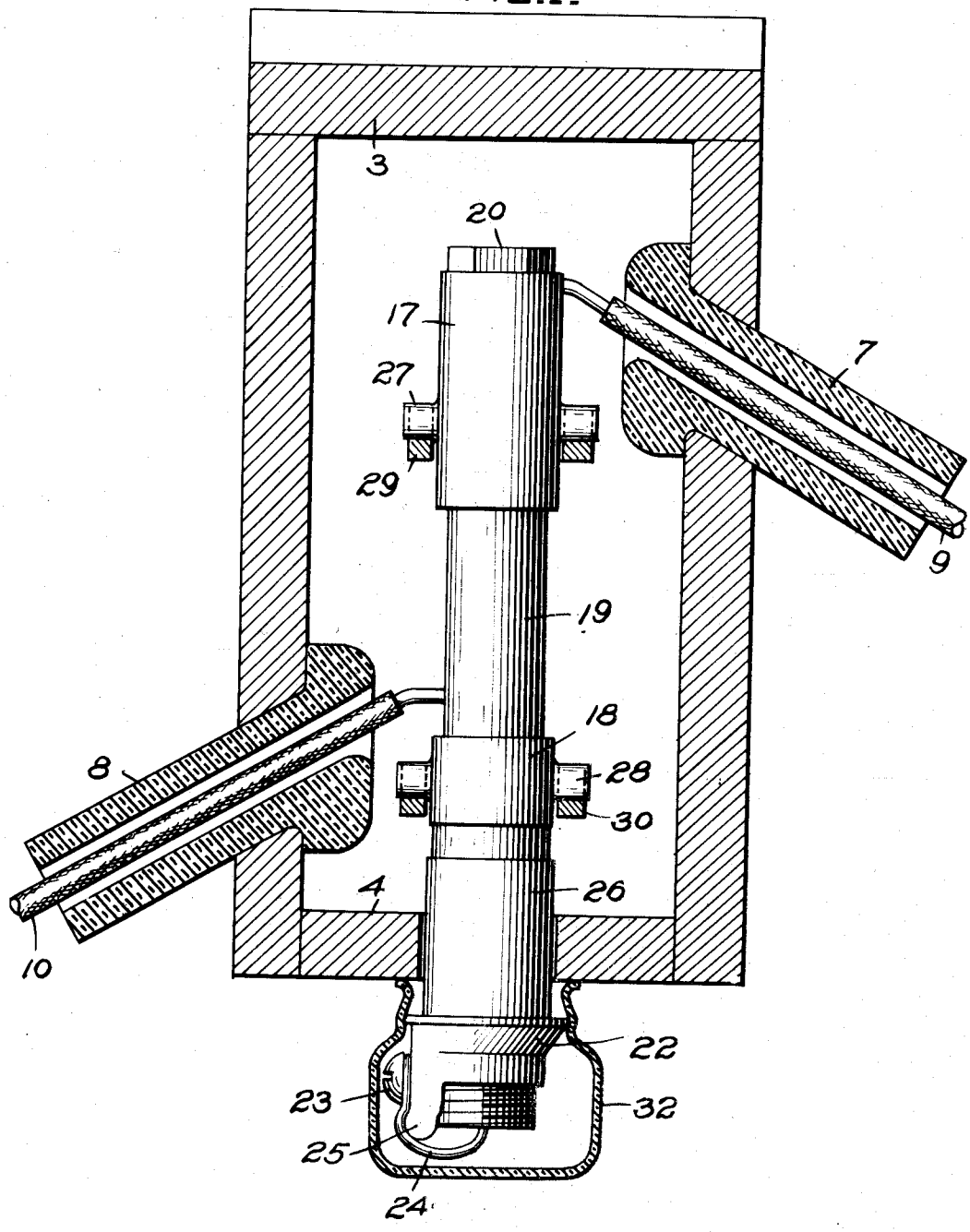
March 18, 1924. 1,486,960

L. C. HART

EXPULSION FUSE BOX

Filed Dec. 22, 1921 2 Sheets-Sheet 1

FIG. 1.



INVENTOR

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March 18, 1924. 1,486,960

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FIG. 2.

