

(No Model.)

S. BERGMANN.

SAFETY CATCH PLUG FOR ELECTRIC CIRCUITS.

No. 319,384.

Patented June 2, 1885.

Fig 1.

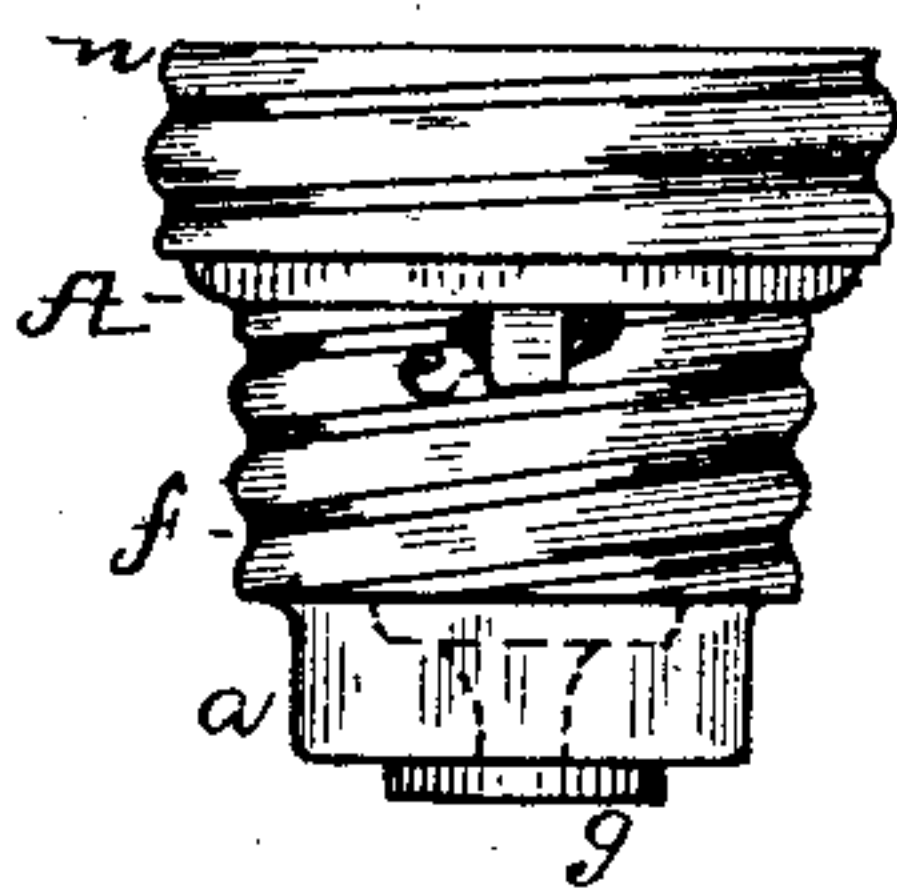


Fig 2.

