A. AKIN.

PROTECTIVE DEVICE FOR ELECTRICAL APPARATUS.

APPLICATION FILED OCT. 4, 1915.

1,309,233. Patented July 8, 1919.

Fig. 1.

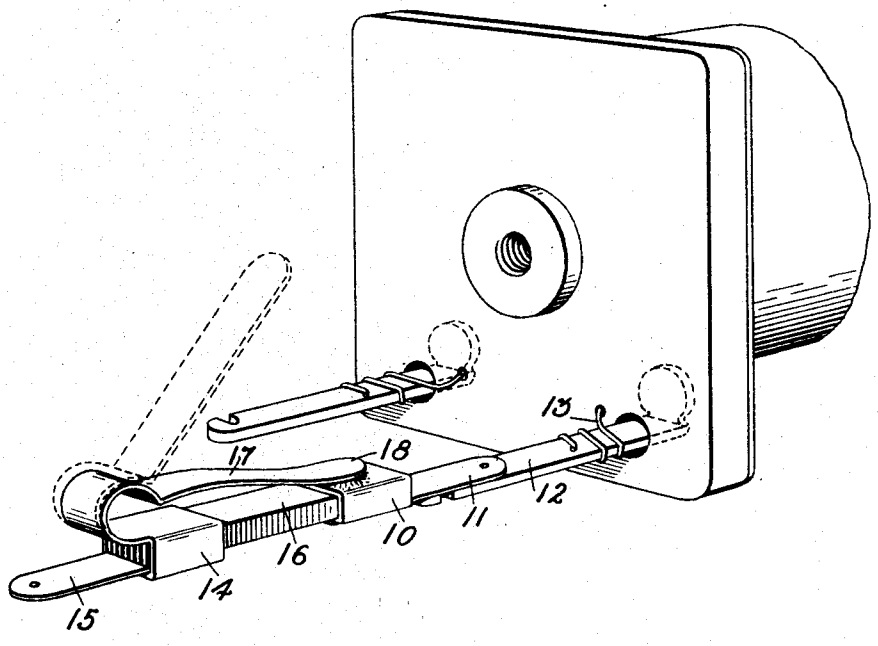
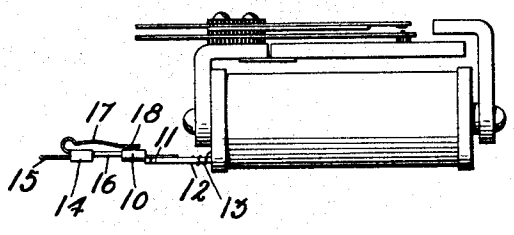


Fig. 2.



Inventor:
Allison Akin
by A. C. Skinner, Att'y

UNITED STATES PATENT OFFICE.

ALLISON AKIN, OF EAST ORANGE, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WESTERN ELECTRIC COMPANY, INCORPORATED, A CORPORATION OF NEW YORK.

PROTECTIVE DEVICE FOR ELECTRICAL APPARATUS.

1,309,233. Specification of Letters Patent. Patented July 8, 1919.

Application filed October 4, 1915. Serial No. 53,985.

To all whom it may concern:

Be it known that I, ALLISON AKIN, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Protective Devices for Electrical Apparatus, of which the following is a full, clear, concise, and exact description.

This invention relates to protective devices for electrical apparatus, and has for its object to provide a device of this character which can be readily applied to existing types of commercial apparatus without changing the design of such apparatus, and may be included in circuit with such apparatus without the addition of an appreciable amount of resistance to such circuit.

In accordance with the general features of this invention, there is provided a thermally operable device which may be easily secured to a terminal extension of the device to be protected, and which will be operable by accumulated heat generated by a prolonged flow of excessive current through the device to be protected and conducted along said terminal extension.

Specifically, this invention consists in the provision of a spring-operated device normally held under tension by easily fusible material, which spring-operated device may be secured to a terminal extension of the winding and constitutes a portion thereof. Accumulated heat generated by a prolonged flow of excessive current through the device to be protected will be conducted along the terminal extension to fuse the fusible material and cause the operation of the spring to open the circuit of the device.

The invention will be more fully understood from the following specification and accompanying drawings, in which the same reference characters are used throughout to designate the same parts, and in which Figure 1 is an enlarged perspective view of a protective device embodying this invention, attached to one terminal of an electromagnet, and Fig. 2 is a side elevation of the device shown in Fig. 1.

The device consists of a terminal 10 with an extension 11 which may be soldered or otherwise connected to the terminal 12 of a coil terminating with wire 13 which it is to protect. At the other end of the device is a terminal 14 with an extension 15 thereon, which may be employed for connecting the protective device and the electromagnet to the line. An insulating member 16 connects the two terminals mechanically, while spring member 17, which forms a part of terminal 14, connects the two terminals electrically. Normally, this spring member 17, which forms a part of the circuit, is soldered, or otherwise attached with a low melting substance at the end 18 to terminal 10. When the accumulated heat, generated in the winding of the instrument by a prolonged flow of excess current, reaches a certain predetermined limit, its conduction by way of terminal extension 12, and terminal 10, and thence to the uniting medium between spring member 17 and terminal 10, causes this uniting medium to soften and permits spring member 17, which is under tension, to separate from terminal 10 and open the circuit through the coil. When the circuit is opened, the spring takes the position shown by the dotted lines in Fig. 1. The circuit can be closed by resoldering spring 17 to terminal 10.

What is claimed is:

The combination with an electrically operated device including an electrical terminal, of a thermally operated protective device comprising an insulating member provided with a pair of metallic end caps, one of said end caps being provided with a terminal member adapted to be mounted in direct thermal and electrical contact with the terminal of the electrically operated device and the other end cap being provided with a spring member adapted to be secured under tension to said first cap by means of a heat softenable material, and a terminal member for said second cap.

In witness whereof, I hereunto subscribe my name this 30th day of September, A. D. 1915.

ALLISON AKIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."