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C. E. LOCKWOOD & G. A. LUTZ.

THERMAL CUT-OUT.

APPLICATION FILED OCT. 28, 1903.

Fig. 1.

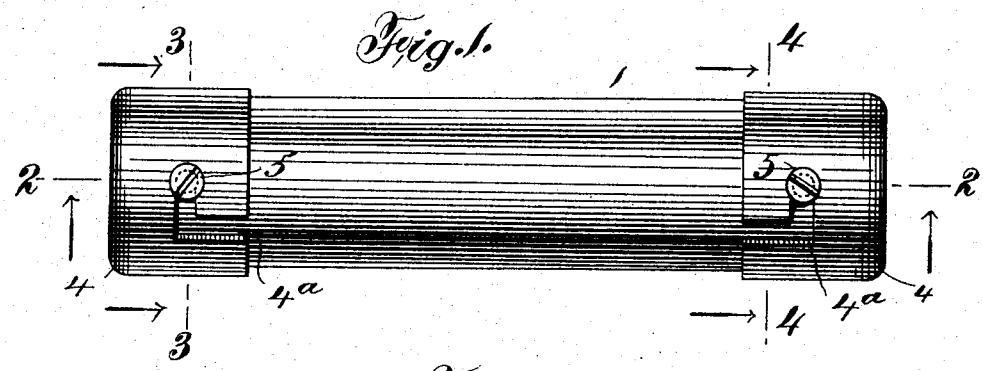


Fig. 2

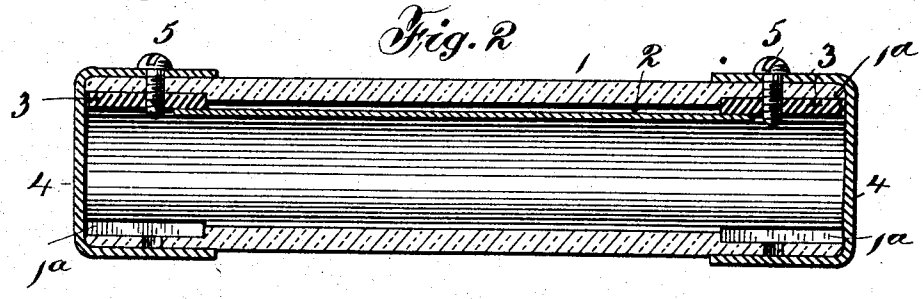


Fig. 3.

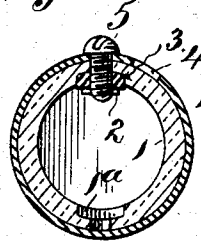


Fig. 6.

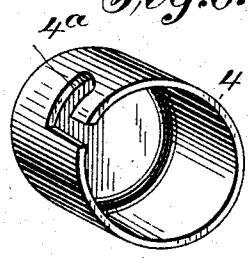
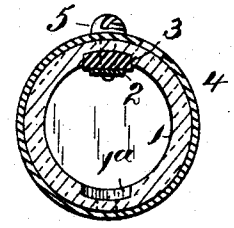


Fig. 4.



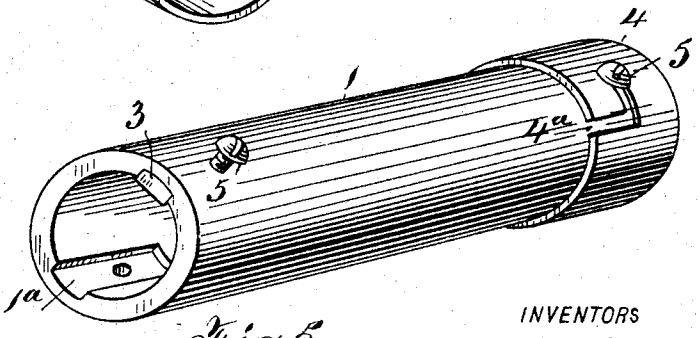


Fig. 5.

WITNESSES:

W. Benjamin

M. Hollingshead.

INVENTORS

C. E. Lockwood & G. A. Lutz.

BY

F. F. Bourne

Their ATTORNEY

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UNITED STATES PATENT OFFICE.

CHARLES E. LOCKWOOD AND GEORGE A. LUTZ, OF NEW YORK, N. Y.

THERMAL CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 782,038, dated February 7, 1905.

Application filed October 28, 1903. Serial No. 178,822.

To all whom it may concern:

Be it known that we, CHARLES E. LOCKWOOD, residing in the borough of Manhattan, and GEORGE A. LUTZ, residing in the borough of Brooklyn, New York city, State of New York, citizens of the United States, have invented certain new and useful Improvements in Thermal Cut-Outs, of which the following is a specification.

Our invention relates to improvements in thermal cut-outs and the like commonly used in electrical circuits, and has for its object to provide a cut-out in which the fuse wire or strip will be thoroughly insulated and can be readily replaced after being burned out, so that the main parts of the cut-out can be continued in use by replacing the fuse-wire.

Our invention comprises an insulating casing or tube having caps or closures at opposite ends and a fuse-wire or strip provided with metal blocks removably held within the casing and electrically connected with the caps or closures, whereby when the fuse-wire is burned out one or more of the caps can be removed, a new fuse-wire inserted in the casing, and the closures replaced for continued use.

