(No Model.)

F. W. MAXSTADT.

FUSE FOR ELECTRIC CIRCUITS.

No. 449,289. Patented Mar. 31, 1891.

Fig. 1.

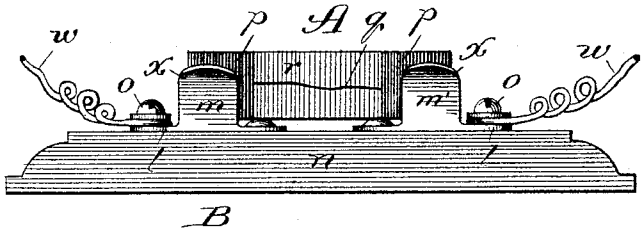


Fig. 2.

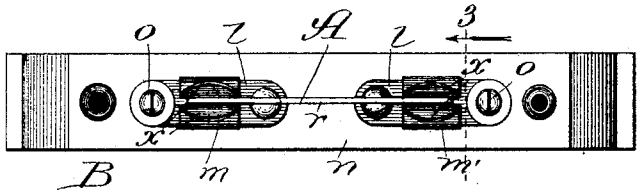


Fig. 3.

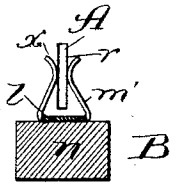
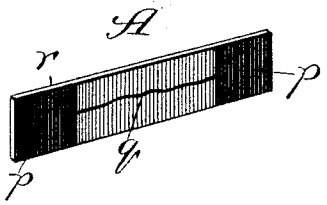


Fig. 4.



Witnesses:
Chas. E. Gaylord.
Clifford N. White.

Inventor:
Francis W. Maxstadt,
By Dyrenforth & Dyrenforth
Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANCIS W. MAXSTADT, OF CHICAGO, ILLINOIS.

FUSE FOR ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 449,289, dated March 31, 1891.

Application filed January 10, 1891. Serial No. 377,367. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS W. MAXSTADT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Safety-Fuses for Electric Circuits, of which the following is a specification.

My invention relates to an improvement in the class of protectors commonly used for the protection against burning out of the more sensitive electrical instruments, such as the telegraph and telephone, and which involves as its essential feature a fusible cut-out comprising a strip, bar, or plate of lead or some readily-fusible alloy placed in the circuit and adapted automatically to break the latter on the passage of a current of sufficient power to fuse the strip, the resistance of which to fusion must be according to the ampère capacity of the instrument to be protected. Thus telegraph-instruments will not carry a current above one-half an ampère, so that a safety-fuse to protect a telegraph-instrument should not require for its fusion a current of greater power than one-half an ampère.

My objects are to provide an improved construction of safety-fuse having a fusible strip that will be fused by a current having at most the power of one-half an ampère and to provide a novel construction of a holder for my improved fuse.

In the accompanying drawings, Figure 1 is a view in side elevation of my improved construction of fuse applied to my improved fuse-holder. Fig. 2 is a plan view of the same. Fig. 3 is a section taken on the line 3 of Fig. 2 and viewed in the direction of the arrow. Fig. 4 is a perspective view showing the fuse of my improved construction.

A is the fuse, comprising a thin plate *r*, of some material non-conductive of electricity—such as wood, stiffened leather, or the like—and serving as a back for the strip *q*, of suitable fusible metal or fuse proper, which is secured (by cementing) to extend longitudinally along one face of the base *r* between contact-surfaces *p p*, formed of suitable metal foil or leaf cemented upon the fuse-bearing face of the base *r* near its opposite ends.

Although the fusible strip *q* is in reality the fuse, I so designate the entire structure involving the non-conducting base *r*, carrying the strip and the contacts *p*, since they are combined as an entirety constituting a new article of manufacture.

As will be understood, the strip *q* is adapted to vary in its resistance to fusion according to the current for which the instrument to be protected is adapted. I form the strip *q*, for use with my improved device, of a particular combination of material constituting a discovery for which it is my intention to apply in the future for Letters Patent, and this material is so susceptible to fusion that a very thin strip thereof, such as is indicated in the drawings, will fuse under one-half an ampère of current, while less thicknesses thereof are adapted to fuse with even lower degrees of power of currents.

B is my improved fuse-holder, which is especially adapted to support the particular fuse A described. The holder B comprises a block *n*, of insulating (or insulated) material, adapted to be fastened in desired position and supporting on its upper side two spring-contacts *m* and *m'* at such a distance apart that the fuse A, when adjusted to extend between them, will make contact therewith at the terminals *p* provided on its opposite ends. The best form, so far as I am aware, (though not necessarily the only form,) for the contacts *m* and *m'*, and that which I provide, is a spring-clamp flaring at the mouth, as shown at *x*, the sides of the clamp rising from a base *l*, at which it is fastened to the block by a screw *o*, the screws affording means for binding the line-wires *w* to the holder B.

With the construction of holder thus described the fuse A is readily applied operatively by inserting it at its contact ends *p* between the spring-clamps *m* and *m'*, in which position the strip *q* closes the circuit and will open the latter by its fusion, thereby protecting the instrument, should the power of the current be increased in ampères to that at which the strip will fuse, as may happen by lightning or by crossing the instrument-circuit with electric light or power circuits and the like.

What I claim as new, and desire to secure by Letters Patent, is—

1. A safety-fuse for electric circuits, com-

prising, in combination, a plate *r*, of insulating material, having a strip *q*, of metal, sufficiently attenuated to be fused by a current having the power of at most about one-half an ampère and cemented to one side of the said plate to extend lengthwise thereof, and metal-foil contact-strips *p*, cemented to the plate *r* near its opposite ends and covering the ends of the fuse-strip, substantially as described.

2. In combination, a safety-fuse A, comprising the plate *r*, having cemented to one side the strip *q*, of metal, sufficiently attenuated to be fused by a current having the power of at most about one-half an ampère and provided at opposite ends with metal-foil contacts *p*, cemented in place to cover the ends of the strip *q*, and a holder B, comprising an insulating-block *n* and spring-clamps *m* and *m'*, adapted to form the terminals of an electric circuit and to receive between them the contact ends of the plate *r* and compress the said contacts and fuse-strip ends together, substantially as described.

FRANCIS W. MAXSTADT.

In presence of—
J. W. DYRENFORTH,
M. J. FROST.