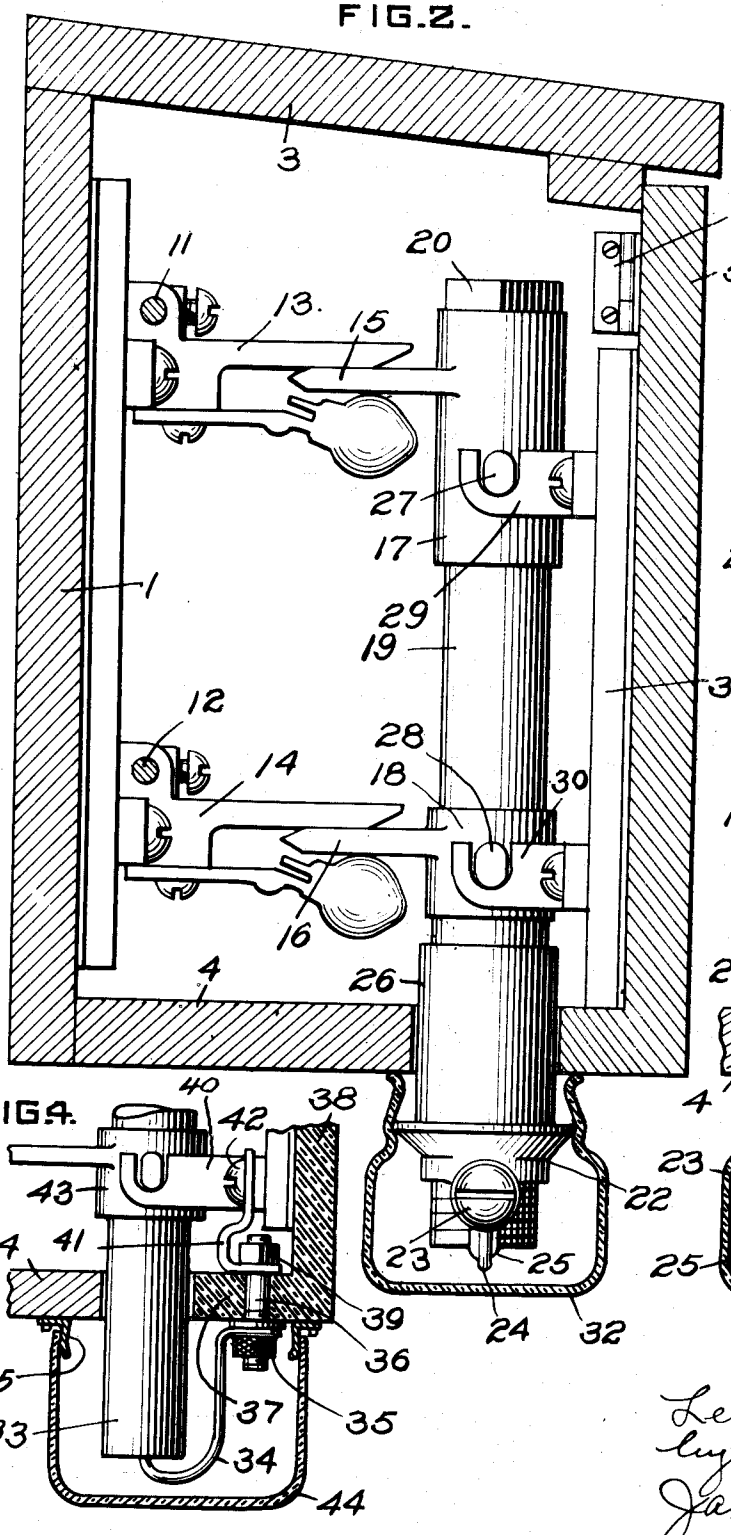


FIG. 3.

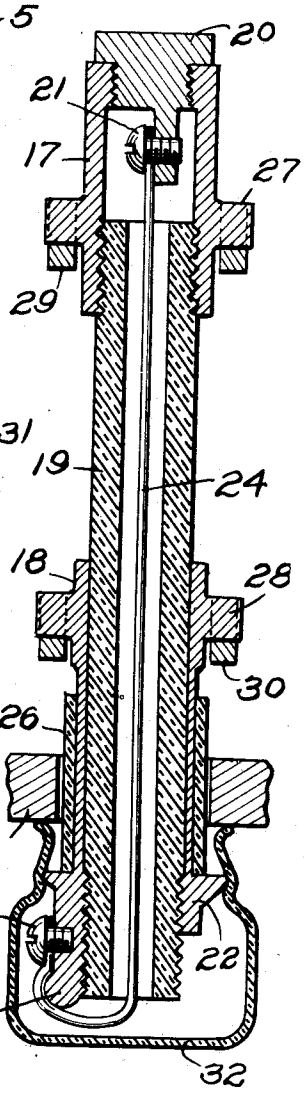


FIG. 4.

INVENTOR

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by

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Patented Mar. 18, 1924. 1,486,960

UNITED STATES PATENT OFFICE.

LESTER C. HART, OF CLEVELAND, OHIO, ASSIGNOR TO HI-VOLTAGE EQUIPMENT COMPANY, A CORPORATION OF PENNSYLVANIA.

EXPULSION FUSE BOX.

Application filed December 22, 1921. Serial No. 524,234.

To all whom it may concern:

Be it known that I, LESTER C. HART, a citizen of the United States, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have made a new and useful Invention in Expulsion Fuse Boxes, of which the following is a specification.

