

No. 819,657.

PATENTED MAY 1, 1906.

H. HUBBELL.
CARTRIDGE FUSE AND FUSE BLOCK.

APPLICATION FILED OCT. 29, 1904.

Fig. 1.

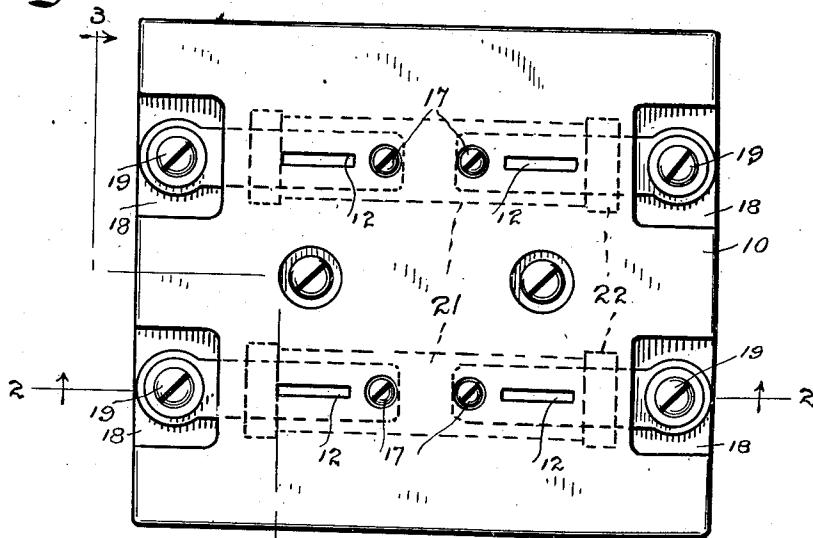


Fig. 2.

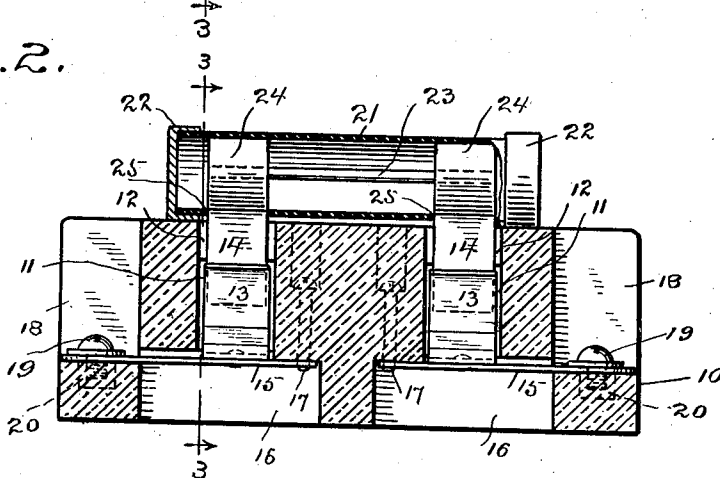
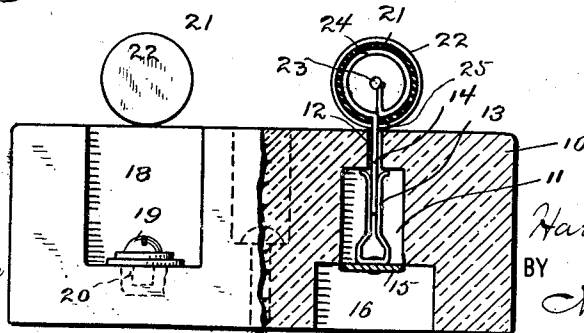


Fig. 3.



WITNESSES:

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CARTRIDGE-FUSE AND FUSE-BLOCK.

No. 819,657.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed October 29, 1904. Serial No. 230,482.

To all whom it may concern:

Be it known that I, HARVEY HUBBELL, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented a new and useful Cartridge-Fuse and Fuse-Block, of which the following is a specification.

My invention has for its object to provide a cartridge-fuse and fuse-block adapted for use in connection with either light or heavy electrical currents and especially adapted for use where heavy currents are used, which shall be so constructed as to eliminate the danger of exposed terminals, in which the possibility of arcing or sparking in making the contacts is wholly done away with, and in which the possibility of making a direct contact between the terminals should a fuse blow out shall be done away with.

