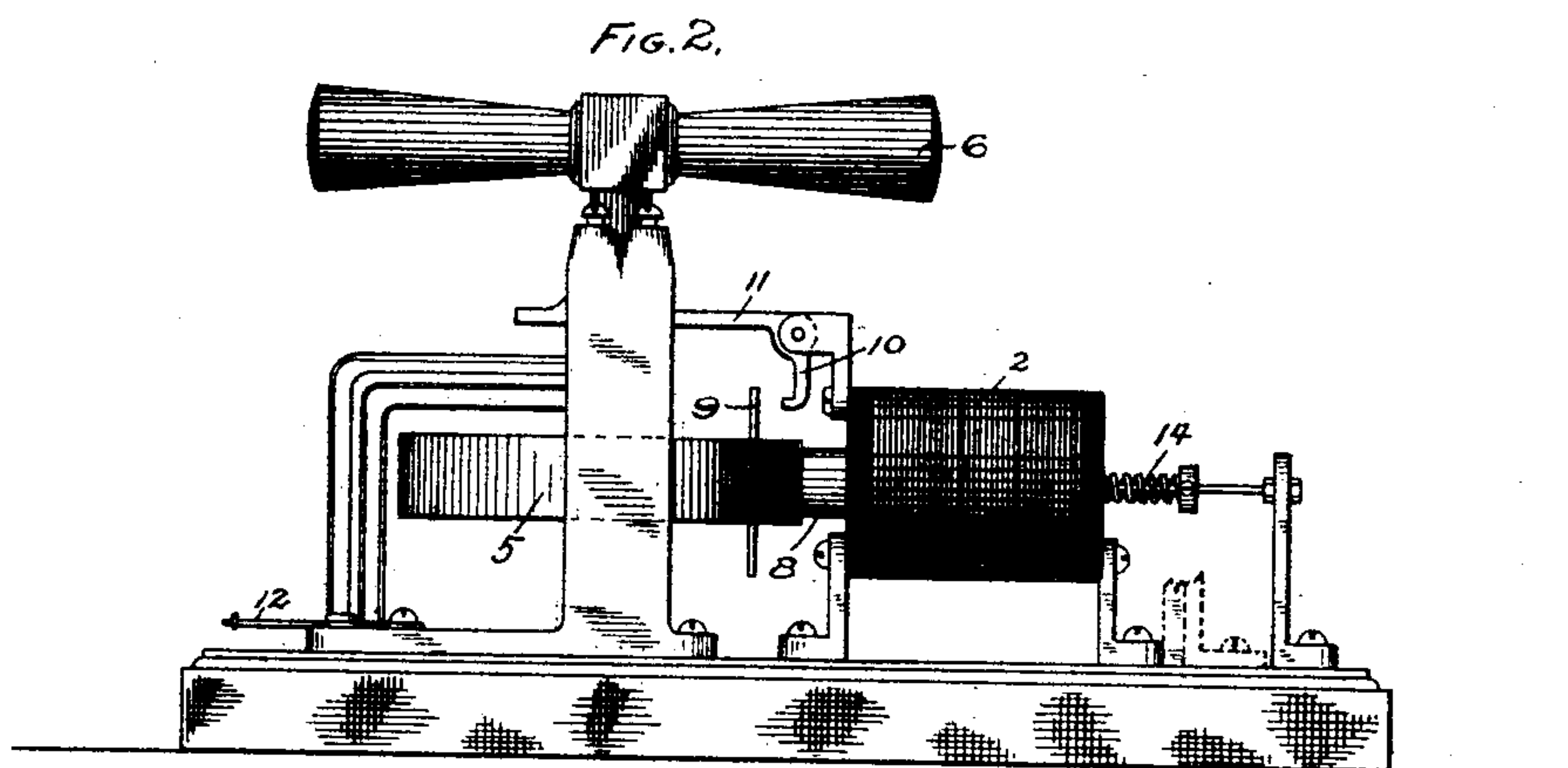
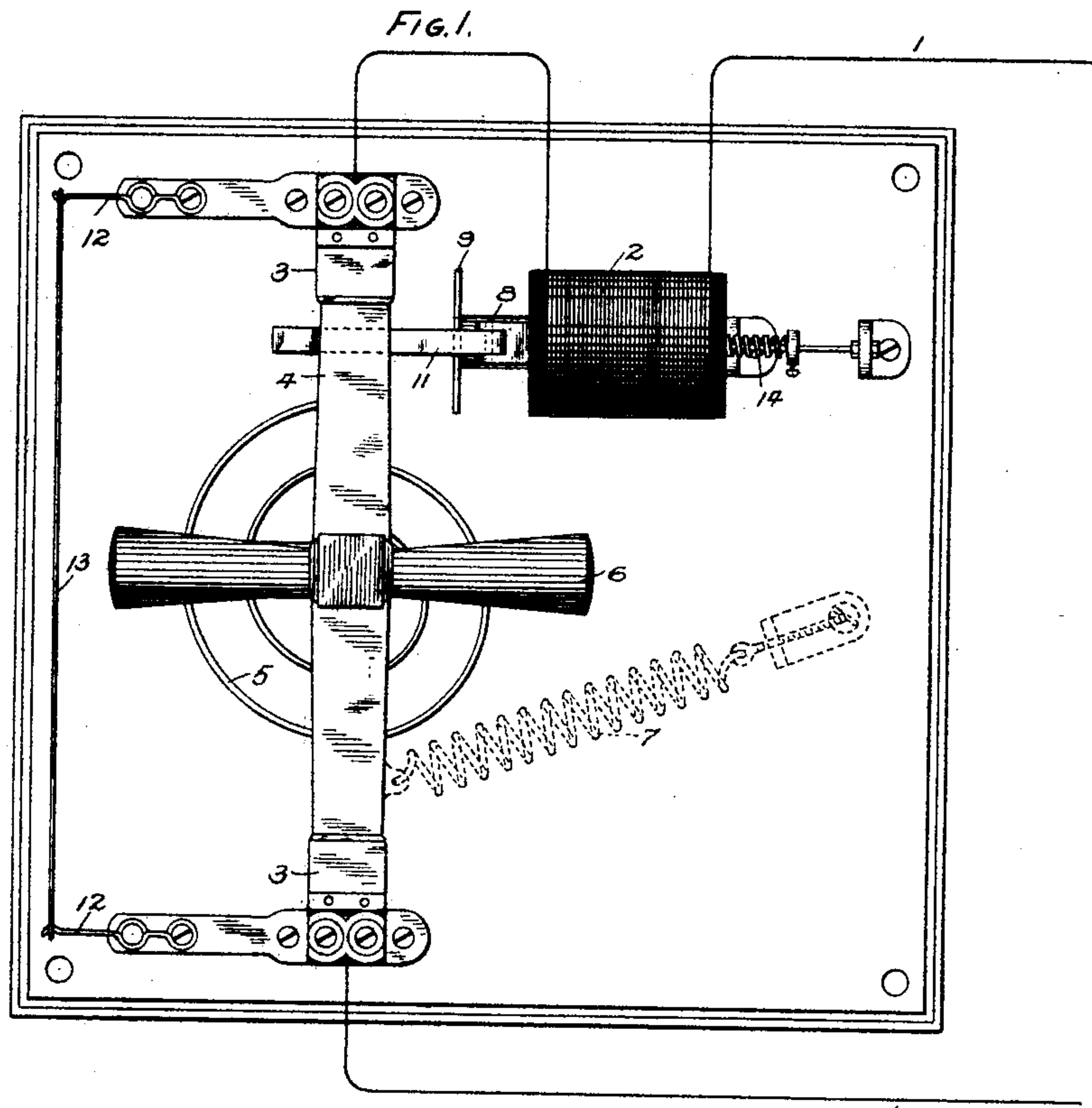


