T. E. MURRAY.

SWITCH BOX.

APPLICATION FILED DEC. 22, 1914.

1,158,534. Patented Nov. 2, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

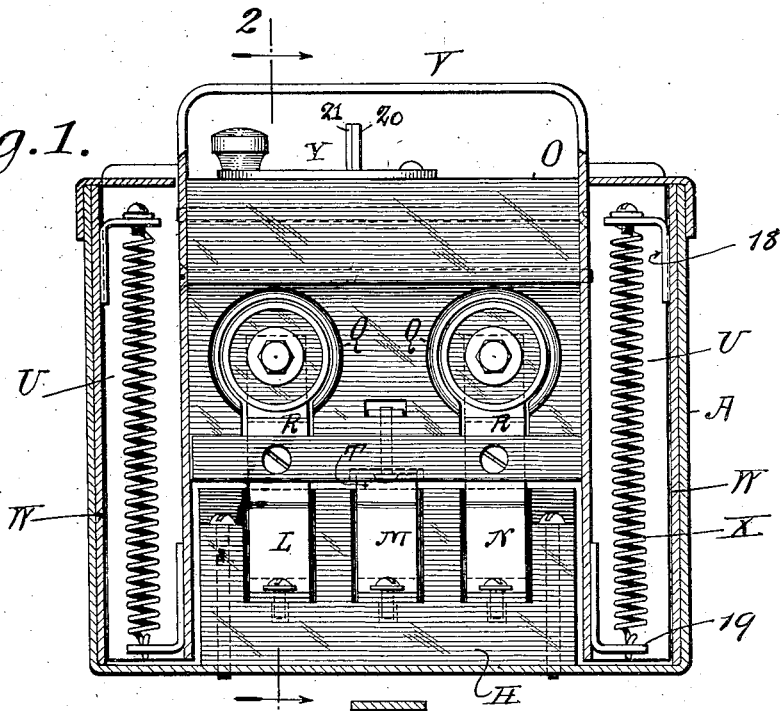
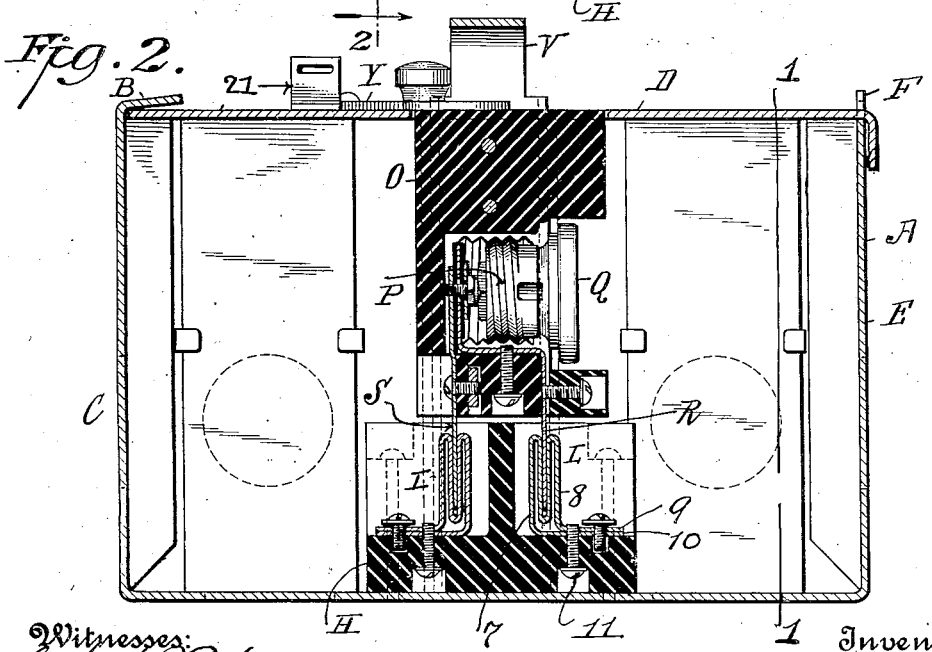


Fig. 2.



Witnesses:
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May T. McGarry

Inventor
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2 SHEETS—SHEET 2.

Fig. 3.

