

**No. 707,894.**

**Patented Aug. 26, 1902.**

**G. E. ANDREWS.**  
**AUTOMATIC CUT-OUT.**

(Application filed Nov. 1, 1901.)

(No Model.)

*Fig. 1.*

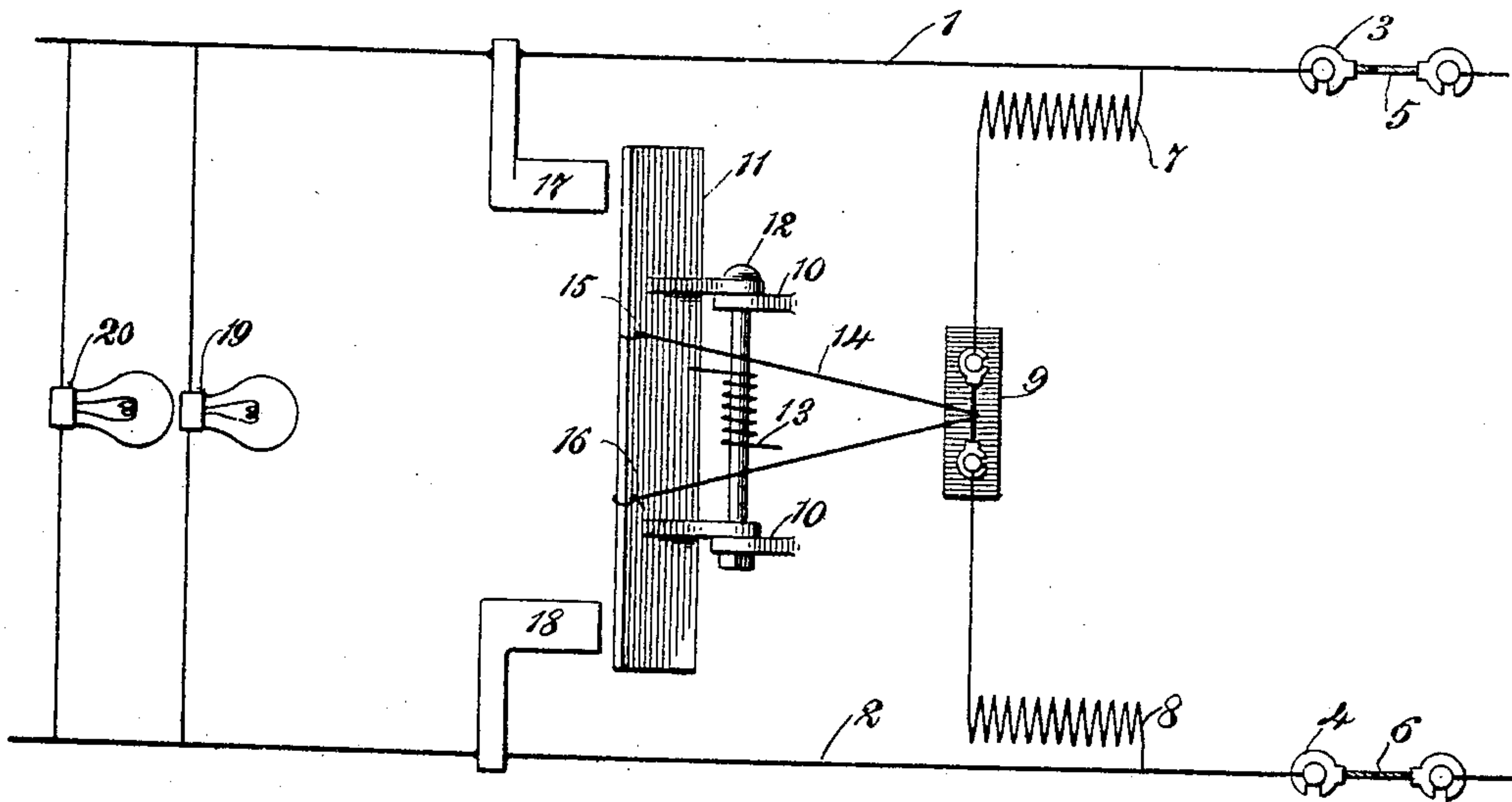
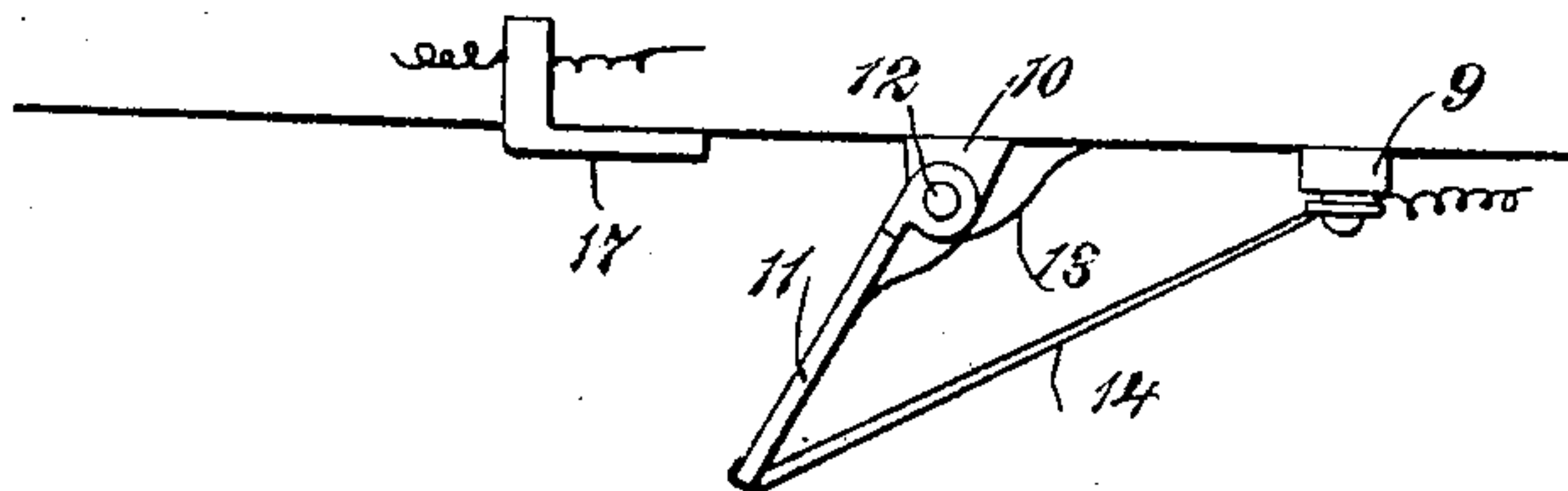


