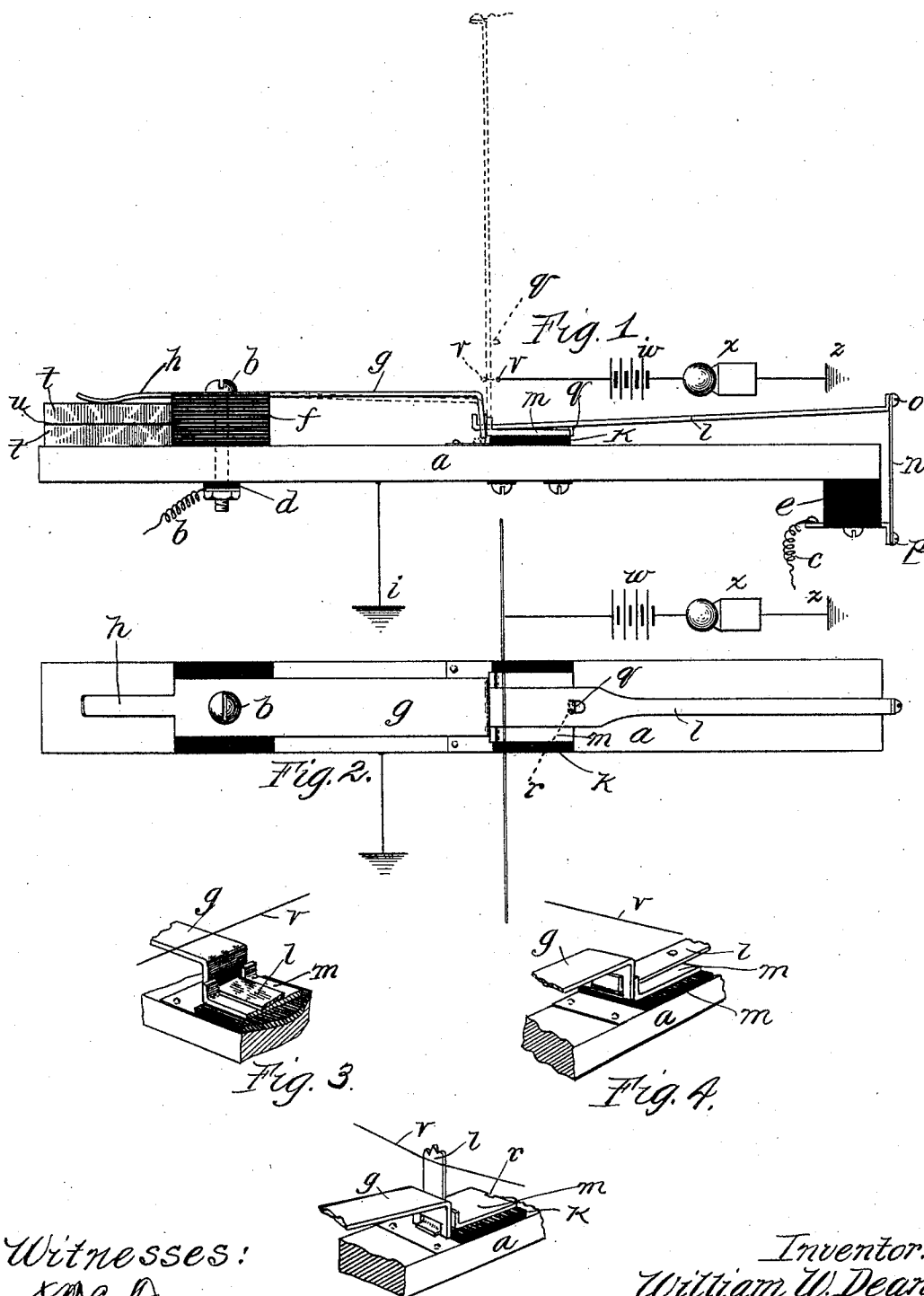


(No Model.)

W. W. DEAN.
FUSE HOLDER.

No. 576,040.

Patented Jan. 26, 1897.



Witnesses:

S. M. Canner.

A. Dymally.

Fig. 5.

Inventor:
William W. Dean,
By Barton Brown
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM W. DEAN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE BELL
TELEPHONE COMPANY OF MISSOURI, OF SAME PLACE.

FUSE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 576,040, dated January 26, 1897.

Application filed September 19, 1896. Serial No. 606,341. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. DEAN, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Fuse-Holders, (Case No. 13,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvements in an electric fuse-holder, and more particularly to the class in which, simultaneously with the melting of the fuse, the circuit-terminals are adapted to be widely separated and a grounded connection established, the object of said invention being to provide simple and effective apparatus for accomplishing the above-named results.

The device of the present application may be briefly described as consisting of circuit-terminals between which the fuse is adapted to be connected and a heavy grounding-spring engaging one end of a lever forming one of the circuit-terminals, said spring being adapted to effect the separation of said terminals, and is maintained out of contact with the ground connection only when the fuse remains intact.