The invention also comprises the novel details of improvement that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a side view of a cut-out embodying our invention. Fig. 2 is a longitudinal section thereof on the line 2 2 in Fig. 1. Fig. 3 is a cross-section on the line 3 3 in Fig. 1. Fig. 4 is a cross-section on the line 4 4 in Fig. 1. Fig. 5 is a perspective view of the cut-out, one of the caps being removed; and Fig. 6 is a perspective view of a cap.

Similar numerals of reference indicate corresponding parts in the several views.

In the drawings the numeral 1 indicates a casing or tube preferably made of or lined with insulating material, a suitable material for the purpose being porcelain.

At 2 is indicated a fuse-wire or strip of well-known material, which at its ends is secured, as by solder, to metal pieces or blocks 3, of brass or other suitable conducting material. As shown, the inner wall of casing or tube 1 at or near its ends is provided with recesses 1^a, in which the blocks 3 fit. The walls of such recesses serve to keep the blocks in proper positions within the casing.

At 4 are indicated caps or closures, shown fitting over and closing the open ends of the casing or tube 1, and at 5 are indicated screws which pass through the flanges of the caps 4 of the casing or tube 1 and are screwed into the blocks 3, whereby the blocks and caps are secured in position upon the casing or tube 1 and whereby also electrical connection is established between the blocks 3 and the caps 4. In order that the blocks 3 and fuse-wire can be properly held within casing or tube 1 while the caps are being applied thereto, we provide the caps with slots 4^a, so that while the screws are connected with the casing and blocks 3 the caps can be slid to place under the heads of the screws and the screws then fastened down firmly to clamp the caps in place. The slots 4^a are preferably made of angular form or like bayonet-joints, as shown, to assist in keeping the caps from sliding off the casing.

In assembling the parts of the cut-out the fuse-wire 2, with its attached blocks 3, is placed in position within the casing and the screws 5 applied to the blocks, but not screwed fully in, and then the caps are slid over the ends of the casing, the slots 4^a passing along the screws, and when the bayonet-slots are used the caps are rotated, as indicated in Fig. 1, and then the screws are finally screwed in to firmly clamp the blocks 3 and the caps upon the casing. When the parts are thus assembled, the fuse-wire will be fully protected by the insulating casing or tube, and the caps 4 may be inserted in sockets or other terminals in well-known manner. When the fuse-wire burns out, the same may be readily replaced by merely removing the screws 5, taking off the caps 4, removing blocks 3, replacing a new wire having blocks attached, and applying the screws and caps 4, as before explained. Thus the casing or tube 1, the screws, and the covers are all retained for continued use, and the only requirement is to replace the fuse-

wire and its blocks, whereby a saving in the cost of replacing cut-outs is effected over those commonly used and thrown away when the fuse-wire burns out.

Various changes may be made in the details of construction and arrangements shown without departing from the spirit of our invention. For instance, the blocks 3 can be held in the casing by screws or other means independent of the caps, and several fuse-wires can be so held in the casing at the same time and the screws 5 can connect the caps with the blocks of either fuse-wire, and when such fuse-wire burns out screws can be connected with the blocks of another fuse-wire, and so on without replacing fuse-wires until all of such wires in a plug have been burned out. In such case well-known insulating material, such as asbestos, may be filled in the casing 1 to insulate the various fuse-wires from each other and to protect those not in circuit from injury by the burning out of another. In the drawings the casing 1 is shown provided with two recesses 1^a at each end for receiving the blocks of two fuse-wires; but the number of recesses may be increased or diminished, as may be thought desirable.

Having now described our invention, what we claim is—

1. A thermal cut-out comprising a casing, a fuse wire or strip therein, caps fitting over the ends of the casing and provided with slots opening through the inner edges of the caps, and screws passing through said slots and the casing and connected with the fuse wire or strip, substantially as described.

2. A thermal cut-out comprising a casing, a fuse wire or strip therein, caps fitting over the ends of the casing and provided with bayonet-slots opening through the inner edges of the caps, and screws passing through said slots and the casing and connected with the fuse wire or strip, substantially as described.

3. A thermal cut-out comprising an insulating-casing, a fuse wire or strip provided with blocks, caps to close the ends of the casing and provided with slots opening through the edges of the caps, and screws passing through the slots in the caps and casing and entering the blocks making electrical connection between the blocks and caps, substantially as described.

4. A thermal cut-out comprising an insulating-casing provided with recesses in its inner wall, a fuse-strip provided with blocks located in said recesses, means for holding said blocks in said recesses, and caps closing the ends of the casing, substantially as described.

5. A fuse-plug comprising an insulating casing open at both ends and provided with recesses near opposite ends, blocks fitting in said recesses, a fuse-wire connecting said blocks, caps closing the ends of the casing and provided with slots opening through the edges of the caps, and screws for holding the blocks and caps in position and for establishing electrical connection between them, said screws passing through the slots in the caps and the casing and entering said blocks, substantially as described.

CHARLES E. LOCKWOOD.
GEORGE A. LUTZ.

Witnesses:
H. B. BRADBURY,
T. F. BOURNE.