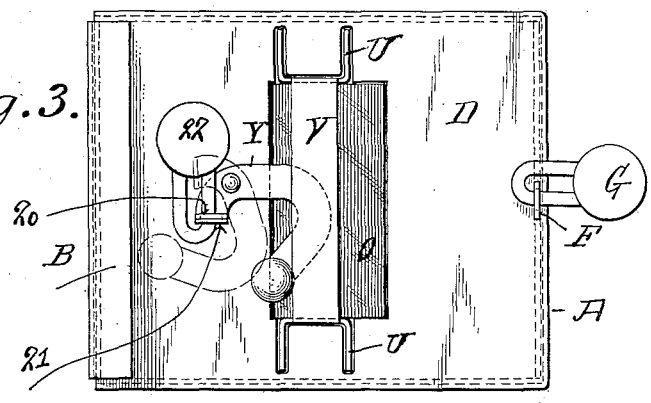


Fig. 4.

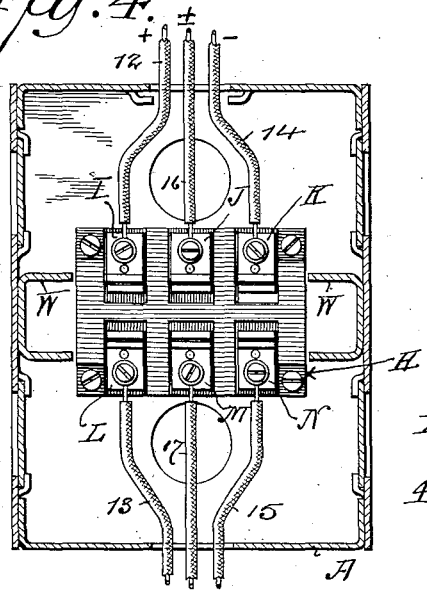
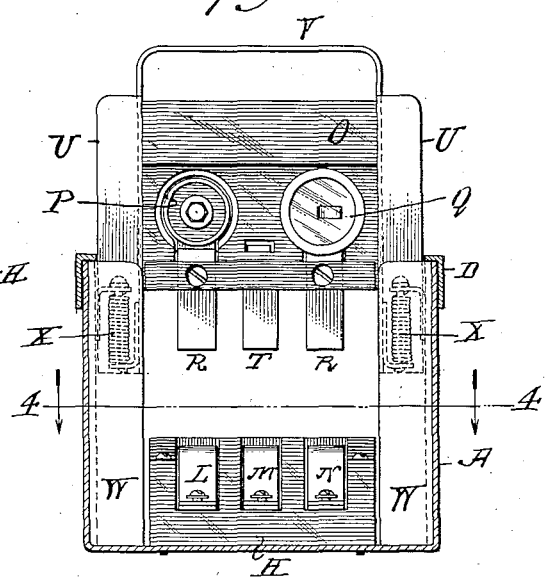


Fig. 5.



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UNITED STATES PA OFFICE.

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

SWITCH-BOX.

1,158,534. Specification of Letters Patent. Patented Nov. 2, 1915.

Application filed December 22, 1914. Serial No. 878,487.

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 Switch-Boxes, of which the following is a specification.

The invention relates to switch boxes, in which the movable switch member slides in a wall of said box, and consists in the construction whereby said member is held in coöperating circuit-closing position against resilient means, and in the combinations more particularly pointed out in the claims.

In the accompanying drawings—Figure 1 is a section of my switch box on the line 1, 1 of Fig. 2, showing the movable fuse plug carrier in circuit-closing position. Fig. 2 is a section on the line 2, 2 of Fig. 1. Fig. 3 is a top view. Fig. 4 is a horizontal section on the line 4, 4 of Fig. 5. Fig. 5 is a section similar to Fig. 1, showing the movable fuse-carrier in elevated position to open circuit.

Similar letters and numbers of reference indicate like parts.

A is the containing box, preferably of sheet metal. The upper edge B, Fig. 2, of one of the end walls C of said box is bent over. The cover D has three edges flanged to extend over the box walls, and a fourth edge unflanged to pass under the end wall edge C. The opposite end wall E has at its upper edge an integral projection F, Fig. 3, which passes through an opening in the cover when said cover is in position. There is an opening in said projection to receive the shackle of a seal fastening G. The cover is, therefore, locked in place by the bent over edge B of the end wall C and by the seal fastening G.

Within the box A is a block H of insulating material, preferably porcelain. In said block on one side are three recesses, in which respectively are the contact clips I, J, K, Fig. 4. On the opposite side of the block are three similar recesses, in which respectively are the contact clips L, M, N. Each contact clip is formed integrally of a strip of sheet metal, preferably copper, bent in the form of two parallel loops 7, 8, Fig. 2. The parts 9, 10 of the strip beyond said loops are approximated and bent at right angles to the plane of the loops. Said parts are secured to the bottom of the recess in which they lie by countersunk screws 11. The leads of a three-wire system enter openings in the end walls of the box. The positive leads 12, 13 are connected to clips I, L, the negative leads 14, 15 to clips K, N, and the neutral leads 16, 17 to clips J, M.