It is of course well understood that with cartridge-fuses and fuse-blocks as ordinarily constructed the terminals of the fuse-blocks are exposed, which is a source of constant danger in making connections, and, in fact, at all times, and, furthermore, that it is a frequent custom when fuses blow out to make a direct connection between the terminals by wrapping the terminals with wire or any suitable conductor which may carry a much heavier current than is needed or desired, and thus become a source of grave danger. In order to overcome these objections, I have devised a cartridge-fuse and fuse-block so constructed that in order to make connection between the contacts of the fuse and the terminals of the fuse-block the contacts must be passed through contracted insulating-passages before they can engage the terminals which are inclosed—*i. e.*, concealed—in insulating-chambers in the block into which the passages lead, thereby making both the fuse and the fuse-block safe to handle in making connections and under all the ordinary and even extraordinary conditions of use rendering arcing or sparking impossible and making it practically impossible to make direct connection between the terminals of the block should the fuse blow out.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of my novel fuse-block with the fuse removed; Fig. 2, a longitudinal section of the block with a fuse in place thereon on the line 2 2 in Fig. 1; and Fig. 3 is a section of a fuse-block and fuse in engagement therewith on

the line 3 3 in Fig. 1, a portion of the block and one fuse appearing in end elevation.

10 denotes the fuse-block, which is a solid block of insulating material, ordinarily porcelain. The essential feature of construction of the block is that it is provided with insulating-chambers 11, which receive and inclose the contacts, and with contracted insulating-passages 12, leading into said chambers from the top of the block.

13 denotes the terminals—in the present instance pairs of contact-springs—which are adapted to be engaged by contact-plates 14, which extend from a cartridge-fuse, as will be more fully explained. The terminals are secured to plates 15, which are secured in recesses 16 in the under side of the block by means of screws 17, which are deeply countersunk into the top of the block. The free ends of plates 15 extend from recesses 16 into contiguous recesses 18 in the ends of the block and carry binding-screws 19, the lower ends of which are shown as extending into recesses 20 below recesses 18. The electrical connections (not shown) are connected to plates 15 by means of the binding-screws.

The cartridge-fuse, as well as the block, is of entirely novel construction. It comprises a tube or cartridge made of any suitable insulating material, as vulcanized fiber or paper, caps 22 at the ends thereof, a fuse 23, and contact-plates 14, to which the ends of the fuse are connected and which extend from the cartridge and are adapted to be passed through the contracted insulating-passages and into engagement with the terminals in the insulating-chambers. The contact-plates are preferably attached to the cartridge and connected to the fuse in the manner illustrated in the drawings. The cartridge ends of the contact-plates are shown as provided with coils 24, which just fill the interior of the cartridge into which they are forced. The contact-plates proper at their intersection with the coils lie in slots 25 in the ends of the cartridge, in which they fit tightly, so that the contact-plates and coils are thus firmly secured in place. Having driven the coils and the contact-plates into place in the ends of the cartridge, the caps are driven over the ends of the cartridge, which they fit closely and close. The interior of the cartridge may or may not be filled with plaster-of-paris or any suitable filling compound, as preferred.

The operation of my novel fuse and fuse-block will be readily understood from the drawings, differing from the operation of ordinary fuse-blocks in that the cartridge-fuse is provided with projecting contact-plates, which must be passed through contracted insulating-passages before they can engage the concealed terminals, the gist of the invention so far as the block is concerned lying in the fact that the contacts are wholly inclosed in the insulating-chambers and are concealed from view.

Having thus described my invention, I claim—

1. The combination with a fuse-block provided with insulating-chambers and contracted insulating-passages leading into said chambers, plates secured to said block and terminals carried by said plates and extending into the insulating-chambers, of a cartridge-fuse block having contact-plates extending therefrom which are adapted to be passed through the contracted insulating-passages and into engagement with the terminals in the insulating-chambers.

2. A fuse-block provided with insulating-chambers, contracted insulating-passages leading into said chambers, plates secured to said block, and terminals carried by said plates and extending into the insulating-chambers and binding-screws for the attachment of electrical connections.

3. A fuse-block having insulating-chambers and contracted insulating-passages leading into said chambers, recesses in the under side communicating with the chambers, con-

tiguous recesses in the ends, terminals in the insulating-chambers and plates in said recesses by which the terminals are carried.

4. A fuse-block having insulating-chambers and contracted insulating-passages leading into said chambers, recesses in the under side communicating with the chambers, contiguous recesses in the ends, terminals in the insulating-chambers, plates secured in the under side recesses to which the terminals are secured and binding-screws in the end recesses engaging the plates.

5. A fuse of the character described comprising a cartridge made of insulating material, a fuse within the cartridge and contact-plates extending from the cartridge and which are provided with coils closely fitting within the cartridge by which they are retained in place and to which the ends of the fuse are secured.

6. A fuse of the character described comprising a cartridge made of insulating material and having slots in its ends, a fuse within the cartridge, contact-plates which extend through the slots and project from the cartridge and are provided within the cartridge with coils which closely fit the interior thereof and to which the ends of the fuse are secured and caps which close the ends of the cartridge.

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

HARVEY HUBBELL.

Witnesses:

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S. W. ATHERTON.