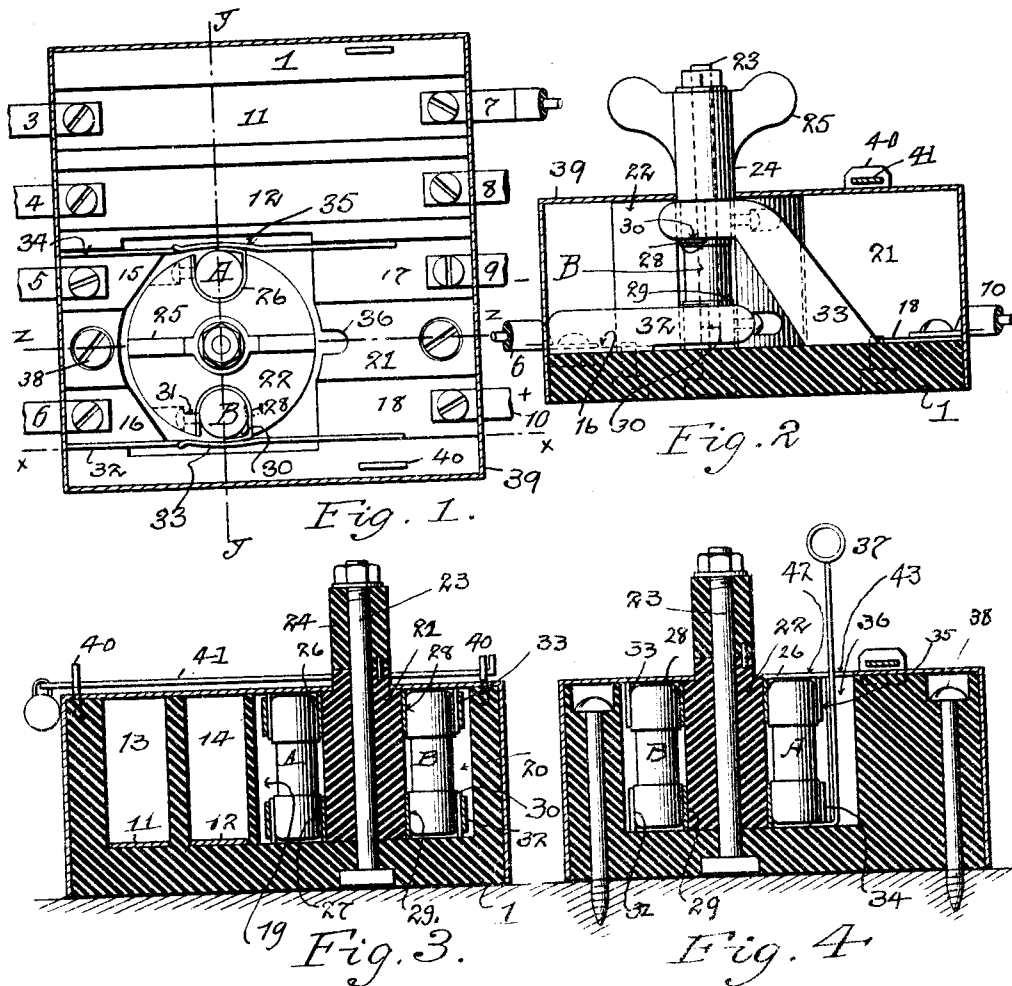


A. V. A. McHARG.
FUSE SWITCH.
APPLICATION FILED JUNE 27, 1912.

Patented Dec. 31, 1912.

1,048,847.



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UNITED STATES PATENT OFFICE.

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FUSE-SWITCH.

1,048,847.

Specification of Letters Patent.

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Application filed June 27, 1912. Serial No. 706,165.

To all whom it may concern:

Be it known that I, ARTHUR V. A. McHARG, a citizen 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 Fuse-Switches, of which the following is a specification.

The invention is a fuse carrier, made movable so as to operate as a switch, and in which the fuse, or fuses, may be easily inserted or removed. The construction is such that when the carrier is placed in position for the removal or insertion of a fuse, circuit is broken between the circuit terminals on the base, which receives the carrier, and the contacts on the carrier, which receive the fuse, and also such that at such time access cannot be had to the circuit connections in said base.

My invention is hereinafter disclosed in a preferred embodiment, wherein a cylindrical carrier or switch block, in which two fuses are placed, is rotatable in the base, and operates to open and close both branches of the circuit.

In the accompanying drawings—Figure 1 is a plan view of my fuse switch. Fig. 2 is a section on the line *x, x* of Fig. 1. Fig. 3 is a section on the line *y, y* of Fig. 1, and Fig. 4 is a section on the line *z, z* of Fig. 1, with the switch turned ninety degrees from the position shown in Fig. 3. In Fig. 4 a fuse extracting hook is shown in place.

Similar letters and numbers of reference indicate like parts.

My switch is here shown applied to a meter connection block 1, of insulating material, on which are the four meter terminals 3, 4, 5, 6, the load terminals 7, 8, and the service terminals 9, 10. The meter terminals 3 and 4 are respectively connected to the load terminals 7, 8, by conducting bars 11, 12 seated in channels 13, 14 in said block. The meter terminals 5, 6 are connected to bars 15, 16, and the service terminals are connected to bars 17, 18. The bars 15, 16 are separated from one another and are seated in a channel 19, and the bars 17, 18 are similarly separated and seated in a channel 20. The function of the fuse switch is to make and break circuit between bars 15 and 17, and also between bars 16 and 18, and on making circuit to interpose a fuse between the members of each of said pairs

of bars, and hence in both branches of said circuit.

