T. E. MURRAY.

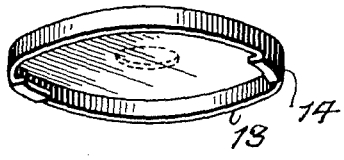
FUSE HOLDING DEVICE.

APPLICATION FILED JAN. 6, 1913.

1,060,617.

Patented May 6, 1913.

2 SHEETS—SHEET 1.



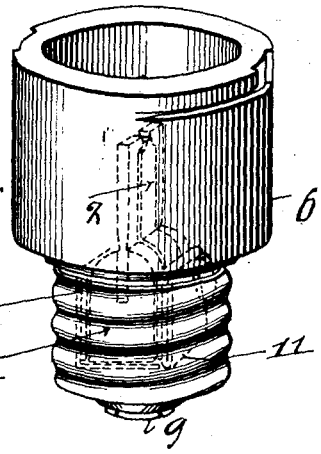


Fig. 1.

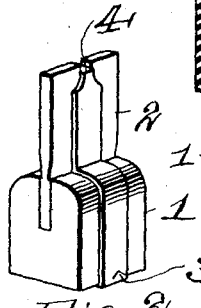


Fig. 2.

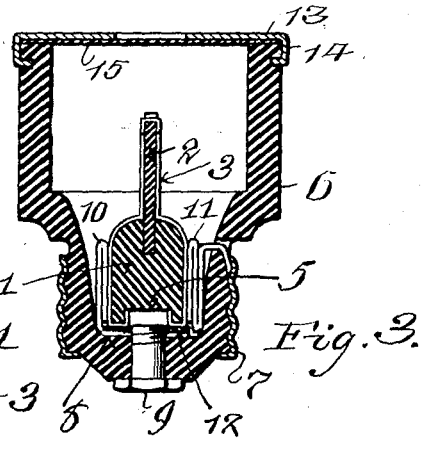


Fig. 3.

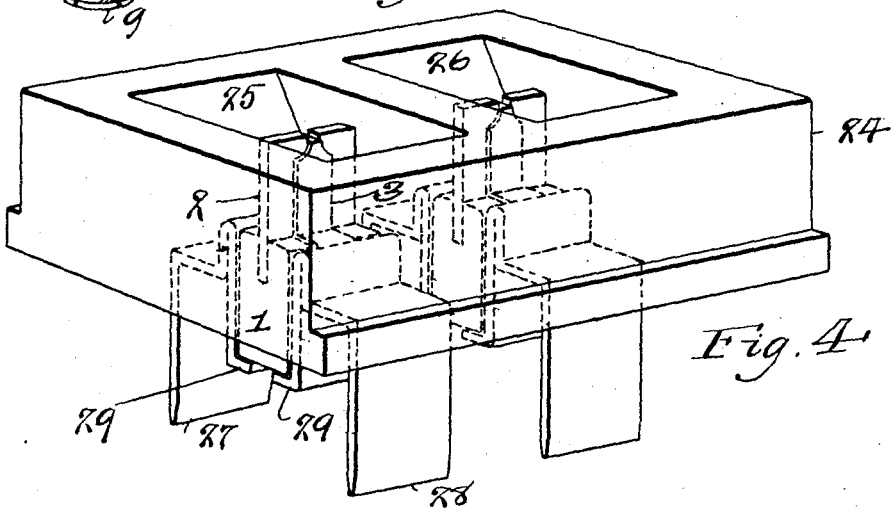


Fig. 4.

