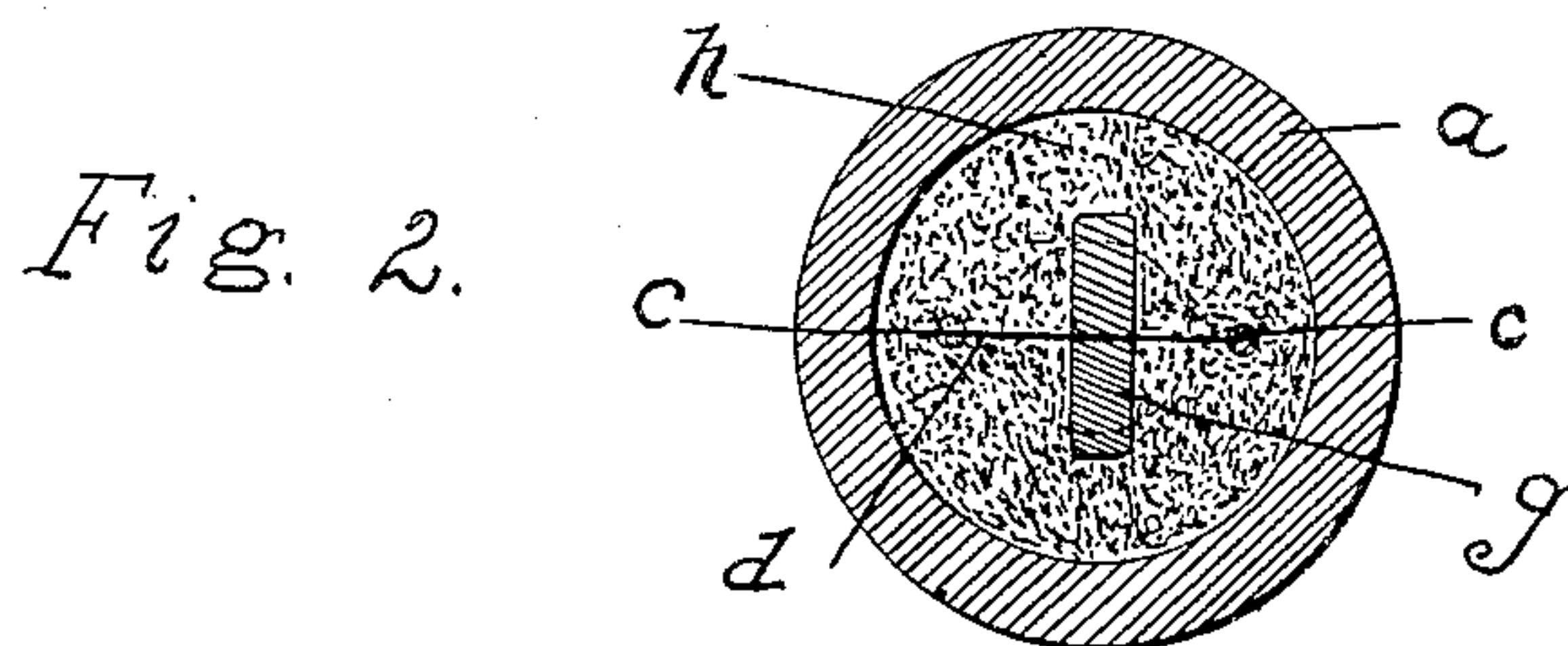
