T. E. MURRAY & A. V. A. McHARG.

CUT-OUT SWITCH.

APPLICATION FILED JAN. 10, 1917.

**1,237,370.**

Patented Aug. 21, 1917.

2 SHEETS—SHEET 1.

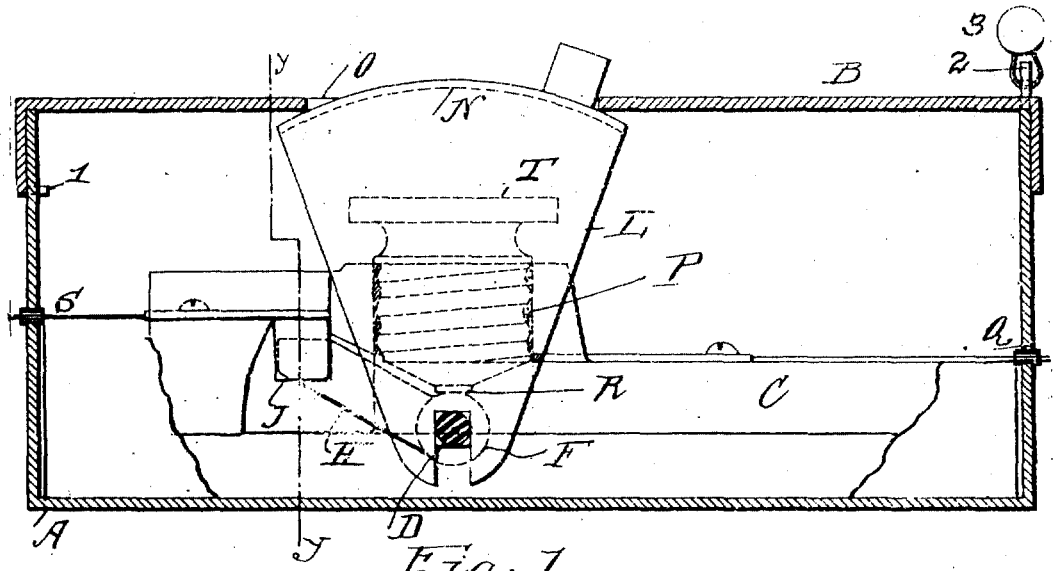


Fig. 1

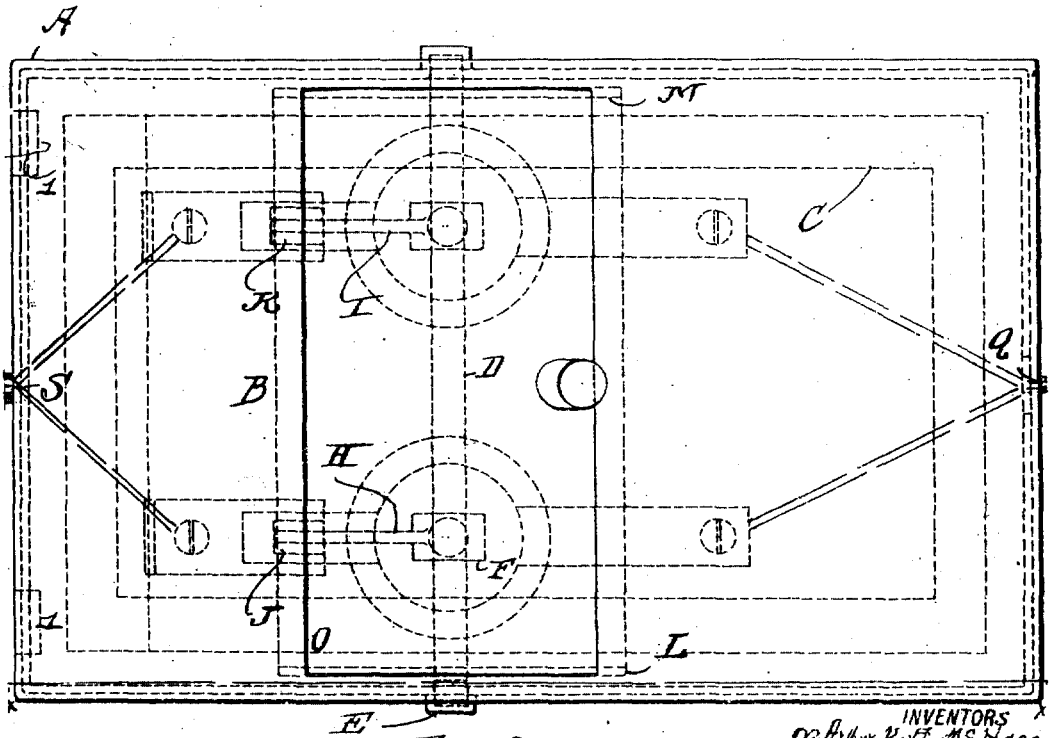


Fig. 2.

