No. 606,771 Patented July 5, 1898.

J. B. SMITH.

FUSE BOX.

(Application filed Feb. 23, 1897.)

(No Model.)

Fig. 1.

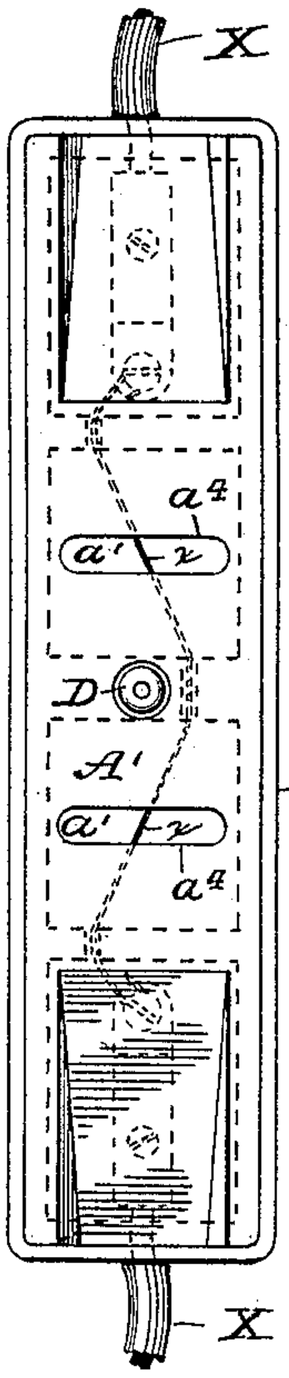


Fig. 2.

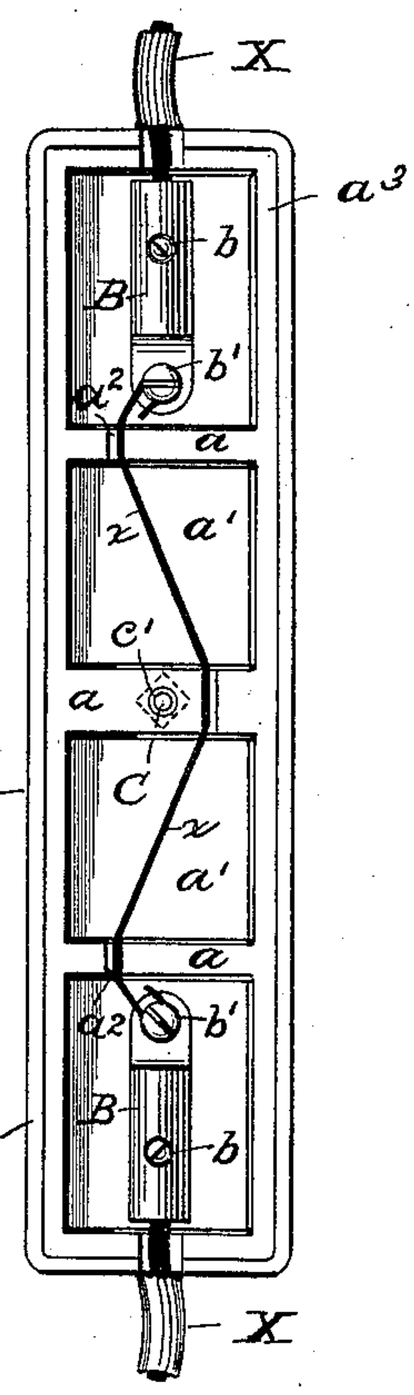


Fig. 3.

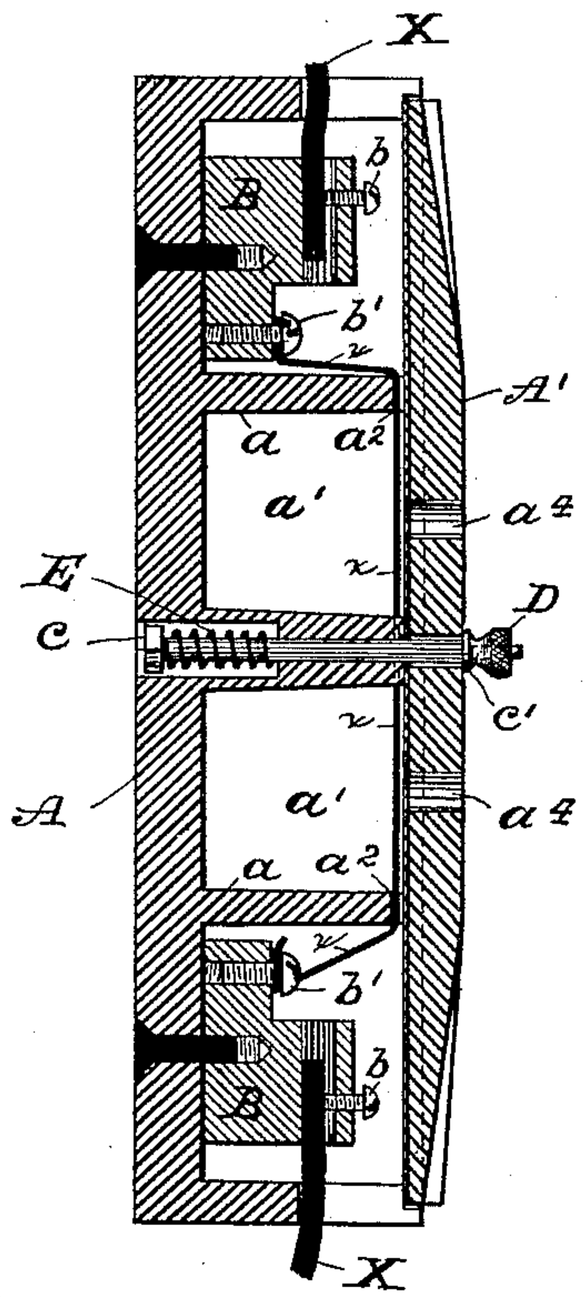
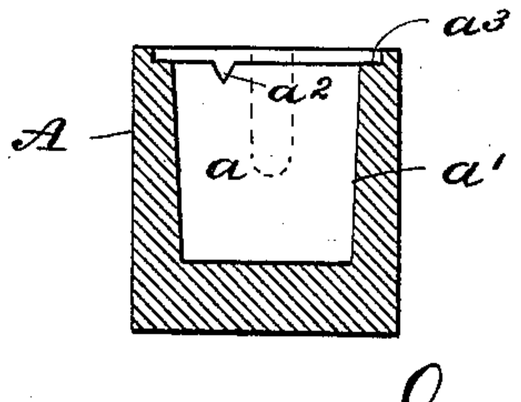