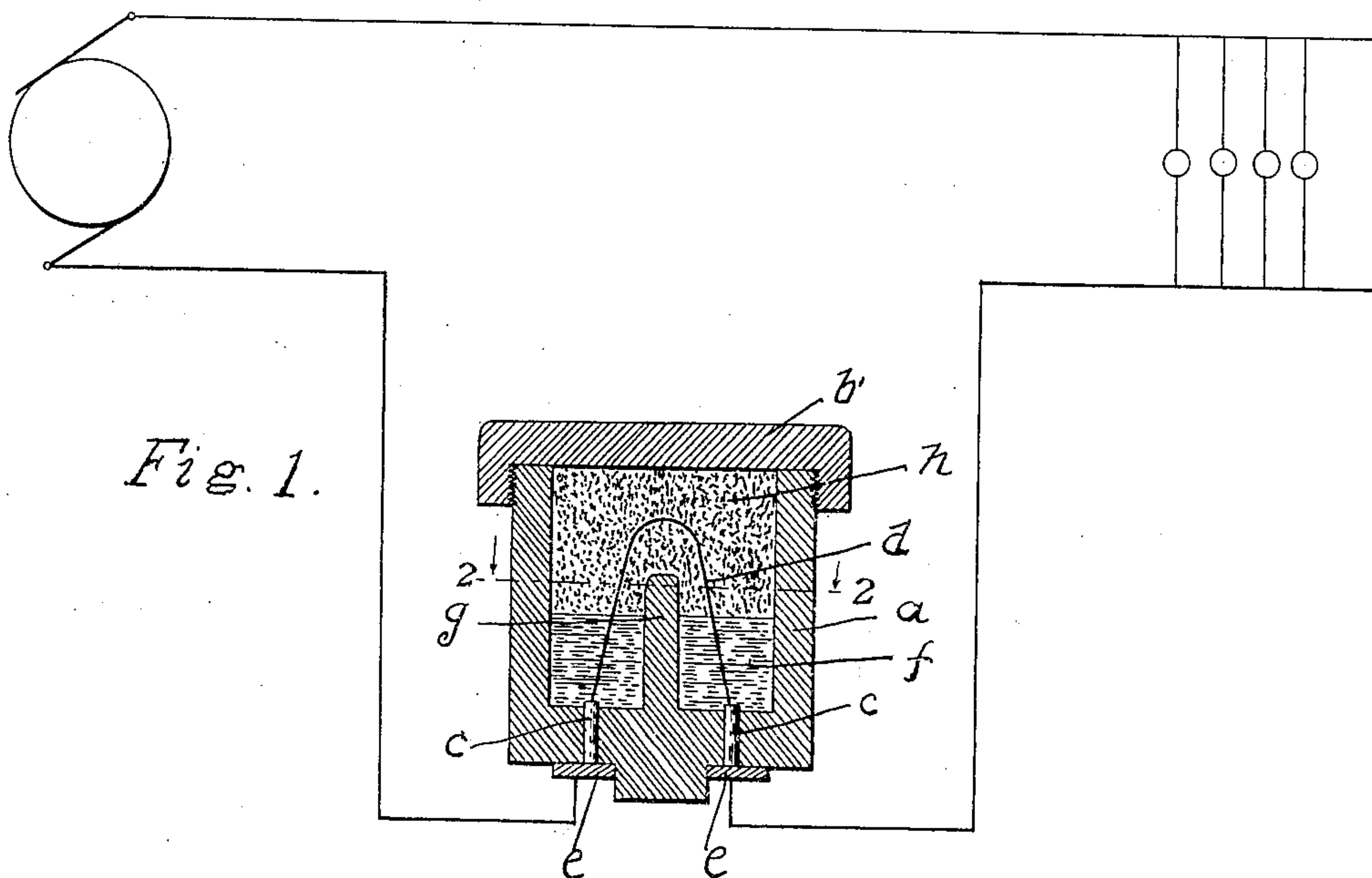