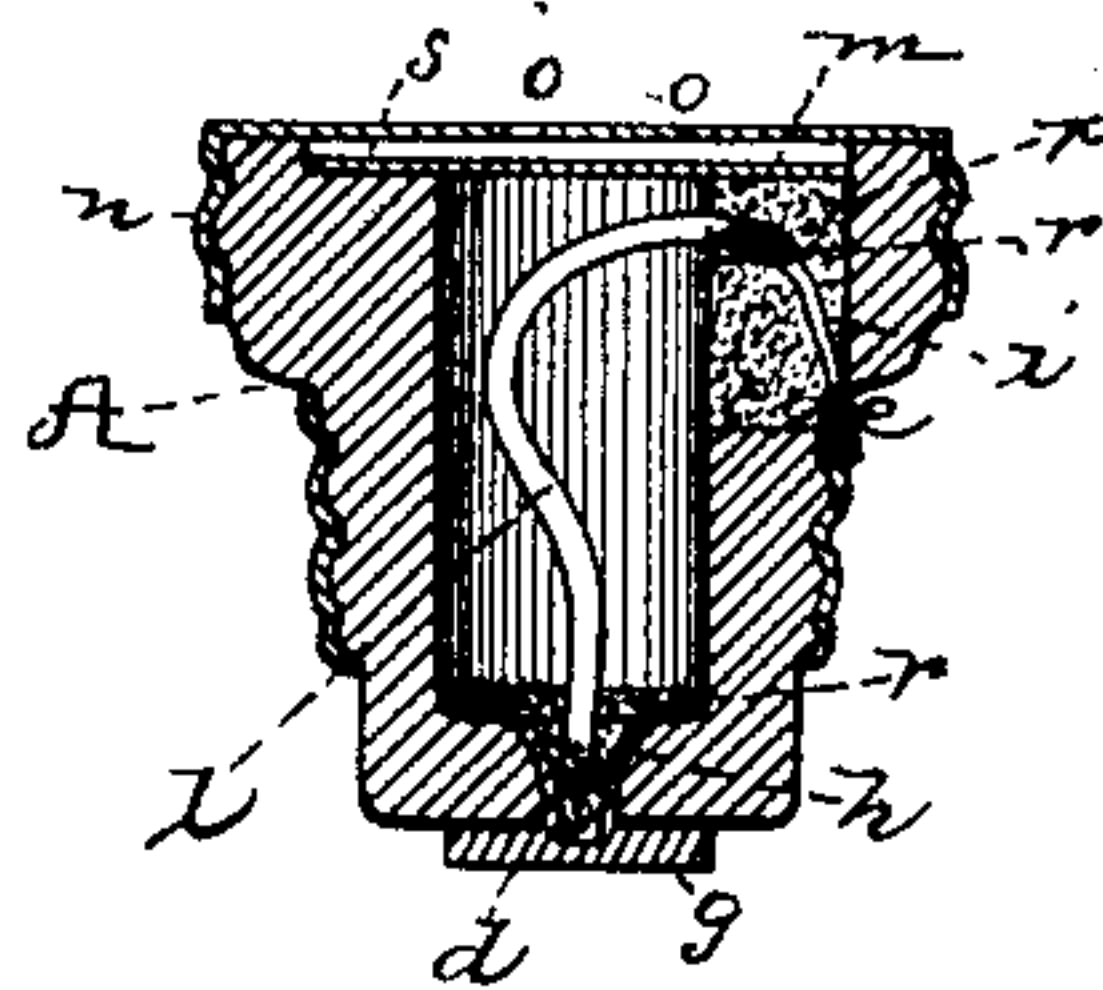


Fig 3.

