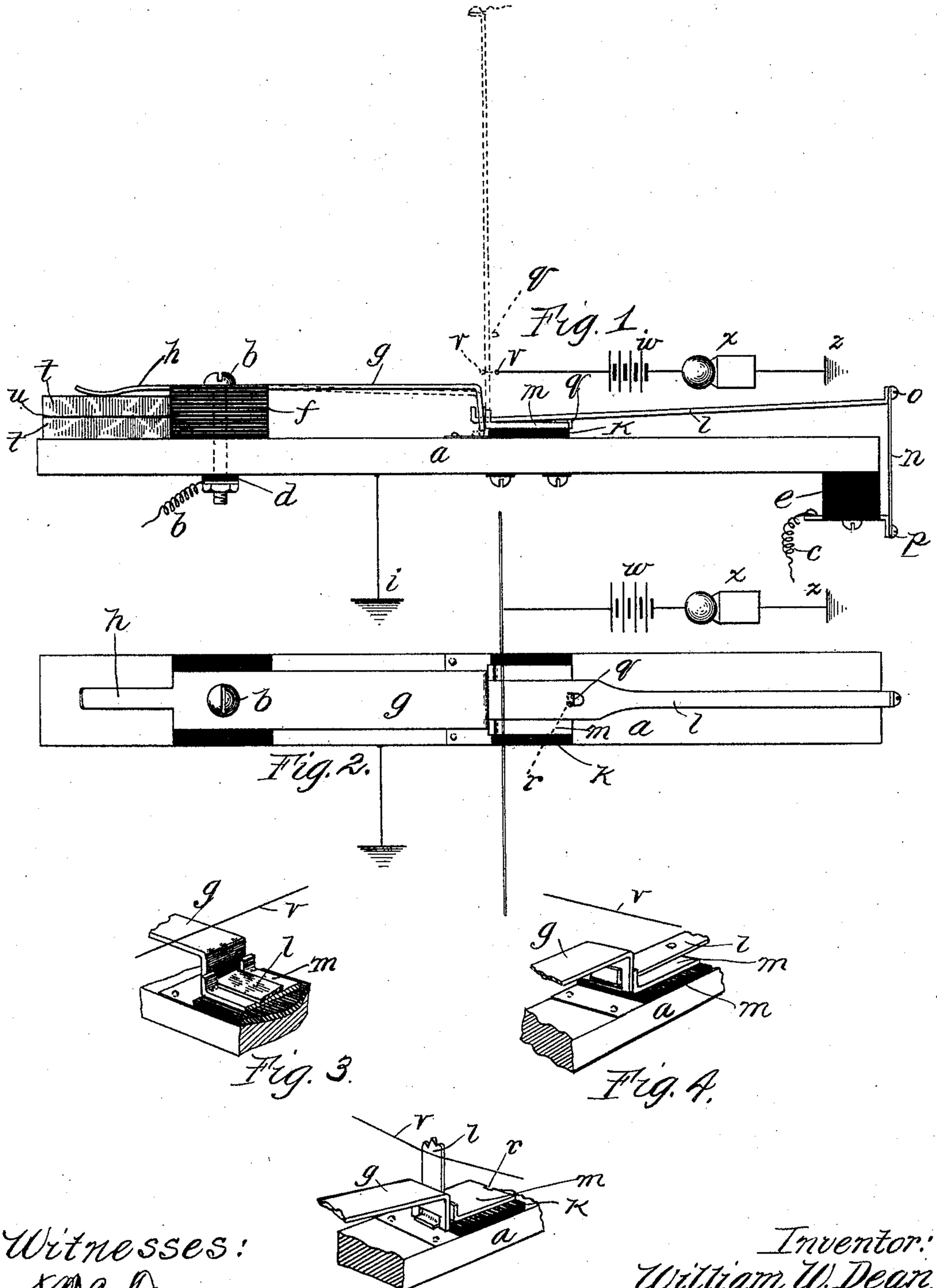
(No Model.)

W. W. DEAN.

FUSE HOLDER.

No. 576,040. Patented Jan. 26, 1897.



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UNITED STATES PATENT OFFICE.

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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.

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* 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 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.

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 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.

3. In a fuse-holder, the combination with lever *l* forming one terminal of the protected 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.

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 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.

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 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.

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

WILLIAM W. DEAN.

Witnesses:

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