No. 769,995.

PATENTED SEPT. 13, 1904.

O. FEUERLEIN.
CUT-OUT OR FUSE FOR ELECTRIC CIRCUITS.
APPLICATION FILED SEPT. 9, 1899.

NO MODEL.



Witnesses:
May Label
J. E. Mahoney

Inventor:
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UNITED STATES PATENT OFFICE.

OTTO FEUERLEIN, OF CHARLOTTENBURG, GERMANY, ASSIGNOR TO THE
SIEMENS & HALSKE ELECTRIC COMPANY OF AMERICA, OF CHICAGO,
ILLINOIS, A CORPORATION OF ILLINOIS.

CUT-OUT OR FUSE FOR ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 769,995, dated September 13, 1904.

Application filed September 9, 1899. Serial No. 729,896. (No model.)

To all whom it may concern:

Be it known that I, OTTO FEUERLEIN, a subject of the Emperor of Germany, residing at Charlottenburg, Germany, have invented a certain new and useful Improvement in Cut-Outs or Fuses for Electric Circuits, 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 relation to thermal cut-outs or fuses for electric circuits, and has for its object the provision of a safety-fuse by the use of which the danger and the force of the explosion on the occurrence of a short-circuit is materially decreased.

It has been customary in employing electric fuses, especially in connection with high-potential circuits, to inclose the terminals of the fuse-wire and the metallic leads thereof in cement, gypsum, or some other self-hardening insulating material, leaving the remainder of the wire exposed. Upon a rupture of the fuse due to an overload or short-circuit the rupture of the fuse is frequently accompanied by an explosion which scatters fine metallic particles and a flame which is liable not only to burn the base of the fuse and other surrounding material, but which also tends to short-circuit the protected and neighboring circuits whose conductors the flames may happen to strike.

In accordance with my invention I decrease the harmful effects caused upon a rupture of the fuse by surrounding the intermediate portion of the fuse-wire with talc, which I have found to be a substance that contains to a high degree the power of readily absorbing the gases and metallic vapors resulting upon the melting of the fuses.

My invention will be more readily understood by reference to the accompanying drawings, illustrating one application thereof, in which—

Figure 1 represents a vertical section of a fuse-plug, and Fig. 2 a horizontal section thereof on line 2 2 of Fig. 1.

Like letters of reference indicate like parts in both views.

In the application of the invention illustrated an insulating-receptacle *a*, preferably of porcelain, is provided with a removable cover *b*. The receptacle contains two openings, through which are passed metal leads *c c*, united with the fuse-wire *d*. The metallic portions *e e* for connecting the same in circuit are connected with the fuse and form the terminals. At the bottom of the receptacle *a* and covering the heads of the leads *c c* and the terminal portions of the fuse-wire *d* is placed a layer of any suitable self-hardening insulating material *f*. A dividing-wall *g* is provided in the central portion of the receptacle and extends above the insulating material *f*. The fuse-wire is looped over the wall *g*. The said wall prevents the maintenance of an arc after the circuit is broken. The talc filling *h* incloses the intermediate part of the fuse-wire *d* that would otherwise be exposed. It is found after a melting of the fuse that the talc contains numerous small pieces of metal and metal oxid, showing that the metallic vapor is quickly condensed and that the gases are absorbed by the talc. I am thus able to reduce and minimize the harmful effects due to the burning of a fuse by the use of powdered talc, which I have found to be the material best adapted to this result. The force of the explosion is also reduced, the cover or other parts that may be associated with the fuse not being liable to rupture or forcible removal. The danger of fire due to the flame is also minimized.

It is evident that a great number of different applications may be made of the invention herein shown and particularly described without departing from the spirit thereof, and I do not, therefore, wish to be limited to the precise disclosure made. In the claims I use the word "talc" in the sense of any material possessing the properties herein pointed out.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a fuse bent in the

form of a loop, a casing therefor carrying terminals to which the fuse is connected, a wall integral with the casing over which the fuse extends, a filling of cement inclosing the terminals and portions of the fuse adjacent thereto, and a filling of talc inclosing the intermediate portion of the fuse.

2. The combination with a fuse bent in the form of a loop, of a filling of cement inclosing the terminals thereof, a wall intervening between the ends of the fuse, and a filling of talc inclosing the intermediate portion of the fuse, substantially as described.

3. The combination with a fuse bent in the form of a loop, of a refractory cement inclosing the terminals thereof, a wall between the terminals over which the fuse extends, and a filling of a finely-divided refractory substance

surrounding the intermediate portion of the fuse.

4. A fuse-plug for electric circuits comprising a plug, a removable cover therefor, a fuse bent in the form of a loop and attached to terminals extending through the plug whereby it is connected in the circuit, a wall intervening between the ends of the fuse, a filling of cement in the plug inclosing said terminals, and a finely-divided refractory substance surrounding the intermediate portion of the fuse and filling the plug.

In witness whereof I hereunto subscribe my name this 30th day of June, A. D. 1899.

OTTO FEUERLEIN.

Witnesses:

HENRY HASPER,

WOLDEMAR HAUPT.