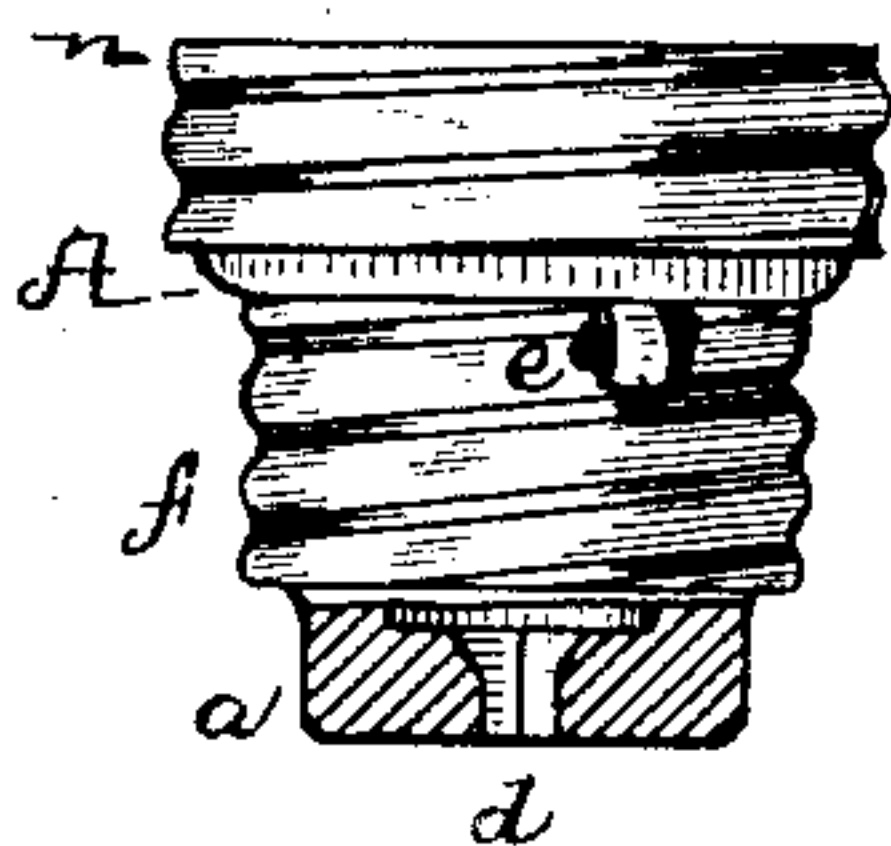


Fig 4.

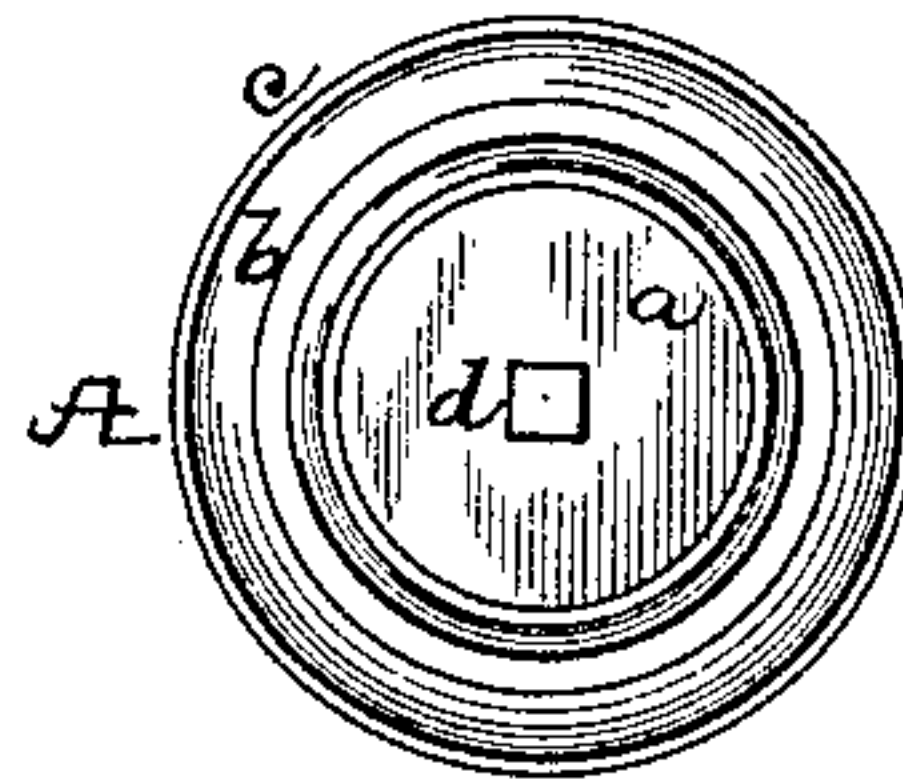
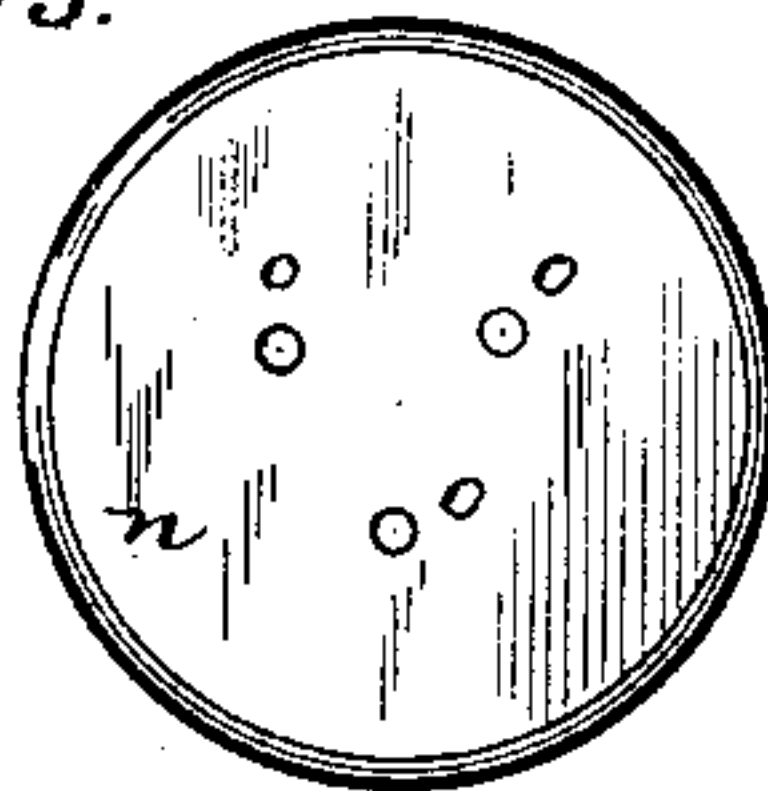


