(No Model.)

H. A. CHASE.

ELECTRIC CUT-OUT.

No. 432,979. Patented July 29, 1890.

Fig: 1.

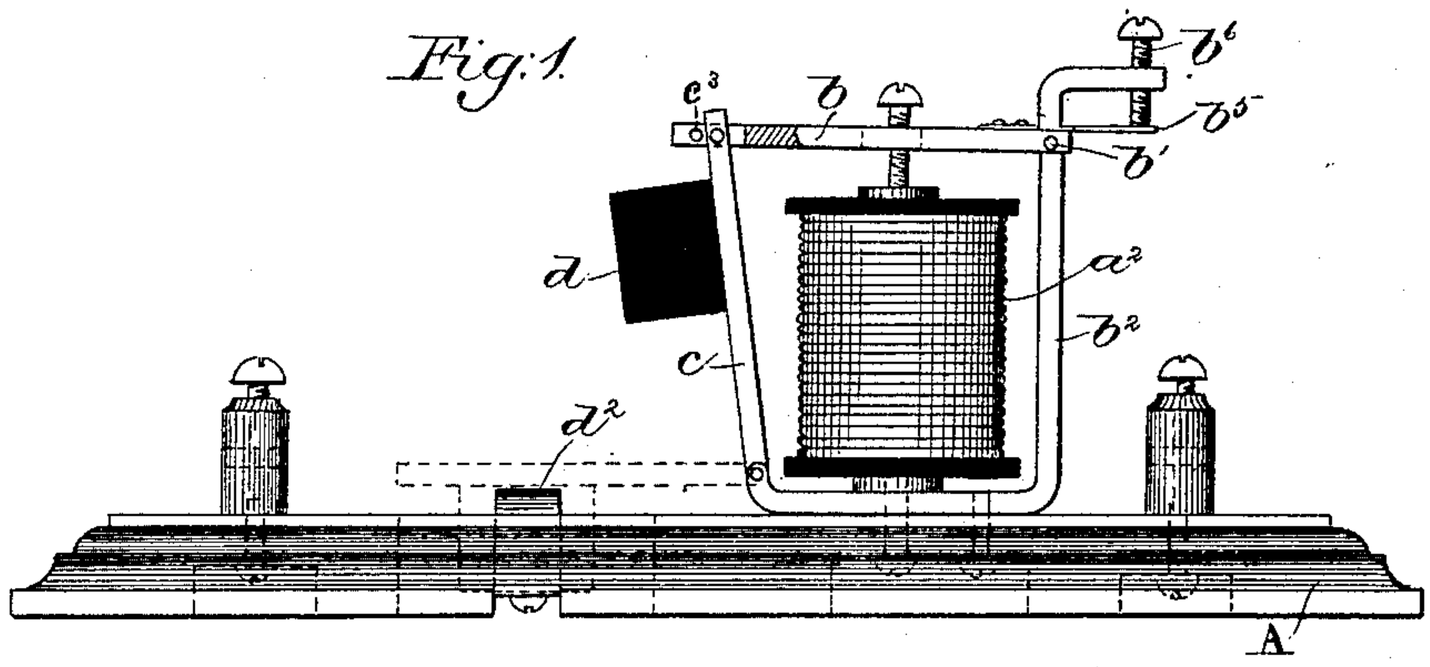


Fig: 2.

