(No Model.)

G. PFANNKUCHE.

ELECTRIC SAFETY FUSE.

No. 332,286. Patented Dec. 15, 1885.

Fig. 1,

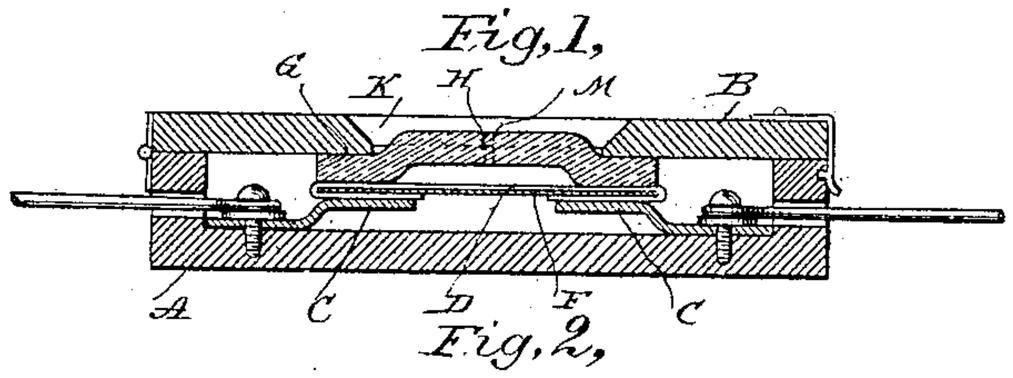


Fig. 2,

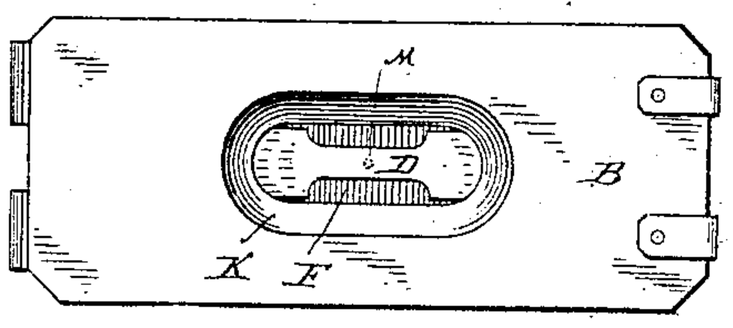


Fig. 3,

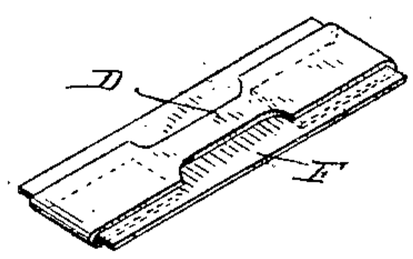
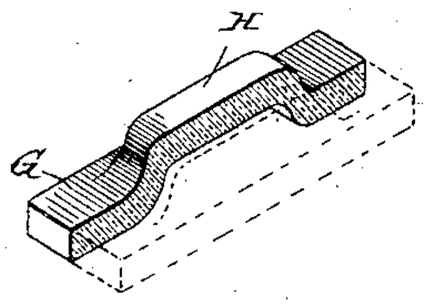


Fig. 4.



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By his Attorney: W.B. Townsend

UNITED STATES PATENT OFFICE.

GUSTAV PFANNKUCHE, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE SCHUYLER ELECTRIC LIGHT COMPANY.

ELECTRIC SAFETY-FUSE.

SPECIFICATION forming part of Letters Patent No. 332,286, dated December 15, 1885.

Application filed July 8, 1885. Serial No. 170,997. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV PFANNKUCHE, a subject of the Emperor of Austria, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Electric Safety-Fuses, of which the following is a specification.

My invention relates to fusible electric conductors designed to be placed in an electric circuit and to fuse or melt when the current shall increase to a predetermined amount.

My invention relates to the construction of the fuse and of its containing box or case, and is designed to simplify the construction, facilitate the operations of renewal, and to provide for the inspection of the fuse, as well as to improve the connection of the same with the contact-terminals with which it is placed in connection when inserted in the box.

The special combinations and features of novelty constituting my invention will be first described in connection with the accompanying drawings, and then pointed out in the claims.