The invention relates to expulsion fuse boxes. It has for its main object the provision of an improved form of fuse box construction in which provision is made to guard the box and fittings from destruction regardless of the excess of current causing the vaporization of the blow-out fuse. The ordinary fuse box is relatively safe against injury from the usual excesses of current causing the fuse to blow, but with excessively high currents the expansive force of the gases generated in the box is sufficient to shatter it completely, and present invention is designed to safeguard the box under such unusual conditions. Certain embodiments of the invention are shown in the accompanying drawings wherein:

Figures 1 and 2 are vertical sections through the box taken at right angles to each other. Fig. 3 is a detail section through the fuse tube and associated parts, and Fig. 4 is a section through a modified construction.

Referring to the drawings, 1 is one side of the box, 3 and 4 the top and bottom and 5 the door, one of the hinges 6 of which is shown in Fig. 2. Insulating members 7 and 8 extending into the box carry the lead terminals 9 and 10 which terminals are connected respectively at 11 and 12 to the switch members 13 and 14. These members are preferably of the type shown in Fig. 2 and comprise the leaf members and the opposing spring pressed pear-shaped member adapted to receive between them the leaf of the other switch members. The other switch members 15 and 16 are integral with the metal collars 17 and 18, carried by the fuse tube 19 which is composed of suitable insulating composition.

The collar 17 carries the metal plug 20 provided with the binding screw 21 (Fig. 3), while the collar 18 is provided at its lower end with the enlarged part 22, in the outer side of which is threaded the binding screw 23. The fuse wire 24 is clamped at its upper and lower ends respectively by the binding screws 21 and 23. A rounded lug 25 is provided on the part 22 serving as an arcing tip to relieve the binding screw from burning when the fuse blows. An insulating sleeve 26 surrounds the collar 18 where it passes through the bottom of the box. The collars 17 and 18 are provided with pairs of lugs 27 and 28 adapted to be engaged by the brackets 29 and 30 carried by the panel 31 of insulating material carried by the door or cover 5.

The lower end of the fuse tube is preferably protected by the cap 32 of fiber or cartridge paper which fits over the part 22 tightly enough to be held by friction from accidental displacement. This cap not only acts as a protection for the metal parts at the lower end of the fuse through which current is passing, but also serves to indicate whether the fuse is still in service, since in case of a blow-out of the fuse, the cap is blown away.

In case excessive current is applied through the box, such as would ordinarily destroy it because of the application of the explosive force inside the box, the force of the explosion will, in my construction, be vented to the outside of the box through the lower open end of the fuse tube and the shattering of the box is avoided. At the same time the cap 32 is blown off so that a casual inspection will indicate the condition of the fuse. The mounting of the fuse tube removably upon the hooks on the door and the use of the switch connections which are broken on opening the door, make the parts convenient of access for replacement or repair.

Fig. 4 illustrates a modified construction at the lower end of the fuse tube 33 in which the fuse wire 34 instead of being secured to a binding screw carried by the lower end of the collar as in the other construction, extends laterally beneath a binding nut 35 upon the lower end of the threaded rod 36. This rod extends through the shelf 37 forming part of the door 38, and has at its upper end a second binding nut 39. A connecting wire 41 extends from beneath this nut 39 up to the binding screw 42. Current is transmitted to the collar 43, which carries a switch arm as in the other construction, through the bracket arm 44. The end of the tube and "live" parts are protected by a blow-off cap 44 of insulating material whose upper edge frictionally engages the

flange 45 which is made in two pieces, one part being secured to the shelf 37 and the other to the bottom 4 of the box.

What I claim is:

1. In combination, a fuse box, a fuse tube in the box with one end open and extending outside the box, a fuse wire in the tube extending through the open end of the tube to the outside of the box, and a closure cap surrounding the open end and adapted to be blown off when a blow-out of the fuse occurs.

2. In combination, a fuse box, a fuse tube in the box with one end open and extending outside the box, a fuse wire in the tube extending through the open end of the tube to the outside of the box, a pair of leads extending into the box, connections therefrom to the ends of the fuse wire, and a protecting cap held releasably in position around the lower end of the tube and the fuse wire leading from such end.

3. In combination, a fuse box, a fuse tube in the box with one end open and extending outside the box, a fuse wire in the tube extending through the open end of the tube to the outside of the box, a pair of leads extending into the box, switch members in the box to which the leads are connected, other co-operating switch members carried by the fuse tube, a door for the box on which the fuse tube is supported, and connections from the ends of the fuse wire to the switch members carried by the fuse tube.

4. In combination, a fuse box, a fuse tube in the box with one end open and extending outside the box, a fuse wire in the tube extending through the open end of the tube to the outside of the box, a pair of leads extending into the box, switch members in the box to which the leads are connected, other co-operating switch members carried by the fuse tube, a door for the box on which the fuse tube is supported removably and connections from the ends of the fuse wire to the switch members carried by the fuse tube.

In testimony whereof, I have hereunto subscribed my name this 19th day of December, 1921.

LESTER C. HART.

Witnesses:
M. EPSTEIN,
W. STACK.