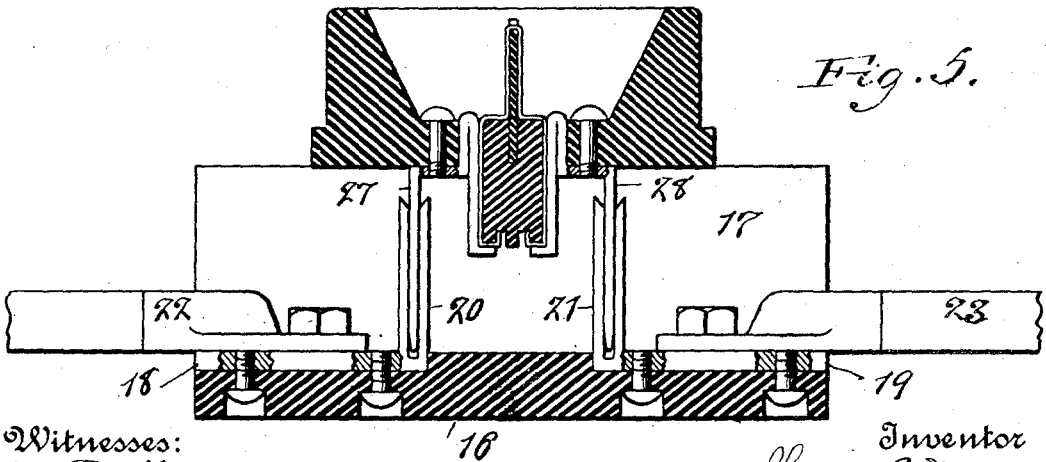


Fig. 5.

Witnesses:
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Alan Franklin

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Thomas E. Murray
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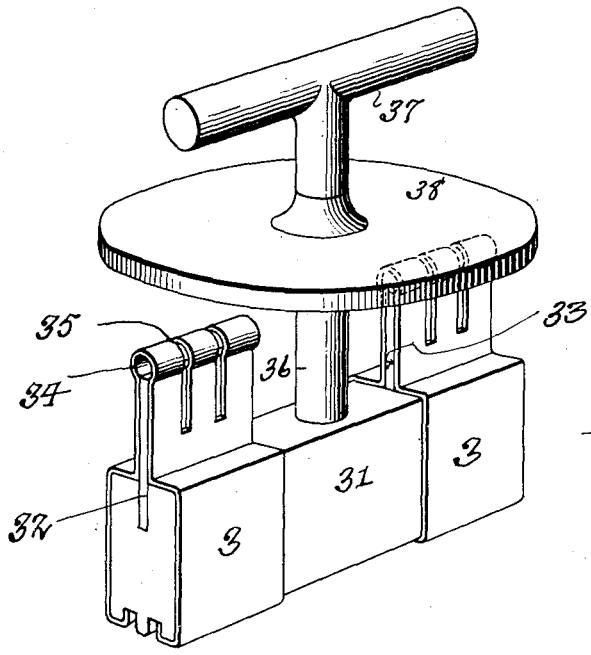

Fig. 7.

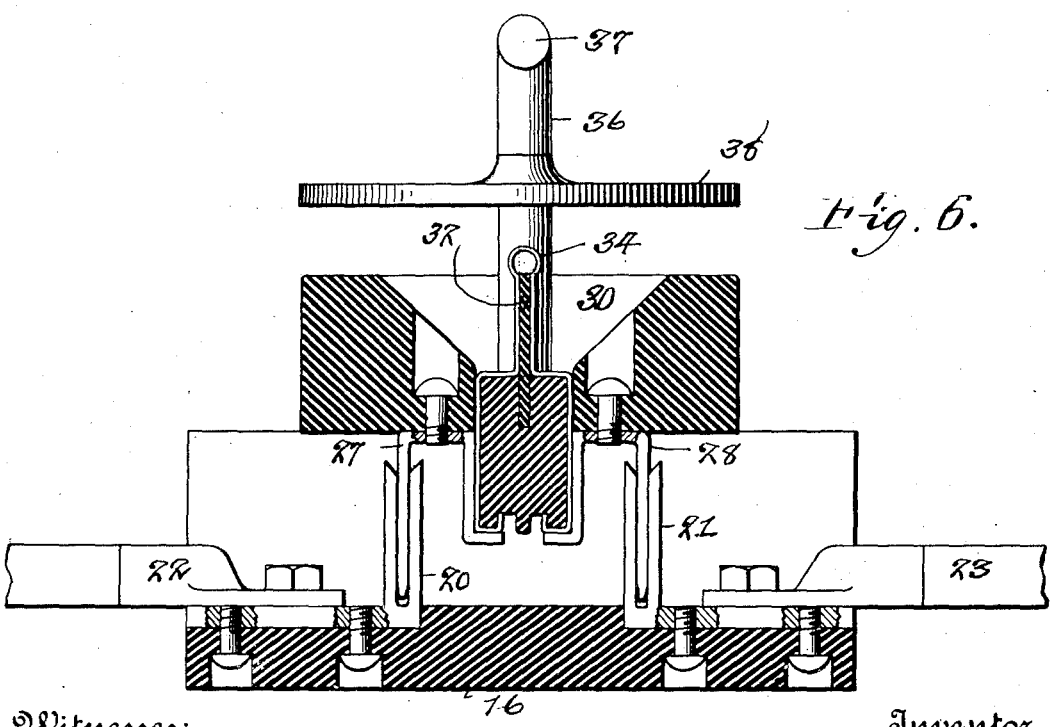

Fig. 6.