In the drawings, Figure 1 is a longitudinal section of a fuse-box and fuse constructed and arranged in accordance with my invention. Fig. 2 is a plan of the same. Fig. 3 is a perspective view of the fusible conductor mounted on its supporting-strip. Fig. 4 is a perspective view of a glass cap or cover-plate for the fuse, shown in longitudinal section.

Referring to Fig. 3, D indicates a flat strip of some conducting and readily-fusible material—such, for instance, as a mixture of tin and lead or bismuth and lead, or such like alloy. It is stamped out of a sheet of the material into the form shown, its reduced center portion constituting the fusible part, while its enlarged ends are made sufficiently long to permit them to be bent around under the edge of a strip or sheet of non-conducting material, F, which I prefer to make of mica, as the same is not injured by melted material in case of melting of the fuse. If desired, the ends of the strip may be also cemented to the mica plate by Canada balsam or other suitable material. The turned-under ends of the fusible strip serve the purpose of securing the same to the mica plate, and likewise form surfaces for connection with the contact-terminals in the box.

A, Fig. 1, indicates the fuse-box, made, preferably, of wood or some other non-conducting material, and having mounted in its base contact-terminals C C, that are secured to the bottom of the box by screws, which latter may serve also as the means of connection of the conductor or conductors forming the electric circuit in which the fuse is to be placed. The contact-terminals C C are preferably spring-terminals, as indicated, and the fusible strip rests upon them, as shown in Fig. 1, the ends of the strip beneath the mica plate being in contact with the springs.

B indicates the cover of the box, which may be hinged thereto and provided with a catch, as indicated, or otherwise applied, so that the box may be opened for removal of the fusible strip or for purposes of renewal. The center of the cover B is provided with an opening, K, as shown.

To cover up the strip, and at the same time have it visible and open for inspection, I provide a cap or cover plate, G, made, preferably, of molded glass and adapted to rest with its margin flat on the mica plate and upon the enlarged part of the fuse on the top of said plate. The central portion of the cover-plate is molded out, as indicated, in such fashion as to have a glass cupola over the fusible portion of the strip D, thus leaving the fuse untouched at such point and free to fuse at an exact temperature. The enlarged or raised central portion of the transparent cover-plate projects up into the opening K in the cover B, so that the transparent cover-plate is held from lateral displacement. The under part or side of the cover B presses firmly upon the edges of the glass cap or cover plate G, thus serving to press the fuse firmly into connection with the contact-terminals C C, so as to make good connection therewith. It is obvious that the same result of good connection might be obtained by substantially the same means if the cover or cap plate H G were dispensed with and the box were made sufficiently shallow, or the springs C C raised to such a point that the cover B would rest directly upon the ends of the fusi-

ble strip, so as to press it down upon the contact-springs.

The lid or cover B may be fixed or held down by other devices instead of by the catch shown.

When the parts are in the position shown in Fig. 1, the circuit is obviously through the springs, the turned-down ends of the fusible strip, and across the central or narrow portion of the latter.

The glass cupola or cover-plate may be provided with a small ventilating-hole, as indicated at M, so as to provide for expansion of the air when the fuse melts.

I do not limit myself to any particular form of fusible conductor or any particular configuration of mica plate F. The form and construction of the contact-terminals may also be varied without departing from the combinations and constructions forming the invention claimed.

What I claim as my invention is—

1. A flexible and fusible conductor for electric circuits, mounted upon and bent around under the edges of a non-conducting strip.

2. The combination, with the mica base, of the fusible conducting-strip having its ends bent around under the mica sheet.

3. The combination, in a safety electric-fuse box, of contact-terminals in the bottom of the box, a fusible conductor resting upon and with its ends in contact with said terminals, and a box-cover pressing directly or indirectly upon the ends of the fusible conductor.

4. In a safety electric-fuse box, a cover-plate having an opening at its center over the fuse, in combination with the glass cap covering the fuse and projecting up into the opening.

5. The combination of the contact-terminals on the box, the fuse having its ends turned down under the edges of the non-conducting strip, the glass cap-piece or cover, and the box-cover pressing the parts into contact, as described.

Signed at Hartford, in the county of Hartford and State of Connecticut, this 8th day of May, A. D. 1885.

GUSTAV PFANNKUCHE.

Witnesses:

HIRAM WILLEY,

C. J. COLE.