(No Model.)

A. WURTS.
AUTOMATIC CIRCUIT BREAKER.

No. 500,456.

Patented June 27, 1893.



WITNESSES:

Walter E. Stevenson,
A. L. Turner

INVENTOR

Alexander Wurts
BY
Terry and McKaye
ATTORNEYS

UNITED STATES PATENT OFFICE.

ALEXANDER WURTS, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, OF SAME PLACE.

AUTOMATIC CIRCUIT-BREAKER.

SPECIFICATION forming part of Letters Patent No. 500,456, dated June 27, 1893.

Application filed October 26, 1892. Serial No. 450,051. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER WURTS, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Automatic Circuit-Breakers, (Case No. 519,) of which the following is a specification.

My invention relates to means for automatically opening the circuit of a constant potential machine, when the current becomes excessive.

The object of my invention is to provide a device of this character wherein all danger of arcing at contacts is obviated.

The nature of my invention clearly appears in the accompanying drawings, wherein—

Figure 1 is a plan view of my circuit-breaker, and Fig. 2 is a side view of the same.

The circuit to be interrupted on the occurrence of excessive current is shown at 1, and includes the coils of the solenoid or magnet 2. This circuit also includes the contact springs 3, connection between which is normally established by the pivoted conducting lever 4. A spring 5, is so connected to this lever as to tend to pull it with violence out of contact with the springs 3, and a handle 6 is preferably employed to replace the lever when desired. This handle is, of course, preferably insulated from the lever 4. Various forms of retracting springs may be used at will. I have shown another form in dotted lines at 7. An armature 8 is actuated by the magnetism of the coils 2, and is adapted, when impelled by the occurrence of excessive current in said coils, to bring a cross bar or other projection 9 into contact with the projection 10. This position is normally avoided by the pressure of the spring 14. This projection 10 is one arm of a bell lever catch 11, the other arm of which is hooked, and engages the lever 4, preventing its movement under the influence of the spring 5 or 7. When, therefore, the cross piece 9 strikes the bell crank 11, the latter turns on its pivot, and releases the lever 4, which is immediately withdrawn from contact

with the springs 3, thus breaking the circuit. Such a form of circuit breaker, where high potentials are employed would be objectionable on account of the injurious arcs which occur at the points of separation. In order to prevent the occurrence of such arcs, I provide the following device. Connected electrically to each contact spring 3 is a spring arm, 12. Looped over these spring arms is a fine fusible wire 13, which thus forms a shunt around the lever 4. The spring arms hold the fusible wire taut by their resiliency. When the current is interrupted at 3, it is forced to flow through the wire 13. Thus for the small portion of time during which the lever 4 is within arcing distance of the points 3, a path is provided for the current and no arc is formed. At the next moment, however, the excessive current destroys the wire 13, and the circuit is thus entirely interrupted. As the wire 13 is fused apart, the springs 12 cause the two ends thereof to fly apart and prevent formation of any arc carried by the vapor of the fuse, as might perhaps otherwise occur.

What I claim is—

1. A fixed contact point, a movable conducting part making normal contact therewith, a wire of fusible metal in shunt around said parts, and means whereby the parts are automatically separated on the occurrence of an abnormal current, substantially as described.

2. A fixed contact point, a movable conducting part making normal contact therewith, a wire of fusible metal in shunt around said parts, said wire being supported by two spring arms holding it taut; and means whereby the parts are automatically separated on the occurrence of an abnormal current, substantially as described.

In testimony whereof I have hereunto subscribed my name this 24th day of October, A. D. 1892.

ALEXANDER WURTS.

Witnesses:

JAMES WM. SMITH,
HAROLD S. MACKAYE.