The partition 21 between channels 19, 20, which is made wider than the other partitions, is cut away to permit of the introduction of the cylindrical switch block or fuse carrier 22 of insulating material. Said block is rotatable on the fixed vertical rod 23, which is secured in the base and at its upper end by a nut above the sleeve 24 on block 22. On said sleeve are ears 25, for convenience in rotating the block. In the periphery of block 22 and parallel to its central axis are formed two grooves, for the reception of the cartridge fuses A, B. In each groove are two spring contact clips 26, 27 and 28, 29, which are separated from one another. The metal end caps of fuse A are received in clips 26, 27, and the metal end caps of fuse B are received in clips 28, 29. Each clip has a projecting portion 30 on one of its arms, which extends outside of the fuse cap. The clips may be secured in place by screws 31 in countersinks in block 22. Preferably integral with bar 16 in channel 20 is a spring contact 32, and integral with bar 18 in said channel is a spring contact 33 which is disposed above contact 32. Connected to bars 15, 17 in channel 19 are similar contacts 34, 35. The contacts 32, 33, 34, 35, extend in front of the grooves in the switch block 22, so that when said block is in the position shown in Fig. 1, the upper contacts 33, 35 meet the projections 30 on clips 26 and 28, and the lower contacts 32, 34 meet the projections 30 on clips 27, 29. Circuit is then established from positive service terminal 10, to bar 18, contact 33, clip 28, fuse B, clip 29, contact 32, to bar 16, meter terminal 6, and from meter (not shown) to meter terminal 5, bar 15, contact 34, clip 27, fuse A, clip 26, contact 35, bar 17, and negative service terminal 9. In order to break circuit, switch block 22 is rotated until the projections 30 leave the contacts 32, 33, 34, 35, which contacts then meet the insulating body of said block.

The base 1 may be secured to any suitable support by countersunk screws 38, and is provided with a metal box-shaped cover 39. In said cover are openings for the standards 40 which receive a locking bar 41, and for the sleeve and rod of block 22, and an opening 42 which registers with either groove in the periphery of block 22, when said block

is suitably turned into position. The arrangement is, however, such that when said block is so turned, circuit is broken between the circuit terminals on the base and the contacts on the block, so that the fuses may be inserted into the block or removed therefrom, through the opening 42, without access being given to the circuit connections in the base. For the convenient removal of the fuses from the block, I provide a groove 36 in the end face of partition 21, and a corresponding opening 43* in the cover, which opening 43 is here a notch in the side of opening 42. When the block is turned to permit of the removal of a fuse through opening 42, said fuse comes opposite groove 36, through which a hooked wire 37 is inserted, so as to engage the lower end of the fuse and lift said fuse from its block.

I claim:

1. A base, having two parallel channels, a pair of circuit terminals in each channel, a rotary cylindrical switch block seated in an opening in the partition between said channels and entering both channels and having two diametrically opposite grooves in its periphery parallel to its axis of rotation, two contact clips in each groove, and fuses having their terminals in said grooves: the said contact clips cooperating with said circuit terminals.

2. A casing, having an opening, circuit terminals in said casing, a fuse carrier in said casing having contacts cooperating with said circuit terminals: the said carrier being movable to a position in front of said opening to receive said fuse between its contacts, and simultaneously to break circuit between said contacts and said terminals.

3. A base, a switch block movably seated therein, a fuse in said block, contacts on said base cooperating with said fuse terminals, and a cover for the base having an opening for the removal or insertion of said fuse: whereby when said block is moved to bring said fuse in front of said opening, circuit shall be broken between said fuse terminals and said contacts.

4. A base, a rotary switch block seated

therein, a fuse in said block, contacts in said base cooperating with said fuse terminals, and a cover for the base having an opening for the removal or insertion of said fuse: whereby when said block is moved to bring said fuse in front of said opening, circuit shall be broken between said fuse terminals and said carrier.

5. A base, a rotary switch block seated therein, having a groove in its periphery parallel to its axis of rotation, two contact clips in said groove, each having a projection extending transversely to and in front of said groove, a fuse having its terminals in said clips, and circuit terminals on said block cooperating with said projections.

6. A rotary switch block, having a groove in its periphery parallel to its axis of rotation, a base having a socket receiving said block provided with a groove in its periphery registering with said block groove, two contact clips in said block groove, a fuse having its terminals in said clips, and circuit terminals on said block cooperating with said contact clips: the said block operating to bring said grooves into registry after breaking circuit through said fuse.

7. A rotary switch block, having a groove in its periphery parallel to its axis of rotation, a base having a socket receiving said block provided with a groove in its periphery registering with said block groove, two contact clips in said block groove, a fuse having its terminals in said clips, circuit terminals on said block cooperating with said contact clips, and a cover for said base having an opening registering with said block groove and said base groove: the said block operating to bring said grooves into registry and the block groove into registry with the cover opening after breaking circuit through said fuse.

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

ARTHUR V. A. McHARG.

Witnesses:

GERTRUDE T. PORTER,
MAY T. McGARRY.