I will describe my invention more particularly by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my device. Fig. 2 is a plan view thereof. Figs. 3, 4, and 5 are detail views.

Throughout each of the several figures like parts are designated by the same letter of reference.

Upon the metallic base *a* are mounted the terminals *b c* of the protected circuit, which are respectively insulated therefrom by bushing *d* and block *e*. Insulating-block *f* serves to support the grounding-spring *g* and clip *h*, which are connected with one limb of the circuit by terminal screw *b*. The powerful flat spring *g*, when unchecked, maintains the ground contact with base *a*, as illustrated in Fig. 5, said base being connected with earth at *i*.

Secured to the insulating-strip *k* is the seat *m*, upon which the lever *l* is maintained. Said

lever has its rear end bent at right angles, which is inserted between the guards formed by the vertical portions both of the spring *g* and seat *m*, said parts being cut away the full width of the lever, as is seen in Figs. 3 and 4. The rear of seat *m* thus forms a fulcrum for lever *l*, which serves to raise spring *g* from its ground contact when the said lever is maintained approximately in a horizontal position. When a fuse is to be inserted, the lever is drawn downward, as shown in Fig. 1, and the said fuse *n* is fastened between the lever and terminal *c* by screws *o p*. Lug *q*, provided upon the said lever, will in this position engage groove *r*, cut in seat *l* and strip *k*, thus preventing any lateral play of the lever.

Between the clip *h* and base *a* are inserted the carbon blocks *t t*, separated by a thin sheet of mica *u*, serving normally to insulate the clip from ground. Said insulation, however, is easily destroyed by a heavy static discharge, this construction, therefore, admirably serving the purpose of a lightning-arrester.

In many instances it is desirable to have a signal given immediately a fuse is burned out, and especially is this true where large numbers of such devices are employed and the circuit interruption is liable to escape notice. I have, therefore, indicated means for giving such a signal. Wire *v* is maintained taut a short distance above the device, which the lever *l* is adapted to engage when released by disruption of fuse *n*. Connected with the said wire is the battery *w* and signal-bell *x*, grounded at *z*, through which circuit is closed when the lever is released from its horizontal position and is forced backward, assuming a vertical position under the influence of spring *g*.

Although the ground-contact in my device is made through the agency of a powerful spring *g*, by reason of the length of lever *l*, the fuse is subjected only to a moderate tension, while serving to maintain the grounding-spring separated from its ground connection. A further tension, however, may be placed upon the fuse-wire, if desired, by bending the lever *l* in inserting the fuse. In a course of experiments with the above device I have discovered that a much greater regularity in the current-carrying capacity of

fuses is secured when the same are placed under moderate tension than when connected with the protected circuits under no tension whatever, as commonly obtains.

5 Having now described my invention, I claim, and desire to secure by these Letters Patent, the following:

1. In a strong-current arrester, the combination with the heavy flat spring *g* of lever *l* 10 engaging the said spring, fulcrum *m* provided for said lever near the point of its engagement with the spring, part *c*, the said part and lever forming the terminals of the protected circuit, and a conductor adapted normally to close the circuit between the lever 15 and the second circuit-terminal against the tension of the heavy spring which tends to maintain the circuit-terminals in widely-separated positions, substantially as described.

20 2. In a fuse-holding device, the combination with a ground connection of a heavy spring adapted to effect contact therewith, a lever formed of spring-like material engaging the same at a short distance from its fulcrum, the said spring-like lever constituting 25 one of the circuit-terminals, a second circuit-terminal, and a fuse adapted to be connected between the said terminals thereby flexing the lever and heavy spring and normally opening the circuit to ground, substantially as described. 30

3. In a fuse-holder, the combination with lever *l* forming one terminal of the protected 35 circuit, of grounding-spring *g* engaging said lever near the fulcrum *m*, ground connection *a*, circuit-terminal *c*, and fuse *n* adapted to

be connected between the said terminals when the lever *l* is depressed, by which a tension is imparted to said fuse and spring *g* is raised from its ground-contact, substantially as described. 40

4. The combination with a heavy spring *g* of lever *l* formed of spring-like material engaging the same constituting one terminal of the protected circuit, part *c* constituting the 45 second terminal thereof, and a fuse *n* adapted to be inserted between the said terminals against the tension of the lever *l* and spring *g*, whereby the circuit is completed during the normal flow of current, substantially as described. 50

5. In a fuse-holder, the combination with the grounding-spring *g* of the ground connection *a* adapted to be engaged thereby, the lever *l* engaging the said spring near the fulcrum *m* and adapted to raise the spring and break the ground connection thereof, said lever forming one terminal of the protected 55 circuit, a fuse, and means for securing the same to the end of the lever remote from said spring, and a second circuit-terminal to which the fuse is adapted to be attached, thus depressing the lever *l*, maintaining a tension upon said fuse, and raising the spring from its ground connection, substantially as described. 60 65

In witness whereof I hereunto subscribe my name this 16th day of September, A. D. 1896.

WILLIAM W. DEAN.

Witnesses:

GEORGE P. BARTON,
GEORGE L. CRAGG.