

G. A. JORDAN.
ELECTRIC CUT-OUT.
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1,002,996.

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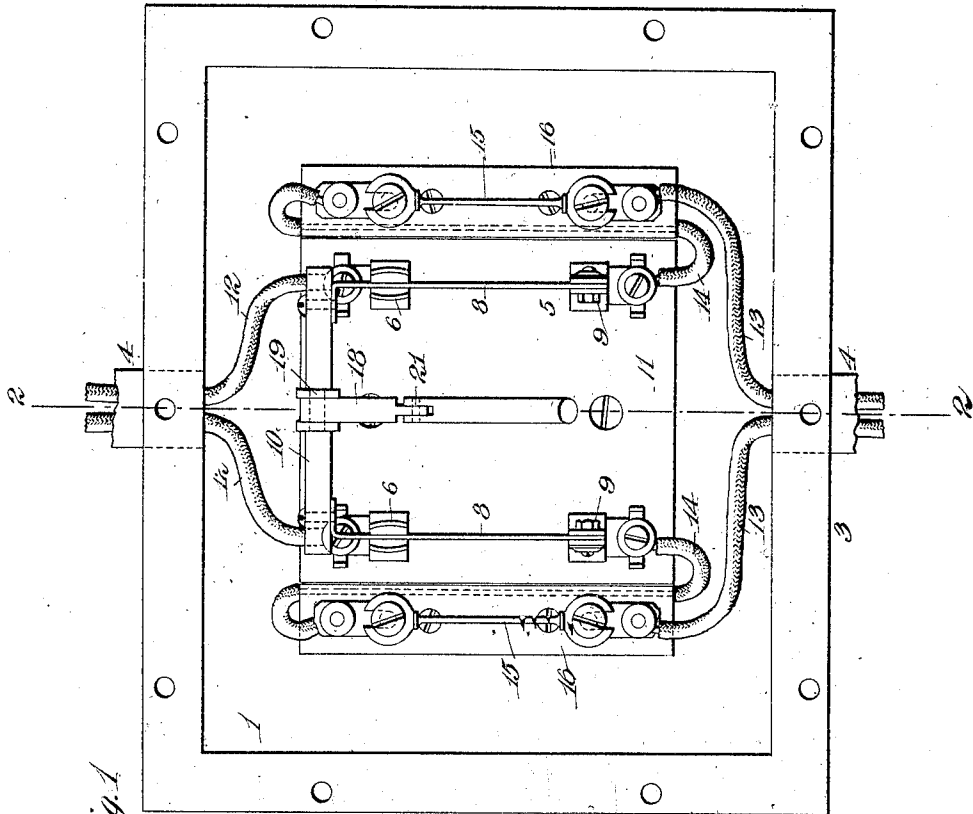


Fig. 1

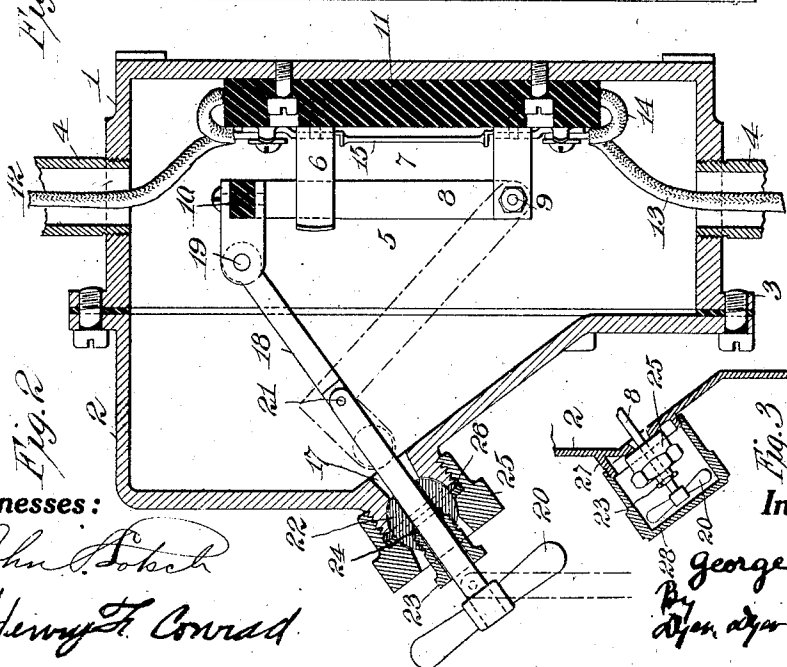


Fig. 2

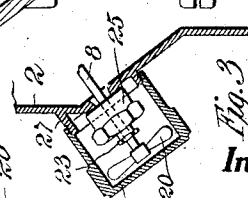


Fig. 3

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ELECTRIC CUT-OUT.

1,002,996.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE A. JORDAN, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, city and State of New York, have invented a certain new and useful Electric Cut-Out, of which the following is a specification.

The object I have in view is the production of a cut out or circuit breaker for electric circuits which will be entirely inclosed, will be acceptable to the underwriters, will be of minimum size and entirely water and gas proof, which cannot be tampered with, unlikely to get out of order and will be cheap to construct and durable. These and further objects will appear from the following specification and accompanying drawings considered together or separately.

In the drawings: Figure 1 is a plan view of a switch and switch box embodying my invention, showing the cover removed; and Fig. 2 is a section on the line 2—2 of Fig. 1, showing the cover.

In both of these views like parts are designated by similar reference characters.