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UNITED STATES PATENT OFFICE.

THOMAS E. MURRAY, OF NEW YORK, N. Y.

FUSE-HOLDING DEVICE.

1,060,617. Specification of Letters Patent. Patented May 6, 1913.

Application filed January 6, 1913. Serial No. 740,366.

To all whom it may concern:

Be it known that I, THOMAS E. MURRAY, 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-Holding Devices, of which the following is a specification.

The invention is a fuse-holding device, so constructed as to permit the fuse strip and a support therefor to be removed independently of the plug, box or other holding means.

The invention consists in the construction of the support and the fuse strip mounted thereon, and in the means whereby said fuse strip is connected in circuit as hereinafter more particularly pointed out.

In the accompanying drawings—Figure 1 is a perspective view of the fuse-support and fuse arranged in a cylindrical screw plug, the cover of said plug being removed, and said support being shown in place in dotted lines. Fig. 2 is a perspective view of the fuse support and fuse strip thereon. Fig. 3 is a vertical cross section of the fuse plug of Fig. 1. Fig. 4 is a perspective view of the upper member of a cut-out box, carrying two fuse supports. Fig. 5 is a longitudinal vertical section of said cut-out box, showing said upper member in place. Fig. 6 is a similar view of a modified form of said cut-out box, and Fig. 7 shows in perspective two fuse strips on a common support, provided with a handle and shield. In Fig. 6 said support is shown in place in the cut-out box.

Similar numbers of reference indicate like parts.

1 is a block of insulating material, preferably rounded on its upper side, from which projects a plate 2 of similar material. The block 1 and plate 2 form a support for the fuse strip 3. Said strip 3 preferably has a portion 4 of constricted area which is received in a notch in the upper edge of plate 2. The parts of the strip lie closely against the sides of the support, and are secured at their ends by bending said ends over the edges of a recess 5 in the bottom of block 1. The thickness of the partition plate 2 is preferably to be such as will permit the reaction of the fields caused by the current in the parts of fuse strip 3 to separate said parts after the blowing of the fuse has taken place at the constricted portion 4. The thickness of the block 1 is to be such as to afford a firm and solid abutment for the spring contacts between which said block is inserted, as hereinafter explained.

I may arrange this fuse support and fuse in circuit in various ways. In Fig. 1, I show it disposed in a cylindrical plug 6, having the usual threaded stem and metal envelop 7 thereon. Within the plug is a metal plate 8, which has a threaded opening, so that it may be secured to the bottom of the plug cavity by means of the screw 9, the lower headed end of which forms the usual center contact. One end of the plate is bent upwardly, and preferably doubled over to form one member 10 of a pair of spring contacts. The other member 11 of said pair of contacts, formed by doubling a plate twice on itself, is placed opposite member 10, and is connected through an opening in the plug wall to envelop 7. A disk 12 of insulating material is placed on the plate 8, and is held in place by the turned over ends of the contacts 10, 11. The fuse support is inserted between the contacts 10 and 11, so that said contacts respectively bear upon the parts of the fuse strip which lie against the opposite sides of block 1, thus bringing the fuse strip into the circuit between envelop 7 and screw 9.

The plug 6 may be provided with a flanged metal cover 13, having a central sight-opening, and projections 14, which projections, together with the notches and grooves on the upper edge of said plug, form a bayonet joint for the attachment of the cover to the plug. Between the cover and the upper edge of the plug, a disk 15 of transparent mica may be inserted.