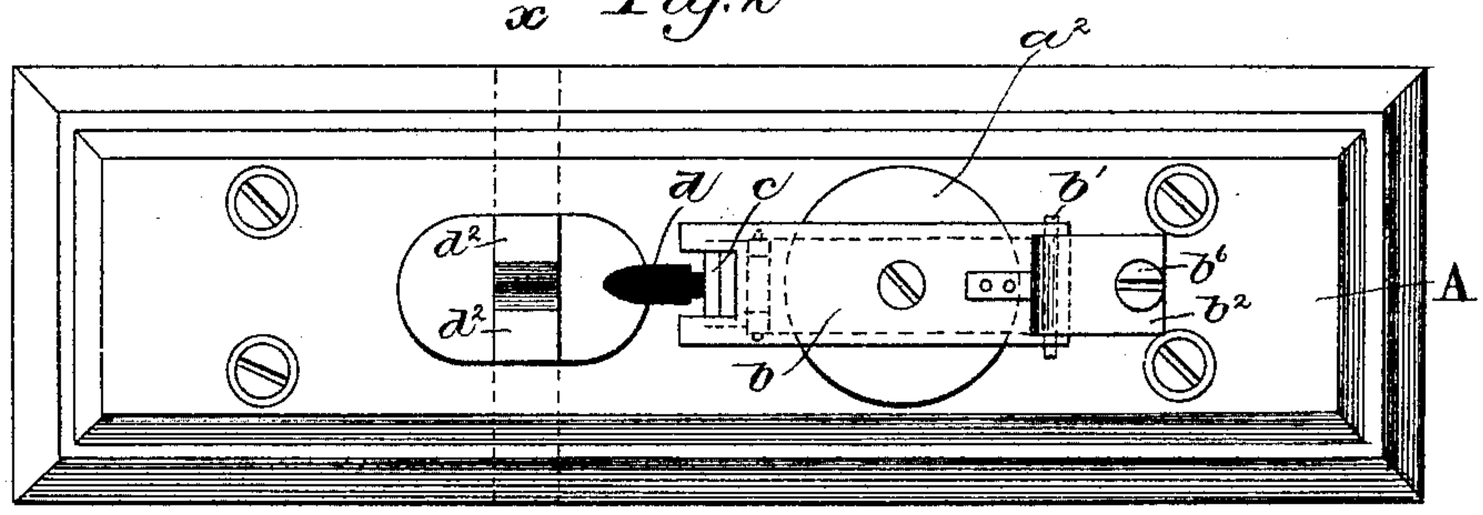


Fig: 5.

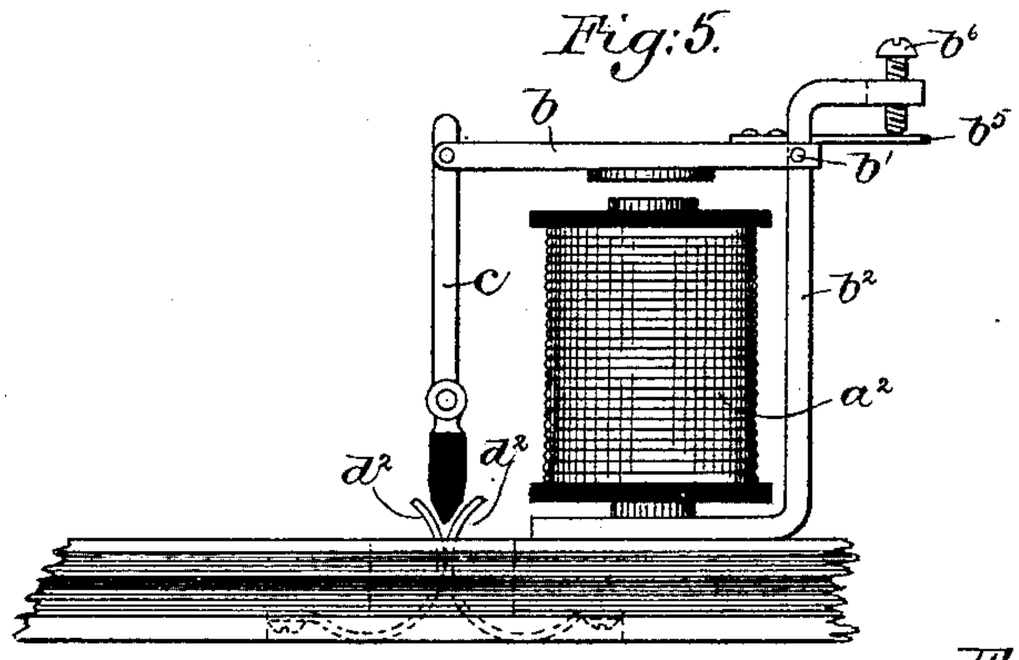


Fig: 3.

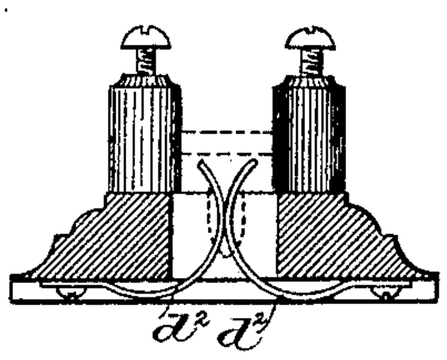
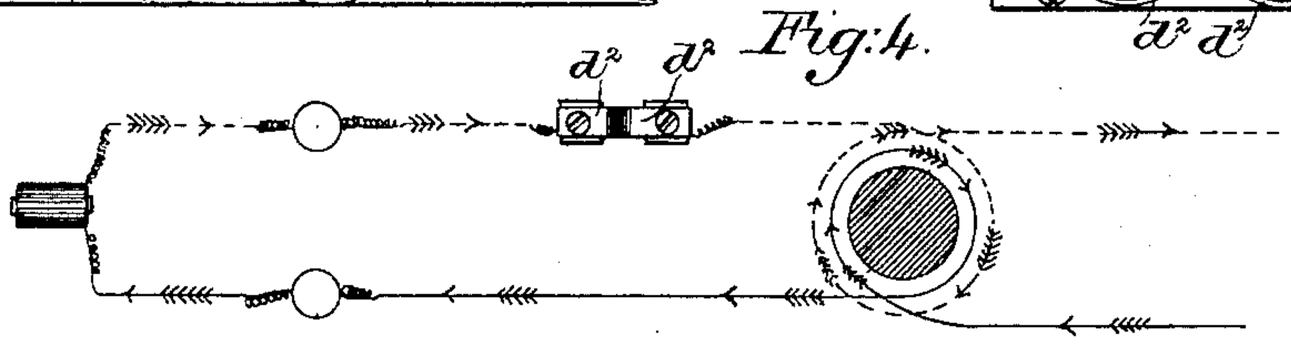


