

B. P. ROWE & S. M. KINTNER.

FUSE RECEPTACLE.

APPLICATION FILED SEPT. 20, 1908.

933,787.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.

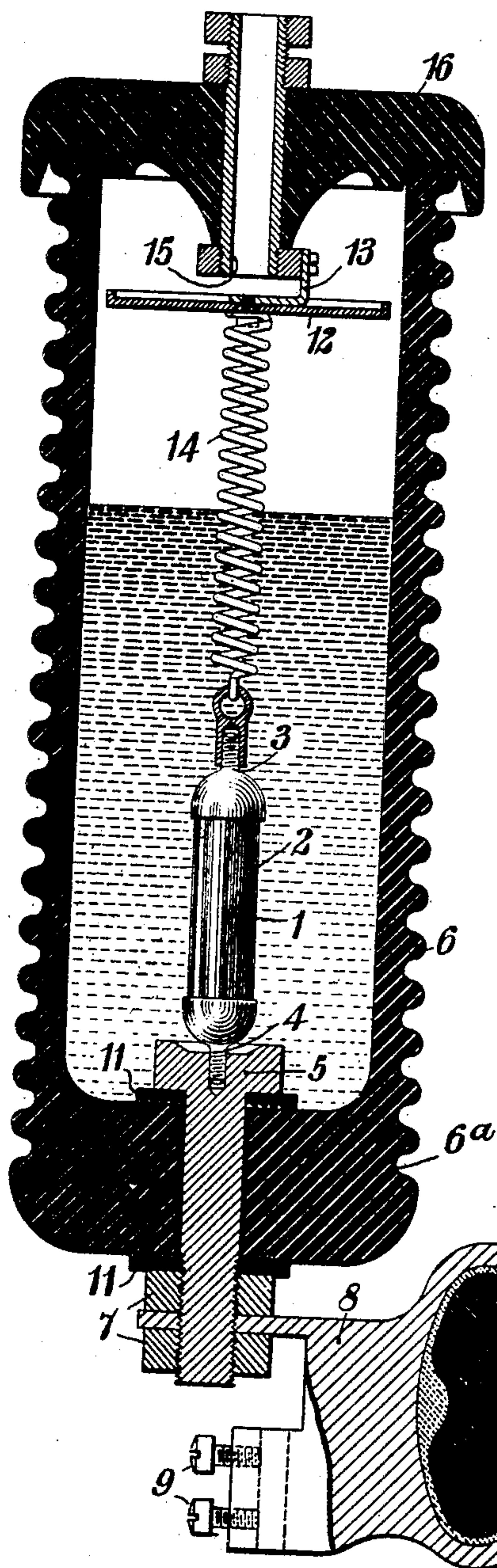


Fig. 1.

WITNESSES:

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FUSE RECEPTACLE.