Fig. 4.



Witnesses

Emlen N. Hardisty.

A. L. Kavanaugh

Inventor

Joseph Brodie Smith

By his Attorney J. B. Thurston

UNITED STATES PATENT OFFICE.

JOSEPH BRODIE SMITH, OF MANCHESTER, NEW HAMPSHIRE.

FUSE-BOX.

SPECIFICATION forming part of Letters Patent No. 606,771, dated July 5, 1898.

Application filed February 23, 1897. Serial No. 624,590. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BRODIE SMITH, a citizen of the United States, residing at Manchester, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Fuse-Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to fusible cut-outs for electric circuits, the object of the invention being to automatically open the electric circuit whenever an excessive current is flowing therein.

Upon the melting of the fuse in the fusible cut-outs heretofore used the current has continued to flow in the form of a destructive arc, which rapidly destroyed the cut-out and created danger from fire; and my present invention consists, broadly, in providing means whereby any tendency of the current to continue its flow over a melted fusible conductor is prevented or such flow immediately suppressed and the circuit promptly opened, as fully set forth in the following specification and claim and clearly illustrated in the accompanying drawings, forming a part of the same, of which—

Figure 1 represents an elevation of my improved fusible cut-out, Fig. 2 being a similar view with the cover of the case removed and showing the interior construction. Fig. 3 is a sectional elevation of my improved fusible cut-out, Fig. 4 being a cross-section of the case without its cover.

Similar reference-letters designate corresponding parts in all the views.

As a means of carrying my invention into effect I provide a pair of boxes for each circuit, as shown at A, these boxes being molded or formed from porcelain or other suitable non-conductive material and containing partitions a for forming one or more cells a', and at or near either end of the boxes are rigidly secured binders B for confining the adjacent ends of the conductor X, as by screws b, and screws b' are also threaded to said binders for clamping either end of a fusible conductor x, which is stretched over the partitions within the notches a^2 from one to the other of said binders B.

The boxes A are provided with a cover A′, which may have its under surface faced with asbestos or other fireproof material, and the boxes are preferably channeled, as at a^3, so that the cover may be easily held in position by a single screw or bolt C, having at one end a square head c and at the other a reduced threaded portion, to which is fitted a nut D, said reduced portion forming a shoulder c', against which said nut D will seat itself. The head c of said bolt rests in a socket formed in the bottom of the boxes and containing a helical spring E, bearing against said head in such a way as to draw the nut D down upon the top of the cover, and said cover is provided with an elongated opening or suitable perforation a^4, located, preferably, directly over the center of each cell a', and the fusible conductors x rest as close as possible to the under surface of said cover in passing from one partition to another and should pass under the center of either perforation a^4, as will be readily understood by the following: The arc resulting from the continuance of a current of electricity through a melted fusible conductor can easily be blown out, and this is the important feature of my invention as accomplished by the foregoing construction. The cell or cells a' are of course filled with air which is caused to expand by the heat attendant upon the melting of a fusible conductor, and as the cover A′ practically closes the cells a' against the escape of air, except through the perforations a^4, which are made small enough to cause a rapid movement of air through them, the confined air when expanded blows through said perforations a^4 with sufficient force to extinguish the arc, which immediately opens the circuit, thus preventing all dangers which might otherwise result.

If at any time the perforations a^4 in the cover A′ prove insufficient in consequence of an uncommonly rapid expansion of the air in a cell a', no damage will result, as said air will then exert its force against the cover, which, by reason of the spring E, will rise

sufficiently to permit its escape over the sides of the box A, after which the cover will again assume its proper position.

Having described my invention, what I claim is—

In a fusible cut-out, the combination, with a box provided with partitions, the upper edge of each of which is provided with a notch, and the inner edge of the walls of the box is recessed or provided with a shoulder even with the top of the partitions, the notches being out of alinement with each other and the central partition being provided with a shouldered opening extending from the bottom of the box to the top of the partition, and each end wall of the box being provided with an opening, of a cover for the box provided with a series of openings, the central one of which registers with the opening in the middle partition, and each of the other openings registers with the compartment between two partitions, a bolt through the box and the cover, the head of which fits within the larger portion of the opening in the partition and the point projects above the cover, a spring between the head of the bolt and the shoulder of the opening, a nut upon the bolt above the cover, a binder in each end compartment, and a fusible connector secured at its ends to the binders and having its intermediate portion passed through the notches in the partitions, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH BRODIE SMITH.

Witnesses:

J. B. THURSTON,

WILLIAM H. DRURY.