Fig: 4.



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UNITED STATES PATENT OFFICE.

HENRY A. CHASE, OF BOSTON, MASSACHUSETTS.

ELECTRIC CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 432,979, dated July 29, 1890.

Application filed March 31, 1890. Serial No. 345,947. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. CHASE, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Electric Cut-Outs, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In another application filed by me February 3, 1890, Serial No. 338,998, I have shown an electric cut-out comprising an electro-magnet, which is included in the circuit, and a drop or a heavy or weighted wedge-block held in elevated position by the retracted armature of said electro-magnet, which drop in falling, as when the armature is attracted, engages suitable contact-pens. In said application this block and contact-pens constitute a circuit-changer, the movable member of which is operated by the armature of the electro-magnet. The circuit-changer shown in said application, in addition to illustrating broad principles, which are therein claimed, has certain specific functions—viz., to shunt the instrument to be protected—and hence the wedge-block is made of metal or other conducting material.

This invention has for its object to construct an electric cut-out on substantially this same plan, the circuit-changer, however, having the specific function of breaking the circuit.

In carrying out this invention a wedge-block is made of rubber or other insulating material, and is held in elevated position by the armature of the electro-magnet, and the contact-pens normally touch each other, so that a continuous current passes through them; but when the wedge-block falls it enters between the said contact-pens, thus breaking the circuit and at the same time preventing the formation of an arc between the said pens.

Figure 1 shows in side elevation an electric cut-out embodying this invention; Fig. 2, a plan view of the cut-out shown in Fig. 1; Fig. 3, a cross-section of the cut-out shown in Fig. 1, taken on the dotted line *x x;* Fig. 4, a diagram showing the circuit, and Fig. 5 a modification to be referred to.

The base-plate A has arranged on it an electro-magnet a^2, preferably having two helices, one wound on the other on a single core; but in lieu of this particular construction of electro-magnet any other suitable form may be employed. The armature b of the said electro-magnet is pivoted at b' to an upright or support b^2, and a spring b^5 is attached to the armature, which is acted on by a set-screw b^6 to normally hold the armature retracted. A wedge-block d, of rubber or other suitable insulating material, is attached to or formed as a part of a plate or bar c, pivoted at c'. This block of insulating material is made wedge-shaped for the special purpose of entering between two contact-pens d^2 d^2 when falling, the said contact-pens d^2 d^2 normally bearing against each other and included in the line at one side of the instrument.

The wedge-block d is held in elevated position by means of the armature b, said armature having pins c^3, which co-operate with ears or projections formed on the end of the plate or bar c. As herein shown, the wedge-block constitutes the movable member of a circuit-breaker.

When an abnormal current passes over the line, the armature b being attracted, the wedge-block d will fall, and separating the contact-springs d^2 d^2 will break the circuit at one side of the instrument to be protected. As the pens d^2 d^2 are separated, the wedge-block immediately occupies the space, so that an arc cannot form; or, if the parts should be so constructed that an arc should be drawn or formed, the insulating-block would immediately destroy it.

Instead of having the electro-magnet included in the line at both sides of the instrument, as shown in the diagram, it may be included in only one side.

Referring to Fig. 5, the wedge-block, instead of being attached to a plate which is pivoted at its lower end, is shown as attached to a plate pivoted at its upper end or hung on the end of the armature b. In this instance the operation is the same as in Fig. 1; and, furthermore, instead of the block falling by gravity, it may be moved by a spring.

I claim—

In an electric cut-out, an electro-magnet in-

cluded in a closed low-tension circuit and its armature, combined with a plate, as *c*, and wedge-block *d*, of insulating material thereon, said plate being held in elevated position by the retracted armature, and contact-pens included in circuit with the coils of said electro-magnet and normally bearing against each other, which pens are separated by the entrance between them of said wedge-block *d* when the latter is moved by the attraction of the armature to thereby break and render inoperative the circuit, substantially as described.

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

HENRY A. CHASE.

Witnesses:
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