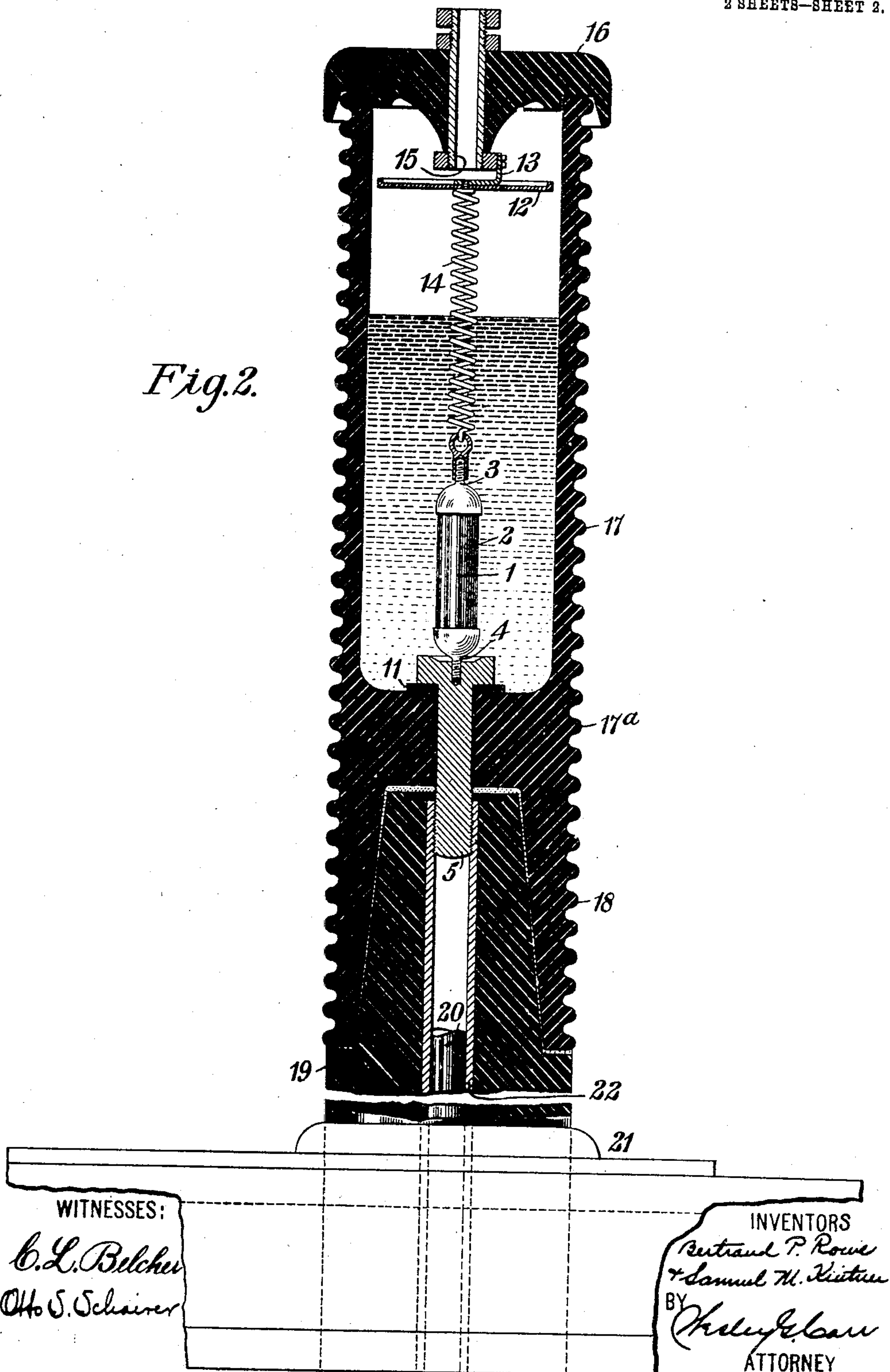
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2 SHEETS—SHEET 2.

Fig. 2.



UNITED STATES PATENT OFFICE.

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FUSE-RECEPTACLE.

933,787.

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To all whom it may concern:

Be it known that we, BERTRAND P. ROWE and SAMUEL M. KINTNER, citizens of the United States, and residents, respectively, of Wilksburg and of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Fuse-Receptacles, of which the following is a specification.

Our invention relates to inclosing and supporting means for electrical circuit fuses, and it has for its object to provide a structure of the character indicated which shall be specially adapted for the protection of apparatus utilized in connection with high potential circuits, such, for example, as transformers, ground detectors, etc.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of apparatus embodying our invention, a portion of the insulator upon which the apparatus is mounted being also shown partially in elevation and partially in section. Fig. 2 is a longitudinal sectional view of a modified form of our apparatus and a portion of a transformer casing, in elevation, upon which the apparatus is mounted.

Referring first to Fig. 1, the fusible wire or strip 1, which is utilized for interrupting the circuit in case of an excessive flow of current therethrough, is preferably located within a tube 2 of glass or other easily fractured material, its ends being connected to terminals 3 and 4 in the usual or any suitable manner. The terminal 4 has a screw-threaded connection with a rod 5 which projects through the lower end 6^a of a shell or casing 6 formed of porcelain or other suitable insulating material, the outer surface of which may be corrugated, as indicated. The rod 5 is connected, by means of nuts 7, to a terminal block 8 that is provided with suitable binding screws 9 and is securely mounted upon an insulator 10 of any suitable construction, here indicated as of the multi-petticoat type such as is used in high tension work.

The opening through the lower end of the casing 6 to receive the rod 5 is packed to prevent the passage of fluid therethrough, by means of suitable gaskets 11. The terminal 3 is connected to a disk 12 and bracket 13 near the upper end of the casing 6 by

means of a spring 14, which is normally held under tension by the receptacle 2, so that, when the receptacle is shattered by the blowing of the fuse 1, the terminal 3 will be quickly moved to a materially greater distance from the terminal 4 than it occupies when the fuse and its receptacle are intact. The casing 6 is preferably partially filled with oil or other insulating liquids, as indicated in the drawings, and the bracket 13 is fastened to the lower end of a tube 15 which projects through an opening in the cap or cover 16 of the casing 6, this tube serving as a vent opening and the expulsion of oil therethrough being prevented by means of the protecting disk 12.