Fig. 2.



**WITNESSES:**

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# UNITED STATES PATENT OFFICE.

GEORGE EARL ANDREWS, OF PROVIDENCE, RHODE ISLAND.

## AUTOMATIC CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 707,894, dated August 26, 1902.

Application filed November 1, 1901. Serial No. 80,797. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE EARL ANDREWS, a citizen of the United States, and a resident of Providence, in the county of Providence and State of Rhode Island, have invented a new and Improved Automatic Cut-Out, of which the following is a full, clear, and exact description.

My invention relates to automatic cut-outs, more particularly of the type used in connection with fuse-wires.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view showing my improvement as applied to ordinary mains used for operating incandescent and arc lights on an incandescent circuit, and Fig. 2 is a detail showing certain parts in elevation.

The mains 1 and 2, carrying the current, are provided with fuses 3 and 4, which are provided with fuse-wires 5 and 6. Rheostats 7 and 8 are connected with the mains and are also connected with a fuse 9. Piv-

otally mounted upon brackets 10 is a plate 11, normally free to swing upon the pivot 12.

A spiral spring 13 is secured to some stationary object and presses upon the plate 11. A flexible member 14, such as a cord or a wire, is connected with the plate by means of the apertures 15 and 16 and is connected with the fuse-wire of the fuse 9 in such manner that the drawing out of this fuse will cause the plate 11 to be actuated by the spring 13.

Contact-lugs 17 and 18 are connected with the mains, respectively, and the incandescent lights 19 and 20 are likewise connected with the mains in the usual manner.

The operation of my device is as follows:

The several parts being connected as above described, the current flows through the mains in the usual manner and actuates the lights. A small portion of the current is shunted off from the mains and passes through the resistances 7 and 8 and the fuse 9. Whenever the current becomes too heavy for the fuse 9, as might be the case through racing

of the engine, or through negligence of the attendants at the power-house in adjusting the dynamo, or through the failing of the converter or transformer to do its duty, or any other cause which might allow the voltage to rise, the fuse-wire of the fuse 9 blows out, the flexible member 14 is released, the plate 11 is driven against the contact-lugs 17 and 18 by the spring 13, and the mains are thus short-circuited. This causes the blowing out of the fuses 3 and 4 by the melting of the wires 5 and 6, provided, of course, the currents upon the mains are sufficiently heavy. If the currents are not sufficiently heavy to be dangerous, the fuse-wires 5 and 6 will not melt, and no particular harm is done. Of course all of the fuses can be made of any desired degree of sensitiveness and the apparatus may be used for a variety of purposes. Its application is not limited to use upon electric-light wires. It is equally effective as a lightning-arrester, and may be used in a variety of connections which may suggest themselves to persons skilled in this art. Its main purpose is, first, to short-circuit the mains, and, second, if the voltage is high enough, to leave the mains open. The apparatus is preferably located at the point where the wires enter the building.

My invention can be used on any circuit which is supposed to have a constant potential or voltage and will blow out the main fuses when the voltage rises above the normal.

My invention is a simple, cheap, and efficient cut-out, easily managed, and not liable to get out of order.

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

1. An automatic cut-out, comprising mains carrying currents of different potential and provided with separate fuses, a fuse connected with both of said mains by means of shunt-wires leading thereto, contact-lugs connected with said mains respectively, and a fuse-controlled member for automatically connecting said lugs together.

2. An automatic cut-out, comprising a plurality of contact-lugs to be connected with respective mains carrying currents of opposite sign, a contact-plate normally out of engagement with said lugs, a spring for forcing said



plate into engagement with said lugs, a fuse adjacent to said plate, and a flexible member connecting said fuse and said plate.

3. An automatic cut-out, comprising a plurality of contact-lugs connected with conductors, a plate pivotally mounted adjacent to said lugs, a member located adjacent to said plate and provided with a fusible wire, and a flexible member connected with said fusible wire and with said plate.

4. An automatic cut-out, comprising a pair of contact-lugs connected with conductors, a swinging plate for short-circuiting said contact-lugs, a spiral spring for actuating said plate into engagement with said lugs, a member provided with a fusible wire adjacent to said plate, and a longitudinal member secured by its ends to different parts of said plates and engaging said fusible wire.

5. An automatic cut-out, comprising mains provided with fuses connected serially therewith and also connected with contact-lugs, a

fuse connected with both of said mains by shunt-conductors, and a fuse-controlled conducting member connected with the last-mentioned fuse.

6. An automatic cut-out, comprising mains provided with fuses connected serially therewith and also connected with contact-lugs, a fuse connected with both of said mains by shunt-conductors, artificial resistances interposed in the shunt-circuit thus formed for the purpose of modifying the potential of the current passing from said mains to said last-mentioned fuse, and a fuse-controlled conducting member connected with said fuse.

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

GEORGE EARL ANDREWS.

Witnesses:

AMION V. CHEVERS,  
JOSEPH U. BRIGGS.