

(No Model.)

2 Sheets—Sheet 1.

G. B. MARTRATT.
ELECTRICAL SWITCH.

No. 465,997.

Patented Dec. 29, 1891.

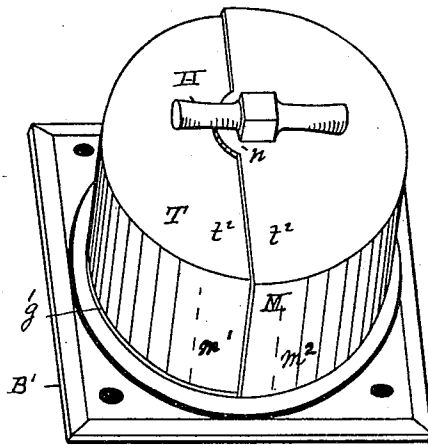


FIG 1

FIG 2

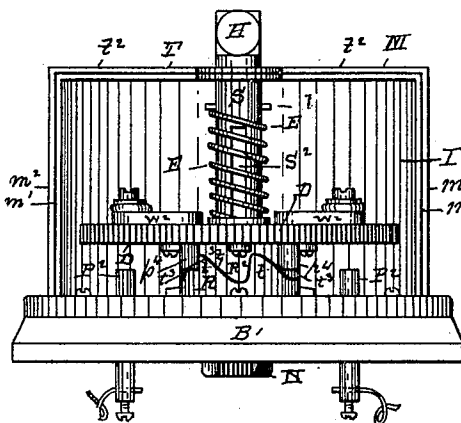
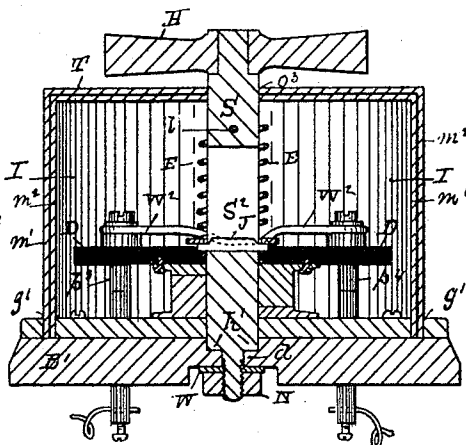


FIG 3



WITNESSES

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Charles S. Paintnall

INVENTOR

George B. Martratt
by W. E. Hagan,
att'y

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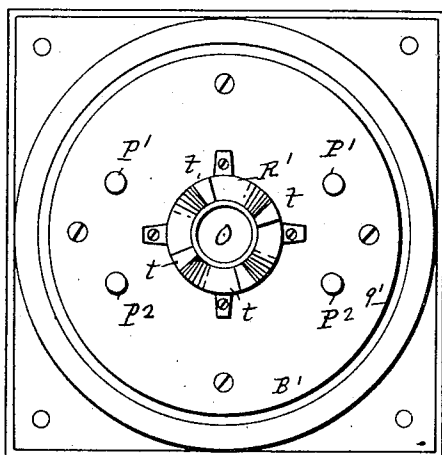


FIG 4

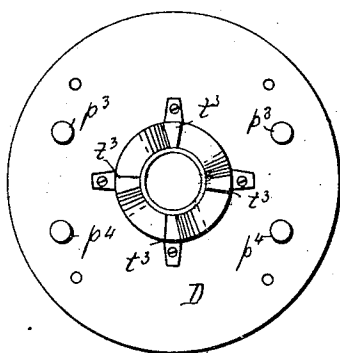


FIG 5

WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE B. MARTRATT, OF TROY, ASSIGNOR OF ONE-HALF TO CHARLES E. MARTRATT, OF ALBANY, NEW YORK.

ELECTRICAL SWITCH.

SPECIFICATION forming part of Letters Patent No. 465,997, dated December 29, 1891.

Application filed December 6, 1890. Serial No. 373,850. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. MARTRATT, of the city of Troy, county of Rensselaer, and State of New York, have invented a new and useful Combined Electrical Switch and Safety Box, of which the following is a specification.

My invention relates to that class of devices which are used to connect or disconnect an electrical circuit where the latter enters buildings for lighting and other purposes; and the object and purpose of my invention is to provide an inclosure in which an electrical switch may be arranged, and also to produce an improved construction of the latter in combination with a fusible connection, whereby on the entrance of a short current the fusible connection will melt and break the circuit, so as to prevent the danger from firing.

Accompanying this specification to form a part of it there are two plates of drawings containing five figures illustrating my invention with the same designation by letter reference use in all of them.