Referring, now, to Fig. 2 of the drawings, the parts 1, 2, 3, 4, 5, 11, 12, 13, 14, 15 and 16 are substantially the same in structure and mode of operation as the corresponding parts shown in Fig. 1 and hereinbefore described. In this modification, however, the casing 17 has a portion 18 that projects below the base portion 17^a and is fitted upon, and preferably cemented to, a transformer terminal tube 19 of insulating material. The terminal 20 of the transformer 21 is provided with a tube 22 that projects through the insulating tube 19 and has a screw-threaded connection with the lower end of the rod 5. By reason of this arrangement of parts, the insulating terminal tube 19 may be made shorter than would otherwise be the case, since the voltage strains through the air are transferred largely to the porcelain casing 17, 17^a and 18.

The structural details of the apparatus may, of course, be varied from what we have specifically illustrated and described, provided the contemplated mode of operation and result are retained.

We claim as our invention:

1. The combination with an insulating receptacle having a cover provided with a vent opening and a shield for said opening, and a body of insulating fluid contained in said receptacle, of separable circuit terminals within the receptacle, and an inclosed fuse device connected between the terminals and adapted to be ruptured upon the passage of more than a predetermined amount of current.

2. The combination with a hollow insu-

lator having a cover provided with a vent opening, and a body of insulating fluid contained within the insulator, of stationary circuit terminals that project respectively through the bottom and the cover of the insulator, a resiliently suspended terminal piece, and an inclosed fuse device connected between said terminal piece and the bottom circuit terminal and adapted to be ruptured by the passage of more than a predetermined amount of current.

3. The combination with a hollow insulator having a cover and containing a body of insulating fluid, of circuit terminals that project respectively through the bottom and the cover of the insulator, an inclosed fuse device having terminal pieces connected to the respective circuit terminals, a fusible conductor, an inclosing means therefor that is ruptured by fusing the conductor, and means for separating the terminals of the fusible conductor when its inclosing means is ruptured.

4. The combination with a hollow insulator having a cover and containing a body of insulating fluid, of circuit terminals that project respectively through the bottom and the cover of the insulator, an inclosed fuse device having terminal pieces connected to the respective circuit terminals, a fusible conductor, an inclosing means therefor that is ruptured by fusing the conductor, means for separating the terminals of the fuse when its inclosing means is ruptured, and means secured to the outer end of the lower circuit terminal for supporting the insulator.

5. The combination with a hollow insulator having a cover and containing a body of insulating fluid, of circuit terminals that project respectively through the bottom and the cover of the insulator, an inclosed fuse device having terminal pieces connected to the respective circuit terminals, a fusible conductor, an inclosing means therefor that is ruptured by fusing the conductor, means for separating the terminals of the fuse when the inclosing means is ruptured, an insulating support for the insulator, and a conductor inclosed in said support and con-

nected to the lower end of the lower circuit terminal.

6. The combination with a hollow insulator having a cover and containing a body of insulating fluid, of circuit terminals that project respectively through the bottom and the cover of the insulator, an inclosed fuse device having terminal pieces connected to the respective circuit terminals, a fusible conductor, an inclosing means therefor that is ruptured when the conductor is fused, means for separating the terminals of the fuse when the inclosing means is ruptured, a conductor connected to the lower end of the lower circuit terminal, and an insulator therefor that supports the hollow insulator.

7. The combination with a hollow insulator having a cover provided with a vent opening and containing a body of insulating fluid, of circuit terminals that project respectively through the bottom and the cover of the insulator, an inclosed fuse device having terminal pieces connected to the respective circuit terminals, a fusible conductor, an inclosing means therefor that is ruptured by fusing the conductor, and means for separating the terminals of the fuse when its inclosing means is ruptured.

8. The combination with a hollow insulator having a cover and containing a body of insulating fluid, of circuit terminals that project respectively through the bottom and the cover of the insulator, the upper terminal being tubular to provide a vent opening, an inclosed fuse device comprising terminal pieces connected to the respective circuit terminals, a fusible conductor, an inclosing means therefor that is ruptured by fusing the conductor, and means for separating the terminals of the fuse when its inclosing means is ruptured.

In testimony whereof, we have hereunto subscribed our names this 13th day of September, 1906.

BERTRAND P. ROWE.
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Witnesses:

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