In Figs. 4 and 5, I exhibit the arrangement of two fuse supports and fuses in a cut-out box. The base 16 of porcelain has two compartments formed in it by the partition 17. In each compartment are plates 18, 19, having upwardly turned double portions forming spring contact clips 20, 21. Circuit terminals, as 22, 23, are connected to said contact clips. The cover 24 has two openings 25, 26, which when said cover is in place on the base 16, register respectively with the compartments in said base. Said openings are contracted at their lower portions. To the bottom of the cover are secured downwardly depending contacts 27,

28, said contacts extending upward into said contracted openings and lying against the sides thereof and then being turned downwardly and extending below the cover to enter the compartments in the base, and then being turned inwardly to form ledges or shoulders 29. The construction in each opening 25, 26 is the same. When the cover is in place, the depending contact plates 27, 28 engage the clips 20, 21, as shown in Fig. 5. The fuse supports are inserted between the said contacts so as to rest on the ledges 29, the fuse strip being thus brought into circuit with the terminals 22, 23.

In Figs. 6 and 7, the construction of the base and contacts thereon is the same as in Fig. 5. In the cover there is a single long opening 30, contracted at its lower portion. Instead of two separate fuse supports, as in Figs. 4 and 5, I here employ a single bar support 31, having two upwardly extending partition plates 32, 33, each similar to partition plate 2. The fuse strips 3 here extend above the tops of the partitions 32, 33, where they have the form of open loops 34, with slots 35 in them. On the bar support 31 and between the fuse strips is secured a stem 36 which carries a handle 37, and a shield 38, of any suitable material. The partition in the base is suitably recessed to permit the support 31 to be seated therein. The object of the shield is to protect the hand of the user from chance shocks.

The form of my device shown in Figs. 1 and 3 is adapted for general use, that shown in Figs. 4 and 5 is for pairs of circuit conductors, and that shown in Figs. 6 and 7 for circumstances in which heavy currents are involved. It is to be noted that in all cases the fuse support and fuse are removable conjointly from the plug or cut-out box, and may be exposed to view, if desired. In case of blowing, these are the only parts needing renewal, everything else remaining in place. In the forms shown in Figs. 1, 3, 4, 5, each fuse has its own support, and is separately removed therewith. In the form shown in Figs. 6 and 7, the two fuses are simultaneously removed with their common support. As the cost of the fuse and support is relatively small as compared to that of the holder, the device is restorable after blowing to working condition much more cheaply than where it is necessary to replace the holder as well as the fuse support.

I claim:

1. A fuse carrier of insulating material, and a fuse strip secured thereon, the said carrier comprising a block having on one side a projecting plate, and the fuse strip being doubled over the outer edge of said plate and lying in contact with the opposite sides of said plate and said block.

2. A fuse carrier of insulating material, and a fuse strip secured thereon, the said carrier comprising a block having on one side a projecting plate, and the fuse strip being doubled over the outer edge of said plate and lying in contact with the opposite sides of said plate and said block: the thickness of said plate being such as will permit the reaction of the fields caused by the current in the parts of the fuse strip on its opposite sides to separate said parts on the blowing of said strip.

3. A fuse-holding device, comprising a block of insulating material having a projection of reduced thickness on one side and a recess on the opposite side, and a fuse strip doubled over the edge of said projection and having its ends entering said recess.

4. A fuse-holding device, comprising a support having an opening, contacts in said opening, a carrier of insulating material comprising a block having on one side a projecting plate, and a fuse strip secured on said carrier, doubled over the outer edge of said plate and lying in contact with the opposite sides of said plate and said block: the parts of the strip on the opposite sides of said block cooperating with said contacts.

5. A fuse-holding device, comprising a support having an opening, a pair of contacts on said support and extending below said opening and on opposite sides thereof and having inwardly turned flanges, a block of insulating material, and a fuse strip doubled over said block and secured thereto: the said contacts receiving and supporting said block on said flanges and coöperating with the parts of said strip on opposite sides of said block.

6. A fuse-holding device, comprising a support, having an opening, two pairs of contacts on said support, extending below said opening, and on opposite sides thereof and having inwardly turned flanges, a block of insulating material, two fuse strips doubled over said block and secured thereto, the said pairs of contacts receiving and supporting said block and respectively coöperating with the parts of the strips on opposite sides of said block, a stem on said block, a handle on said stem, and a shield on said stem interposed between said handle and said block.

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

THOMAS E. MURRAY.

Witnesses:

GERTRUDE T. PORTER,

MAY T. MCGARRY.