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Arthur V. A. McHarg
Thomas E. Murray
BY Carl Benjamin
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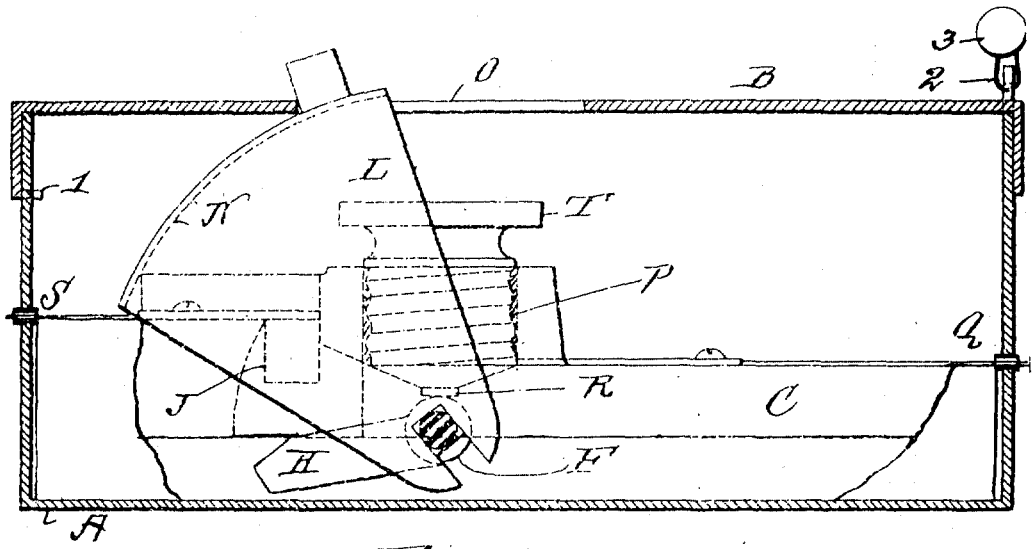


Fig. 3.

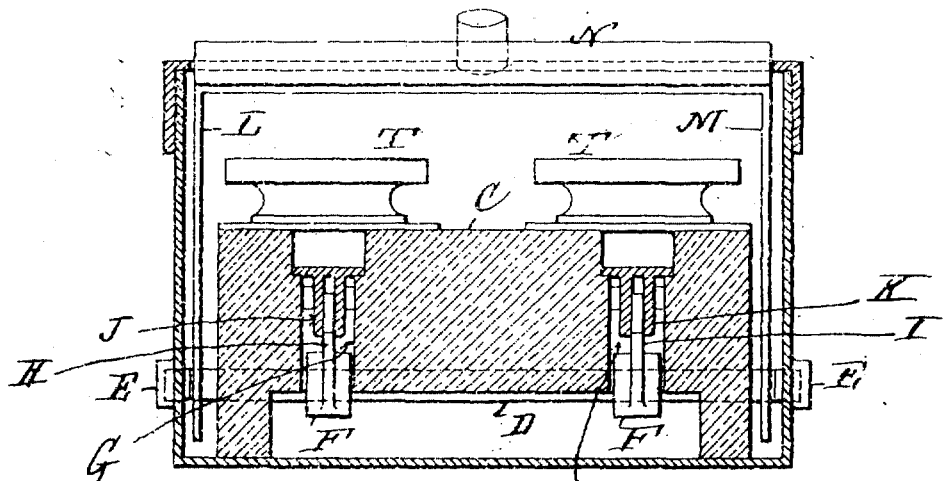


Fig. 4.

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THOMAS E. MURRAY AND ARTHUR V. A. McHARG, OF NEW YORK, N. Y.; SAID McHARG ASSIGNOR TO SAID MURRAY.

## CUT-OUT SWITCH.

1,237,370. Specification of Letters Patent. Patented Aug. 21, 1917.

Application filed January 10, 1917. Serial No. 141,555.

*To all whom it may concern:*

Be it known that we, THOMAS E. MURRAY and ARTHUR V. A. McHARG, citizens of the United States, residing at New York, in the county of New York and State of New York, have invented a certain new and useful Improvement in Cut-Out Switches, of which the following is a specification.

