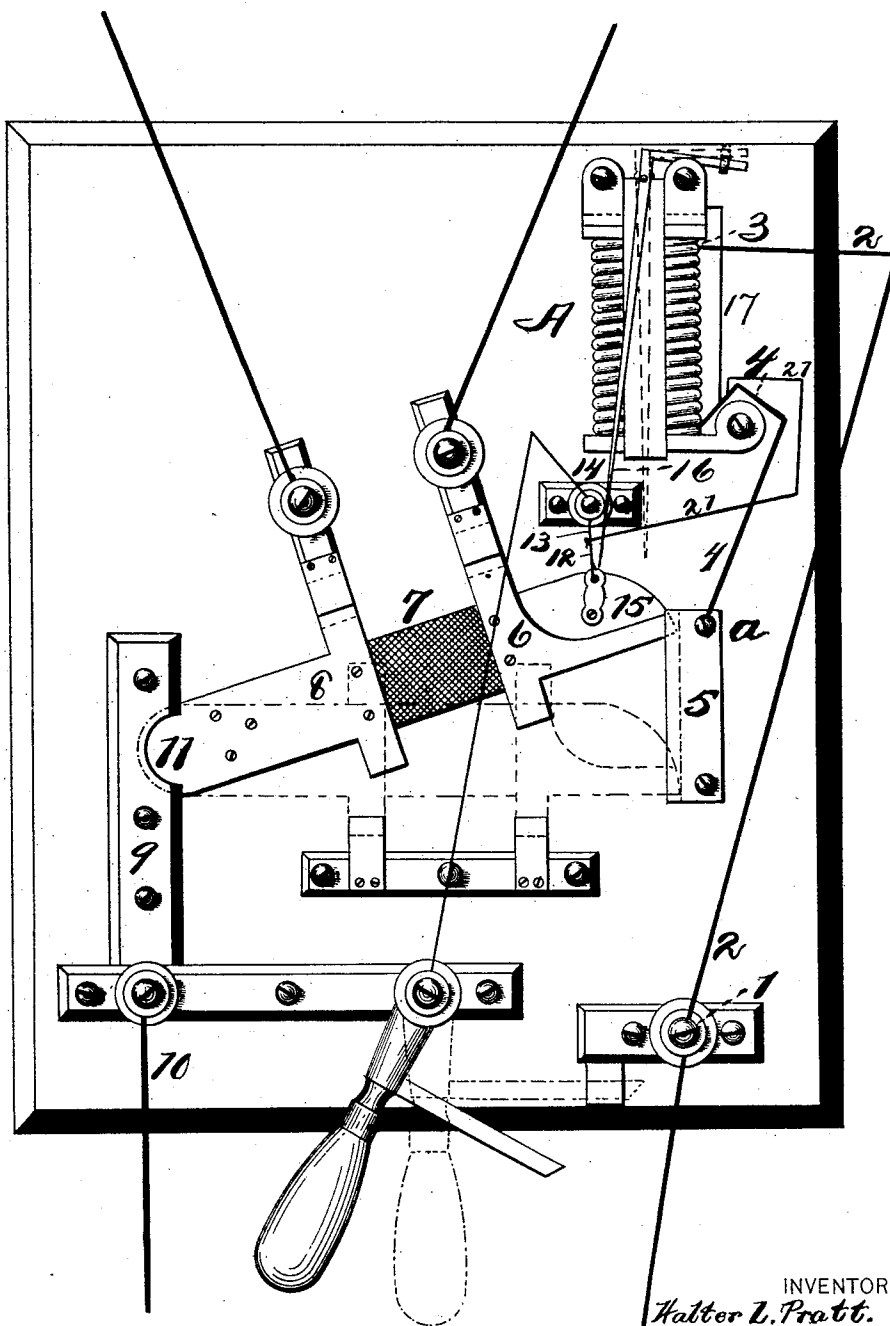


(No Model.)

W. L. PRATT & F. E. RIPLEY.
AUTOMATIC SAFETY CIRCUIT CLOSER.

No. 570,955.

Patented Nov. 10, 1896.



WITNESSES:

Charles H. Morris
Maudie C. Cooke

INVENTORS:

Walter L. Pratt.
Frederick E. Ripley.

BY

Smith & Brinson
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WALTER L. PRATT AND FREDRICK E. RIPLEY, OF ADAMS, NEW YORK;
SAID RIPLEY ASSIGNOR TO RUBEN F. STEELE, OF SAME PLACE.

AUTOMATIC SAFETY CIRCUIT-CLOSER.

SPECIFICATION forming part of Letters Patent No. 570,955, dated November 10, 1896.