Fig 6.



Fig 5.



ATTEST:

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# UNITED STATES PATENT OFFICE.

SIGMUND BERGMANN, OF NEW YORK, N. Y.

## SAFETY-CATCH PLUG FOR ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 319,384, dated June 2, 1885.

Application filed June 6, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, SIGMUND BERGMANN, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Safety-Catch Plugs for Electric Circuits, of which the following is a specification.

The object of this invention is to provide an efficient plug for carrying a safety-catch for a circuit of a system of electric lighting having outside terminals, so that when the plug is inserted in a suitable receptacle the safety-catch is placed in circuit. The plug which I have devised is simple of manufacture and durable and efficient in use, cannot be injured by the heat of the fused safety-catch, or by any arc or bad contact which might accidentally be formed within it, and is not affected by moisture.

The invention is illustrated in the annexed drawings, in which Figure 1 is a view in elevation of a complete plug; Fig. 2, a vertical section of the same; Fig. 3, a different elevation of the plug, with the lower part in section and the bottom terminal and safety-catch removed; Fig. 4, a bottom view of the plug with the terminals removed; Fig. 5, a top view of the complete plug, and Fig. 6 a separate sectional view of the bottom terminal.

The body of the plug is a hollow chamber, A. I make this of a non-combustible insulating material. For this purpose I prefer to employ glass. The glass body is smallest at its circular lower portion, *a*, is enlarged above this, and screw-threaded at *b*, and is further enlarged and screw-threaded at its upper part, *c*. It is open at the top, and in the bottom has a small aperture, *d*, whose sides are beveled, so that the aperture is larger at its inner end than at the outer. A square aperture, *e*, is also formed in the side of the plug. Above this aperture the glass is channeled out, as shown at *p*, to the top of the plug.

This glass plug may be formed by any usual method.

The externally and internally screw-threaded metal ring *f* forms one of the plug-terminals. This is screwed upon the part *b* of the plug, the upper edge of it coming over the aperture *e*. The edge is then cut or punched at this point, so that the sides of the cut part

are or may be bent into the aperture *e*, thus keeping the ring *f* from turning on the plug. In addition, the ring *f* may, if desired, be secured to the glass by cement. The other terminal is the metal plate *g*, which has the tubular stem *h* extending from it. To attach this terminal, stem *h* is placed in aperture *d*, the plate *g* being brought close against the bottom of the plug, and a square-pointed punch is thrust down from above into stem *h*, bending it out against the beveled sides of the aperture, and so securing the plate to the plug. Instead of this a metal cap may be placed on the end of the plug and secured by cement or otherwise. Next the copper strip *i* is inserted, extending into the plug from the aperture *e*, its end *k* filling the aperture, and is secured at this point to ring *f* by soldering. The strip *i* extends up through the space *p* nearly to the top of the plug, so that the two terminals within the plug are widely separated.

