lever, contacts upon the same and insulated from each other, a fuse connected to said contacts, and a prop supporting said fuse away from the lever, substantially as set forth.

2. The combination of stationary contacts, a pivot projecting from one of said contacts, a lever provided with registering contacts and having an eye projecting from the end of one of said contacts and detachably pivoted upon said pivot, and a fuse connected to the lever-contacts, substantially as set forth.

In testimony that I claim the foregoing to be my invention I have hereunto set my hand this 14th day of September, A. D. 1891.

WM. B. CLEVELAND.

Witnesses:
WM. SECHER,
M. H. TRUMAN.