O is a fuse plug carrier block, preferably of porcelain, having in one side recesses to receive the threaded sockets P for fuse plugs Q. To the shells of said sockets are connected contact strips R which are secured upon the bottoms of said recesses and extend down through the material of the block and beyond the same to coöperate with clips L and N. To the center contacts in said shells are connected contact strips S which are secured by countersunk screws on the side of the carrier and extend down to cooperate with clips I, K. On the under side of carrier O is a shallow recess in which is secured the middle portion of a metal strip, the ends T of which are bent downwardly to coöperate with clips J, M.

Secured upon the carrier O is a metal frame comprising integrally two trough-shaped portions U and a connecting bar V which extends above the carrier and forms a bail or handle for operating the same, as hereafter described. The projections U are received in trough-shaped guides W of sheet metal secured on the inner side of the box walls. Fixed in each guide is a bracket 18, and in each trough-shaped portion U is a bracket 19. Between these brackets are secured helical springs X which normally operate to hold the carrier O in raised position. The carrier O and the projections U are received in suitable slots in the cover D. When the carrier is moved upward by springs X, the contact plates R, T are raised out of the clips I, J, K, L, M, N. When the carrier is moved downward by the operator pressing upon the handle V, the said plates enter said clips and so establish circuit in the positive and negative leads through the fuse plugs, and in the neutral lead through the plate T.

In order to retain the carrier in circuit-closing position, I provide an arm Y, pivoted upon the cover D, and provided with a handle, which may be turned so as to extend over the carrier after the latter has been depressed, as shown in Fig. 3, full lines. When the arm Y is in this position, the opening in a projection 20 thereon comes opposite the opening in a similar projection

21 fixed on the cover. The shackle of a seal fastening 22 is then passed through the said openings, thus locking the arm V in holding position.

I claim:

1. A switch box, comprising an inclosing case, fixed switch contacts therein, a switch member coöperating with said fixed member, a support of insulating material for said movable member slidable in an opening in a wall of said case, a metal frame secured to said support and extending across the top and over the vertical sides thereof, lateral flanges on the vertical portions of said frame, guide-ways in said box receiving said frame flanges, abutments on said frame and said guide-ways, springs interposed between said abutments, and means for retaining said switch in closed position against the resiliency of said springs.

2. A switch box, comprising an inclosing case, a fixed switch member therein, a block of insulating material sliding in a wall of said case, a switch member secured upon said block and coöperating with said movable member, trough-shaped projections on the edges of said block, trough-shaped guides secured within said case and receiving said projections, helical springs within said projections interposed between abutments respectively on said projections and said guides and constructed normally to move said block to open said switch, and means for retaining said block in position to close said switch against the resiliency of said springs.

3. A switch-box, comprising an inclosing case, fixed switch contacts therein, a movable member coöperating with said fixed contacts and constructed to slide in an opening in a wall of said case, a spring in said case interposed between said switch members, a bent arm horizontally pivoted on the exterior of said wall and movable to engage with its bent portion said movable member to retain the same in engagement with said fixed contacts against the resiliency of said spring, and means for locking said arm in retaining position.

4. A switch box, comprising an inclosing case, fixed switch contacts therein, a movable member coöperating with said fixed contacts and constructed to slide in an opening in a wall of said case, a fixed abutment in said case, a spring in said case interposed between said movable switch member and said fixed abutment, a pivoted arm on the exterior of said wall for retaining said movable member in contact with said fixed contacts against the resiliency of said spring, a projection on said arm having an opening, a fixed projection on said wall having an opening, and a seal fastening having a shackle engaging in said openings: the aforesaid parts being constructed so that when said arm is moved into position to retain said movable member, the openings in said projections shall register to receive said shackle.

5. A switch box, comprising an inclosing case, fixed contact clips therein, a block of insulating material sliding in a wall of said case, a fixed abutment in said case, contact plates secured upon said block and coöperating with said contact clips, screw plug sockets disposed in said block and in circuit with said contact plates, resilient means within said case interposed between said block and said fixed abutment, and means for holding said block against the resiliency of said means to establish contact between said plates and said clips.

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

THOMAS E. MURRAY.

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