Application filed January 20, 1896. Serial No. 576,165. (No model.)

To all whom it may concern:

Be it known that we, WALTER L. PRATT and FREDRICK E. RIPLEY, of Adams, in the county of Jefferson, in the State of New York, have invented new and useful Improvements in Automatic Safety Circuit-Closers, of which the following, taken in connection with the accompanying drawing, is a full, clear, and exact description.

This invention relates to automatic safety circuit closers or cut-outs.

Our object is to produce a mechanism, cheap and durable in its construction and positive in its operation, for automatically cutting out or shunting from the electric circuit an arc-loop or system of lights when from any cause a break occurs or the light or system of lights cease to work properly and to allow the current to continue onto the remaining lights in the ordinary way; and to that end our invention consists in the several new and novel features of construction and operation hereinafter described, and which are specifically set forth in the claims hereunto annexed. It is constructed as follows, reference being had to the accompanying drawing, in which we show the circuit closed, as it appears when in operation, the dotted lines indicating the position of the parts when a loop or light is cut out.

1 is an ordinary binding-post holding the circuit-wire 2, which enters at 3 the electromagnet A, the current passing out the wire 4, which is secured by a binding-post *a* to the conducting-bracket 5, the said conducting-bracket normally being in circuit with the bracket 6, which is mounted upon an insulated arm 7, the current then passing through the bracket 6 around the loop and again connecting with the conducting-bracket 8, thence down through the plate 9 and out the wire 10, the brackets 6 and 8, which convey the current to the loop, being mounted upon the arm 7, pivoted at 11, but insulated from each other. The arm 7 is held in the position shown in the drawing by a fuse-wire 12, connecting the outer end of the arm 7 with the wire 13, which is held by a binding-post 14, the outer end 15 of the arm 7 being insulated from the bracket 6.

The magnet A is provided with a very sensitively pivoted needle or armature 16, the

armature 16 being adapted when the current is off to rest in the position shown in the dotted lines.

Our invention is operated substantially as follows: When the current passes into the wire 2 and from thence into the magnet, it first draws the armature 16 from the fuse-wire, where it rests normally, to the position shown in the drawing, the current for an instant passing through the fuse-wire and from thence through the wire 13 down to the plate 19 and out the wire 10. This lasts until the current is sufficiently strong to draw the armature away, and may be set at any number of amperes. The current then passes out through the wire 4 into the bracket 5 and thence to the bracket or plate 6, thence to the loop and back through the bracket 8, plate 9, and out through the wire 10.

If for any reason the wire upon the loop leading from the plate 6 becomes broken and opens the circuit at that point, (which we simply take for illustration,) the armature 16 is immediately drawn over again and forms a circuit with the fuse-wire 12, and the current then passes through the wire 17 into the armature 16, thence to the fuse-wire 12, thence out through the wire 13 down to the binding-post 18, then out through the plate 19 and out through the wire 10. The current then draws the armature 16 back to its normal position, forming an arc with the fuse-wire 12, which in turn is then fused and allows the hinged bracket 7 to drop down in the position shown in the drawing, thus allowing the current to pass through the plate 6 across to the plate 20, which is in contact with the plate 8 upon the arm 7, and passes on down through the wire 10.

In case it is desired, we may obviate the necessity of running the current through the armature and pass a wire 21 down to and allow it to terminate in close proximity to the fuse-wire 12, so that when the armature is drawn over it will throw it into contact with the said fuse-wire.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. An automatic cut-out, comprising a hinged arm carrying the loop connections,

said arm being held normally in circuit by a fuse-wire, an electromagnet and an armature for fusing said wire when the circuit upon the loop is broken.

- 5 2. An automatic cut-out, comprising a movable arm carrying the loop connections, said arm being held normally in circuit by a fuse-wire, means for fusing said wire when the circuit upon the loop is broken an electro-
10 magnet, and an armature for drawing said arm into electrical contact so as to continue the circuit as set forth.

3. An automatic cut-out, comprising a movable arm carrying the loop connection, said
15 arm being held normally in circuit by a fuse-wire, an electromagnet, and a pivoted armature adapted to come in contact with said

wire when the circuit upon the loop is broken, as set forth.

4. An automatic cut-out, comprising a movable arm carrying the loop connection, said arm being held normally in circuit by a fuse-wire, an electromagnet, a wire running from said magnet to a point in close proximity to said fuse-wire, and an armature adapted to
25 draw said wire into electrical connection with said fuse-wire, as set forth.

In witness whereof we have hereunto set our hands on this 15th day of January, 1896.

WALTER L. PRATT.

FREDRICK E. RIPLEY.

In presence of—

R. F. STEELE,

H. H. WAITE.