The lead wire safety-catch *l* is soldered to the copper strip at *m*, and its other end is soldered into stem *h*. The copper strip *i* serves to remove the lead to a distance from aperture *e*, for if the end of the lead wire entered such aperture the melted lead might escape when the safety-catch is fused.

The chamber is closed by a metal cap, *n*, which is screwed upon the plug at *c*, and is removed to replace the safety-catch. This cap is provided with vent-holes *o o*, of which one or more may be employed. These permit the escape of the gases generated when the safety-catch is fused, which, if confined to the chamber, might cause connection to be made between the terminals.

I prefer to fill the space *p* and cover the bottom terminal within the plug with plaster-of-paris, *r*, or similar non-combustible insulating material. This assists to prevent the formation of an arc between the terminals when the safety-catch is fused. However, the distance between the terminals is usually so great as to prevent this. I also may place a disk, *s*, of asbestos over the hollow chamber, a seat being formed for it, as shown in Fig. 2. This, while it does not close the plug air-tight, prevents any melted lead from blowing out through the holes in the cover, which might otherwise occur occasionally.



The plug is screwed into a suitable receptacle having corresponding interior terminals, as is usual.

Being made of non-combustible material, there is no danger of the plug being injured by the fusing of the safety-catch, as in the wooden plugs heretofore used. Consequently the same plug can be used an indefinite number of times by replacing the safety-catch. The glass plug is also not affected by moisture.

What I claim is—

1. A hollow safety-catch plug formed of non-combustible insulating material and carrying a fusible safety-catch within it, substantially as set forth.

2. A hollow safety-catch plug formed of non-combustible insulating material, carrying two terminals upon its exterior and a fusible safety-catch within it connecting said terminals, substantially as set forth.

3. A hollow glass safety-catch plug having two terminals attached to its exterior and a fusible safety-catch within it connecting said terminals, substantially as set forth.

4. The glass safety-catch plug having a screw-threaded portion for holding the screw-threaded ring-terminal, substantially as set forth.

5. The hollow glass safety-catch plug having a screw-threaded portion for holding the screw-threaded ring-terminal, and an aperture in its bottom for holding the plate terminal, substantially as set forth.

6. The combination of a hollow safety-catch plug having an aperture in its bottom and a plate-terminal having a tubular stem inserted

in such aperture for holding the terminal upon the plug, substantially as set forth.

7. The hollow safety-catch plug with an aperture in its bottom having beveled sides, in combination with the plate-terminal having a tubular stem adapted to be placed in such aperture, and bent out to hold the terminal against the bottom of the plug, substantially as set forth.

8. A hollow safety-catch plug having an exterior ring-terminal and an aperture in the side of the plug, and a projection from the metal of the ring extending into said aperture, to keep the ring from turning on the plug, substantially as set forth.

9. In a hollow safety-catch plug, the tubular stem of the bottom terminal entering the plug, in combination with the safety-catch soldered in said tubular stem, substantially as set forth.

10. The cap for closing a hollow safety-catch plug, provided with one or more vent-holes, substantially as set forth.

11. In a hollow safety-catch plug, the combination, with the terminals within the plug, of non-combustible insulating material covering said terminals, substantially as set forth.

12. The combination, with the hollow plug and the cap, of the asbestos piece covering the plug beneath the cap, substantially as set forth.

This specification signed and witnessed this 21st day of April, 1884.

SIGMUND BERGMANN.

Witnesses:

WM. H. MEADOWCROFT,  
T. G. GREENE, Jr.