T. E. MURRAY.

ELECTRIC CUT-OUT BOX.

APPLICATION FILED NOV. 19, 1910.

995,628. Patented June 20, 1911.

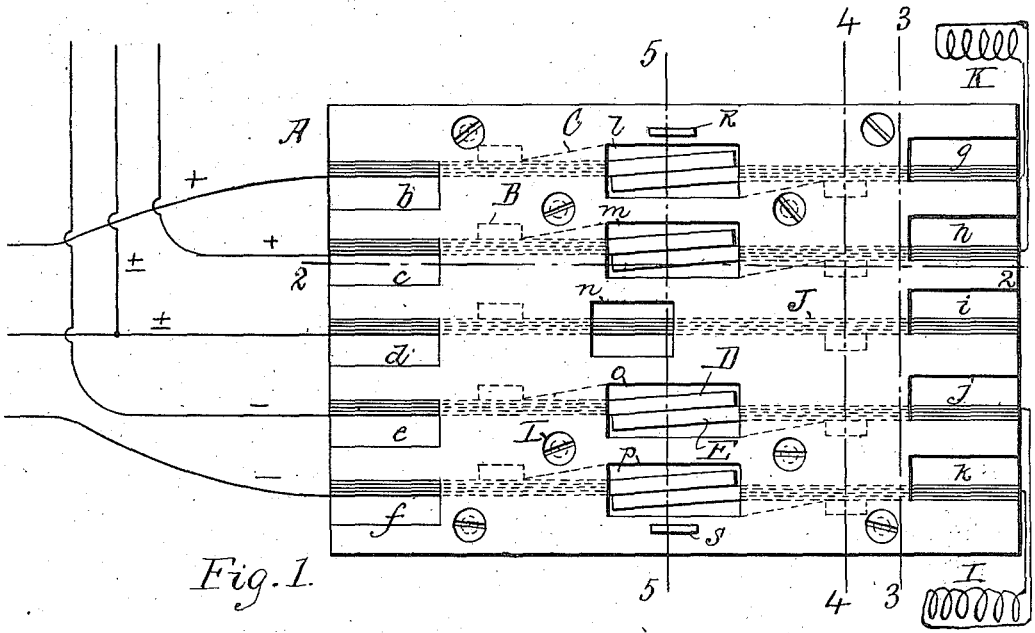

Fig. 1.

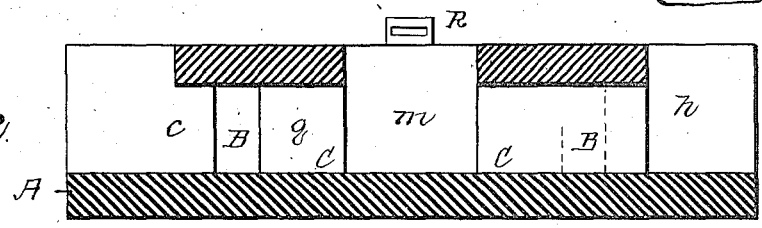

Fig. 2.

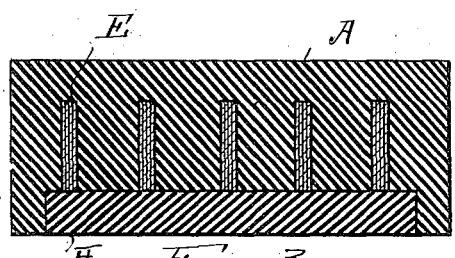

Fig. 3.

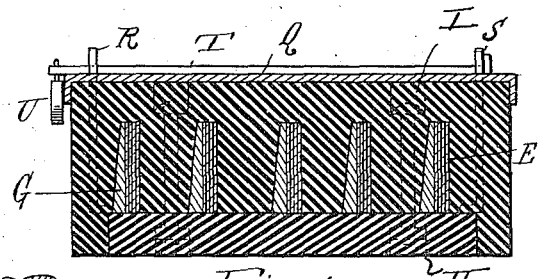

Fig. 4.

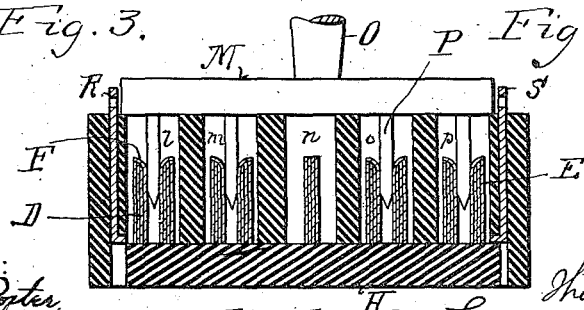

Fig. 5.

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ELECTRIC-CUT-OUT BOX.

995,628. Specification of Letters Patent. Patented June 20, 1911.

Application filed November 19, 1910. Serial No. 593,163.

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 Electric-Cut-Out Boxes, of which the following is a specification.

In another application for Letters Patent, Serial No. 588,955, filed by me October 25, 1910, I have described and claimed a meter testing cut-out which comprises a cut-out box and pairs of separable spring contact plates therein which are connected to the terminals of the service and local conductors and of the meter. A single manually operated device, to which may previously be connected the standardizing or testing apparatus, is applied to said contact plates, with the result that connections are established between the meter, standardizing apparatus and service line, without disturbing circuit to said local conductors.

My present invention improves the construction of the cut-out box used in the aforesaid device, so as to render it suitable for conditions involving heavy currents of electricity which it might be difficult to deal with in spring contacts constructed and arranged as shown in my aforesaid application.