In the embodiment chosen for illustration, I mount a switch within a completely inclosed box. The box comprises a body 1 and a cover 2. The body 1 is best made rectangular in shape, of cast iron and with an integral flange 3 on the upper end. The shape of the box, however, is immaterial,—as is also the material of which it is made. At the top and bottom of the box are couplings or conduits 4, 4 for the entrance and egress of the circuit wires. Within the box is a switch 5. This switch is shown as of the ordinary two pole type and comprises contact members 6, 6 in the form of double flexible members and a moving member 7 in the form of two knife blade elements 8, 8 pivoted at 9, and with the free ends connected together by an insulating bar 10, by means of which the switch may be opened and closed in the manner usual to such switches. These elements of the switch are supported upon the usual insulating base 11, which is shown as secured by screws to the bottom of the box. As shown in Fig. 1, the upper leads 12, 12 come in at the top of the box and are connected electrically to the contact member 6, 6. The lower leads 13, 13, which pass out through the lower side of the box, are connected to the pivot contact 9, by lengths of wire 14. Between the wire 14 and

the lead 13 on each side is interposed a fuse 15. Each fuse is secured to a block 16 of slate or other insulating material which lies alongside the base 11. The blocks 16 are secured by screws or other suitable means of attachment to the bottom of the body 1. The wire 14 on each side lies within a groove formed on the inner side of the block 16 where the said block engages with the side of the base 11. By this construction the length of the switch is very much more reduced than those heretofore made, in which the fuses lie at the ends, as distinguished from the side of the switch. This permits a minimum sized box, as the present rules of the underwriters require at least an inch space between the insulating base and the inside of the metal box.

The second feature of my invention resides in the means for opening and closing the switch from the outside of the box. This means comprises a rod connected to the switch arm and passing through a stuffing box, and provided with an operating handle on the outside of the box, and being hinged, so that, when the switch is opened, the protruding portion of the rod can drop out of the way.

Referring to Fig. 2, the cover 2 has an opening 17 through which a rod 18 passes. The inner end of this rod is pivoted at 19 to the insulating bar 10 of the moving portion of the switch. The outer end of the rod which extends beyond the face of the cover is provided with a handle 20, by means of which it may be manipulated. By pulling out or pushing in the handle, the switch will be opened or closed and turn from the full line position to the dotted line position. The rod is provided with a joint 21 whereby, when the switch is open, the portion extending outside of the joint will hang down vertically, as shown in broken lines in Fig. 2. The position of the joint should be such that this can be done.

For the purpose of excluding moisture or gas from the inside of the switch or to prevent the passing out of fire, if a short circuit occurs in the switch, the rod 18 is adapted to pass through a stuffing box. In order to provide for the different angle of inclination of the rod, owing to the fact that its inner end is connected to a hinged switch element pivoted to one side, I form the stuffing box in a ball or sphere which in turn is

mounted within a second stuffing box. The details are shown in Fig. 2. The rod is preferably of cylindrical cross-section. It passes through an opening in the ball 22.

5 This opening is closed by a stuffing box, consisting of a gland 23 and packing 24. By this means the joint through the ball can be made tight. The ball is supported in a stuffing box which comprises a gland 25 and packing 26. By this means the joint between the ball and the opening 17 is made tight and at the same time the ball can turn in order to accommodate the changing angle of the rod when the switch is opened and closed.

15 In order to prevent tampering with the switch, I may incase the handle 20 as shown in Fig. 3. The cover 2 may be provided with an annular flange 27 surrounding the opening 17, to which may be removably secured a cap 28 covering the handle 20 and glands 23 and 25.

20 It will be noticed that my improved box is divided through the middle and has an arrangement which permits an inclined face on the front where the opening 17 is located, so that this opening is at right angles to the plane of the cover and parallel to the normal plane of the rod 18. This makes a better joint between the rod and packing than would be possible if the front portion of the box were not inclined. It also reduces the size of the box, as will be seen from an examination of Fig. 2.

25 In accordance with the provisions of the patent statutes, I have described the principle of my invention, together with the apparatus which I now consider to represent the best embodiment thereof; but I desire to have it understood that the apparatus shown is merely illustrative and that the invention can be carried out in other ways.

30 Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:—

45 1. An inclosed switch which comprises a box, a pivoted switch element within the box and a rod connected to the switch element and passing through a wall of the box, said rod being surrounded at the wall with

yielding packing to permit the plane of the rod to change as the switch is opened or closed.

2. An inclosed switch which comprises a box and a pivoted switch element within the box, a rod connected to the switch element and passing through a wall of the box, a ball joint at the wall, said joint permitting the plane of the rod to change as the switch is opened and closed.

3. An inclosed switch, which comprises a box, and a pivoted switch element within the box, a rod connected to the switch element and passing through a wall of the box, a ball joint at the wall, said joint permitting the plane of the rod to change as the switch is opened and closed, packing around the rod and within the ball, and a gland carried by the ball.

4. An inclosed switch which comprises a box and a pivoted switch element within the box, a rod connected to the switch element and passing through a wall of the box, said rod being jointed so that when the switch is opened the outer part of the rod is free to hang down.

5. A switch in combination with a box, said box having an inclined front portion with an opening therein and a rod passing through the opening and connected to the switch, the rod normally lying substantially at right angles to the inclined portion of the box, and means carried by the front portion to permit the plane of the rod to change as the switch is opened and closed.

6. An inclosed switch which comprises a box, a pivoted switch element within the box, a rod connected to the switch element and passing through a wall of the box, means carried by the wall to permit the angle of the rod to change, a joint in the rod, the free end of the rod being covered by a removable cap when the switch is closed.

This specification signed and witnessed this fifth day of February, 1910.

GEORGE A. JORDAN.

Witnesses:

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