(No Model.)

W. F. IRISH.

CUT-OUT.

No. 458,396. Patented Aug. 25, 1891.

Fig. 1

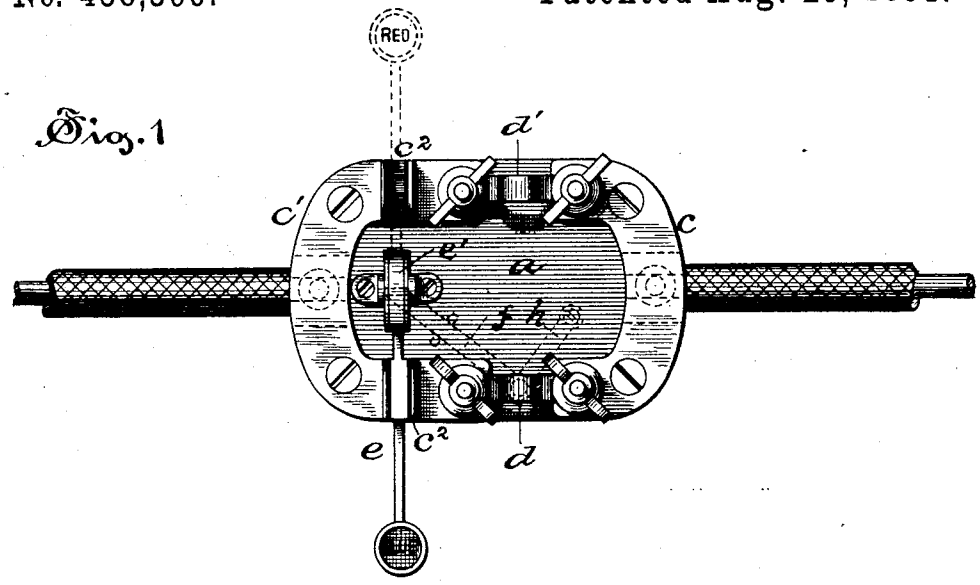


Fig. 2

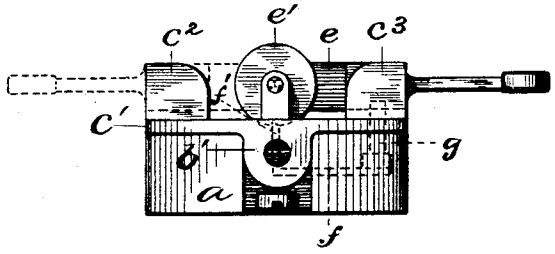
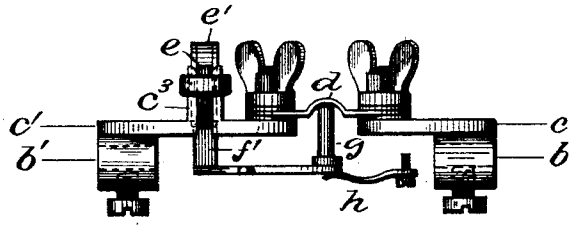


Fig. 3



Witnesses:

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UNITED STATES PATENT OFFICE.

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CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 458,396, dated August 25, 1891.

Application filed September 15, 1890. Serial No. 365,001. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. IRISH, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Cut-Outs, of which the following is a full, clear, and exact specification.

The invention relates to automatic electrical safety cut-outs; and the object is to so construct such a device that the circuit will be opened by the passage of any abnormal current along the conductor and instantly automatically closed after the current has been checked by the opening of the circuit without practically interrupting the circuit or interfering with the work being done, which circuit may again be opened should the excess current continue to flow, and also to provide means which will readily indicate the condition of the safety-plugs.

Referring to the accompanying drawings, Figure 1 is a plan view of the cut-out. Fig. 2 is an elevation looking from one end. Fig. 3 is an elevation of the conducting and operating parts only looking from one side.

In the views, the letter *a* indicates the base, which is formed of an insulating substance, as wood or composition, into any suitable shape. Conducting binding-sockets *b b'*, to which the bared ends of the circuit-wires are connected by any common screws or clamps, are secured to opposite edges of the base and joined with conducting-plates *c c'*, fastened opposite each other upon the face of the base. These conducting-plates are preferably yoke-shaped, and their terminals are joined, usually upon both sides, by means of safety-plugs *d d'*, that are quickly fused by the heat of a current larger than the desired quantity. If desired, one plug *d'* may be omitted and the plates on that side permanently joined by a non-fusible conductor, although two plugs are preferred, and these are connected with the terminals by any common binding-screws or clamping-nuts that can be quickly loosened and tightened for the insertion of a plug.

A break is made in one of the branches of the conducting-plate *c'* and the ends upon each side of the break are bent to form the somewhat elastic disconnected poles c^2, and it is desirable, but not essential, that a break with similar poles c^3 be made in the other branch of this plate. A lever *e* is pivotally supported by a standard on the base, so as to oscillate in the plane of these poles from one side to the other, closing the circuit between the poles on one side and opening it on the opposite side as it oscillates. This lever *e* is provided with a spring which is tense when the lever is not in contact with the poles c^2 and tends to throw the lever so as to join the poles c^2. It is preferred that this be accomplished by means of an ordinary helical spring wound in a spring-barrel *e'* at the base of the lever. The lever *e* is held in contact with the poles c^3, with the spring tending to throw it, so as to unite the poles c^2 by means of a catch that is held by the safety-plug *d*. In the construction shown this catch consists of a tilting lever *f*, pivoted to the base, having on one end an arm *f'*, engaging a notch or projection on the edge of the spring-barrel or in the lever *e*, while the opposite end engages the safety-plug *d* either directly or indirectly by means of a loose pin *g*. A spring *h* normally holds the pin against the plug and tends to pull the opposite end of the lever from the catch and release the contact-lever. When any abnormal current passes along the conductor, the plug *d* is fused, opening the circuit. The fusing of this plug releases the pin *g* and allows the catch to be tilted by the spring and withdrawn from contact with the lever *e*, which then under the impulse of its spring is thrown from the poles c^3 to the poles c^2, thus opening the circuit and checking the current for a short interval, but instantly closing the circuit upon the other side of the base through the other terminals of the yoke-shaped conducting-plates without materially interrupting the current or practically disturbing the work being done by the current. Should the large excess current continue, the safety-plug *d'* is then fused and the circuit completely opened until new plugs are inserted. The projecting end of the lever *e* is preferably provided with a handle or button with opposite sides marked with contrasting colors or words to instantly indicate upon which side of the cut-out is the contact-lever and the condition of the plugs in the box, if

one plug has been fused and the lever thrown over a danger-signal, is displayed.

I claim as my invention—

1. In a cut-out, in combination, a base bearing yoke-shaped conducting-plates, the terminals of which are connected by safety-plugs, a spring-actuated lever oscillating in the plane of brakes in one of the conducting-plates, a catch pivoted to the base-plate to normally hold the lever in one set of breaks against the action of the spring force of the lever, a pin interposed between the opposite ends of said catch and one of the plugs, and a spring exerting its force upward against the end of said catch to release its opposite end from said lever after the plug has been fused.

2. In a cut-out, in combination, a base bearing yoke-shaped conducting-plates, the terminals of which are connected by safety-plugs, a spring-actuated lever oscillating in the plane of breaks in one of the conducting-plates, and a catch held by one of the plugs with its end in contact with the lever, substantially as specified.

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Witnesses:
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