The invention is a cut-out switch, so constructed that an aperture in the wall of the casing, whereby access may be had to the parts within said casing, is closed by a swinging shield when said switch is closed, and opened when said switch is opened. In this way, the hand of the operator, when introduced into the casing to insert or remove fuses, or for other purposes, is protected from chance contact with live parts, and access to the interior of the box is barred so long as the switch arm is in contact with a live terminal.

In the accompanying drawings—

Figure 1 is a section of our switch on the line *x*, *x* of Fig. 2, showing the shield or door and the contacts in closed position, one side of the base being broken away to show internal construction. Fig. 2 is a plan view. Fig. 3 is a section similar to Fig. 1, showing the shield or door and the contacts in open position. Fig. 4 is a cross section on the line *y*, *y* of Fig. 1.

Similar letters and numbers of reference indicate like parts.

A is a metal box inclosing the switch mechanism. B is the cover, flanged to receive the upper edge of the box and having projections 1 entering an end wall of said box. A projection 2 on the opposite end wall extends through an opening in said cover, and above said cover receives the shackle of a seal fastening 3. The cover is thus locked in place, and cannot be removed without destruction or mutilation of the seal fastening.

C is a base block, preferably of porcelain, disposed within the box. Extending transversely through the lower portion of said block is a fiber rock shaft D, the ends of which are journaled in the walls of box A, and covered by caps E secured to said walls. On shaft D are metal hubs F, received in recesses G in said block, and integral with said hubs are the switch levers H, I. Said levers coöperate with two downwardly extending pairs of spring contact clips J, K, carried by said block.

Within the box and on the shaft D are two sector-shaped arms L, M which carry the curved shield N. In the cover is an aperture O, which is closed by said shield when the levers H, I coöperate with contacts J, K, as shown in Fig. 1. When the shield N is moved to the position shown in Fig. 3, to permit access to the interior of the box, the shaft D is rocked so as to move the switch levers H, I out of the contact clips J, K. In suitable sockets in the base block are sleeve circuit terminals P which connect with the lead Q which passes through the end wall of the box. When fuse plugs T are inserted in said sockets, their threaded shells make contact with said sleeve terminals P, and the usual buttons R at the ends of said plugs make contact with the hubs F on rock shaft D. Hence when the switch levers H, I are closed, circuit is established through the fuses, levers and contacts to the opposite lead S which extends through the opposite wall of the box. At this time, access—as has been stated—cannot be got to the interior of the box, because the shield closes the aperture. On the other hand, movement of the shield to permit such access, breaks circuit at the switch. Hence the shield may be opened to allow of the fuse plugs being renewed, without danger of the operator's hand coming in contact with a live conductor. It is also impossible to obtain access to terminals for the purpose of stealing current.

We claim:

1. A box, having an aperture in its wall, a fixed contact and a rock shaft in said box, a curved shield within said box carried by said shaft and closing said aperture, a switch lever on said shaft coöperating with said contact; a fixed support within said box, and a fuse on said support and interposed in the switch circuit, whereby when said shield is moved to close said aperture, said switch is closed, and when said shield is moved to open said aperture to afford access to said fuse, said switch is opened.

2. A box, a cover therefor having an aperture, a fixed contact and a rock shaft in said box, sectors carried by said rock shaft, a curved shield within said box carried by said sectors and closing said aperture, a switch lever on said rock shaft coöperating with said contact; a fixed support within said box, and a fuse on said support and in-

terposed in the switch circuit, whereby when said shield is moved to close said aperture, said switch is closed, and when said shield is moved to open said aperture to afford access to said fuse, said switch is opened.

3. A box, having an aperture in its wall, a fixed contact and a rock shaft in said box, a curved shield within said box carried by said shaft and closing said aperture, a switch lever on said shaft coöperating with said contact, a base block in said box having a socket, and terminals of the switch circuit in said socket, and a fuse plug in said socket and coöperating with said terminals; whereby when said shield is moved to close said aperture, said switch is closed, and when said shield is moved to open said aperture to afford access to said fuse plug, said switch is opened.

4. A box having a flat wall, and an aperture therein, a fixed contact and a rock shaft in said box, an arc-shaped shield within said box and carried by said shaft, and a switch lever on said shaft coöperating with said contact, the said shield being of a transverse width to close said aperture and to extend into the box beyond the opposing edges of said aperture when in closed position; whereby when said shield is moved to close said aperture, said switch is closed and access to the interior of the box prevented by the edge portions of said shield overlapping the edges of said aperture, and when said shield is moved to open said aperture, said switch is opened.

In testimony whereof we have affixed our signatures in presence of two witnesses.

THOMAS E. MURRAY.
ARTHUR V. A. McHARG.

Witnesses:
GERTRUDE T. PORTER,
MAY T. McGARRY.