It is to be understood that the construction of the manually applied device and the circuit connections are the same as in my said application, and hence said construction and connections are not herein shown specifically or in detail.

In the accompanying drawings—Figure 1 is a plan view of my improved meter testing cut-out block. Fig. 2 is a longitudinal section of the block on the line 2, 2 of Fig. 1, the contact plates being removed. Fig. 3 is a transverse section on the line 3, 3 of Fig. 1. Fig. 4 is a transverse section on the line 4, 4 of Fig. 1, showing the cover and locking bar in place. Fig. 5 is a transverse section on the line 5, 5 of Fig. 1, showing the contact plugs inserted between the contact bars for meter testing purposes.

Similar letters of reference indicate like parts.

The cut-out box A is preferably formed of a solid block of refractory insulating material, such as porcelain. In one end it has five recesses *b*, *c*, *d*, *e*, *f*, at the other end five corresponding recesses *g*, *h*, *i*, *j*, *k*, and in the middle five recesses *l*, *m*, *n*, *o*, *p*; the middle recesses being connected to the end recesses by passages, as *q*, *r*, Fig. 2. In the walls of the passages are recesses B, which are wedge shaped in cross section, tapering upwardly. From the recess B the passage is gradually enlarged by making the surface of one wall inclined or beveled outwardly to meet the wall of the middle recess, (as *l*) as shown at C, dotted lines, Fig. 1. The recesses B in the passages *q* between the middle recesses *l*, *m*, *n*, *o*, *p* and the end recesses *b*, *c*, *d*, *e*, *f* are in walls of said passages opposite to the walls in which are formed the recesses B in the passages *r* between the middle recesses *l*, *m*, *n*, *o*, *p* and the end recesses *g*, *h*, *i*, *j*, *k*.

Extending from each end recess *b*, *c*, *e*, *f* into the middle recesses *l*, *m*, *o*, *p* is a contact bar D, formed of a plurality of laminations preferably of sheet copper. Extending from each end recess *g*, *h*, *j*, *k* is a similar contact bar E. The ends of said bars are bent slightly in opposite directions and overlap one another in said middle recesses.

The laminations of each bar are of unequal height, so that the lamination F on the inner side of each bar may be bent outwardly over the other laminations, as shown in Fig. 5. Each contact bar is secured in place by a wedge G inserted in the recess B, as shown in Fig. 4. The bottom of the box A is countersunk, so that after the wedges are inserted, a protecting cover H may be seated therein and secured by suitable screw bolts I.

Through the end recesses *d* and *i* and middle recess *n* extends a conducting bar J which may be laminated to correspond to the contact bars D, E, if desired. This bar is secured by wedges in the same way as bars D, E. The positive service conductor of a three-wire system is here shown connected to the end of bar D in recess *b*, the negative conductor to the end of bar D in recess *f*, and the neutral conductor to the end of bar J. The positive local conductor is connected to bar D in recess *c*, the negative local conductor to bar D in recess *e*, and the neutral local conductor to the service neutral conductor. At the opposite end of the box, the meter field coils K and L have their terminals connected to bars E in recesses *g*, *h*, *j*, *k*. The meter armature connection (not shown) is made in the usual way.

The gang plug M, having a handle O on its upper side and four plugs P on its lower side is indicated in Fig. 5, sufficiently to

show that its plugs enter between the inclined ends of the bars D, E in each of the middle recesses, thus separating said bars. The insertion of the plugs is facilitated by bending the inner laminations of said bars over the outer laminations, as already described. To these plugs in the mode set forth in my aforesaid application, the testing instruments are connected.

The number of laminations in each bar D, E may be varied in accordance with the current to be conducted, and in this way, the apparatus may be adapted to currents of varying strength. The wedges may, of course, be removed, as desired, and wedges of different thicknesses used to suit the number of laminations in the bar secured. In order to prevent unauthorized access to the contacts, I provide a metal flanged cover Q which fits over the base block, and has openings to receive two fixed lugs R, S, through which pass a headed bar T, secured by any suitable seal device U.

I claim:

1. Two spring contact bars extending in relatively opposite directions and in overlapping contact at their end portions, each of said bars being formed of a plurality of separable laminations laid in juxtaposition, a support, and means for clamping the laminations of each bar together and to said support.

2. Two spring contact bars extending in relatively opposite directions and in overlapping contact at their end portions, each of said bars being formed of a plurality of separable laminations laid in juxtaposition, a support having openings receiving said bars, and wedges entering said openings and securing said bars therein.

3. Two spring contact bars in overlapping contact at their end portions, each formed of a plurality of laminations of different widths, the contacting lamination of each plate being bent over the other laminations of said bar, a support, and means for securing said bars to said support.

4. A block having a passage and an open recess in said passage, and two leaf spring bars disposed in said passage edge upward and having their end portions in overlapping contact in said recess, and means in said passage for securing said bars.

5. A block having a passage and an open recess in said passage and two leaf spring bars, each formed of a plurality of laminations, disposed in said passage edge upward and having their end portions in overlapping contact in said recess, and means in said passage for securing said bars.

6. A block having a passage provided with an opening on its under side and a recess in said passage open on its upper side, two leaf spring bars disposed in said passage edge upward and having their end portions in overlapping contact in said recess, and wedges disposed between said bars and the passage walls.

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

THOMAS E. MURRAY.

Witnesses:

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