Of the illustrations, Figure 1 is a perspective of my improved switch-box with the side door shown as closed. Fig. 2 shows a side elevation of the apparatus with the sliding door shown as moved around to expose the interior apparatus and with the switch shown as open. Fig. 3 illustrates the box, handle, central shaft, and base shown in diametrical section, with the interior parts illustrated in side elevation and with the circuits closed. Fig. 4 is a plan view of the bottom of the box and base with all the other parts shown as removed, excepting the pins and lower ratchet part, which are upwardly projected from the bottom. Fig. 5 is a plan view of the under side of the switch-disk, with the latter shown as turned over, and with what is its underside when in position shown as facing the view.

The several parts of the apparatus thus illustrated are designated by letter reference, and the function of the parts is described as follows:

The letter B' designates the base or bottom of the switch-box.

P¹ P² P³ P⁴ designate four projections or contact-pins by which the wires of a circuit connect and disconnect and which are upwardly projected from said base or bottom,

and R' a ratchet part that is arranged on the upper face of said base B'. This ratchet part is constructed with four ratchet-teeth *t* and it is secured to the said base. This ratchet part R' is made with a central passage O.

The letter M designates the box, which is cylindrical in form and has a flat top T, that is parallel to the base B'. This box is divided in two semi-cylindrical parts *m'* *m*², the part *m'* being secured to the base B' and the part *m*² being adapted to slide outside the part *m'* in an annular groove *g'* when access to the box is required, the top parts *t*² of each of the parts *m'* *m*² being made to lap past each other at their diametrical centers at *n* to form the shaft passage or bearing O³.

The letter S designates a vertical shaft, which extends up through the cover part *m'* so as to project beyond the latter, and at its upper end this shaft is provided with an operating-handle H. The lower end of this shaft passes through the opening O, made in the ratchet part R', and through the base B', and at its lower end is made with a shoulder *h'*, that turns in an annular recess *d* made in the bottom or base B', with the lower end of said shaft where passing below the latter provided with a washer W and a nut N, so that as thus arranged said shaft S can be turned with the upper end journaling in the top of the box and its lower end in the base B'. The letter S² designates a slot made in the shaft S, within the inclosure I formed by the box.

The letter D designates a hard-rubber disk, which is arranged on the shaft S so as to be moved up and down thereon, as will be hereinafter described, and this disk has arranged upon its under surface and secured thereto the ratchet part R², made with four ratchet-teeth *t*³, that are downwardly projected therefrom, so as to be vertically and circumferentially in line with the ratchet-teeth upwardly projected from the base B'.

The letters *p*³ *p*³ *p*⁴ *p*⁴ designate four projections or pins for connecting or disconnecting the circuit, which pins are downwardly extended from the under side of the disk D, and with which the wires of the circuits connect, each set of these pins being connected by means of a fusible wire or plate W² above the disk.

The letter J designates a bar that passes through the slot S^2 at right angles to the shaft S, and at its ends where subtending the latter said bar is connected to the top of the disk D, so that when the shaft is turned said disk turns also, and when said disk is operated to rise or fall the bar J slides in the said slot.

The letter E designates a spiral spring that is arranged to encircle the shaft S within the inclosure I between the top of the disk D and a cross-pin l passing through said shaft above the slot S^2 , so that when said disk is operated to rise, as will be hereinafter described, it so moves against the force of said spring E.

The teeth upon the ratchet parts R' and R^2 each have one inclined side and one vertical straight side, with the latter side of the teeth on the ratchet part R' at right angles to the base B' and the straight side of the teeth on the ratchet part R^2 at right angles to the disk D, so that as thus oppositely made when the ratchet part R^2 is forced down by the action of the spring E encircling the shaft S the ratchet parts make an interlocking engagement, as shown at Figs. 2 and 4. When the pins p^3 p^3 are each in contact with one of the pins P' P' and each of the pins p^4 p^4 is in contact with one of the pins P^2 P^2 , the circuit is closed. To disconnect the circuit, the handle H is turned so as to rotate the disk D, which as the inclined teeth of the ratchet parts engage they cause the disk to rise, so as to separate the pins of the disk from those of the base-plate, and when one ratchet-tooth has been passed the disk is forced down by the spring E, so as to have the pins on the disk away from contact with those of the base-plate with the parts appearing as shown at Fig. 3. When it is desired to close the circuit, the handle H is operated to move the disk and its ratchet part one tooth, when the disk descends, so as to bring the circuit-closing pins in contact, with the parts appearing as shown at Figs. 2 and 4.

While I have thus described the disk as made of hard rubber, any other well-known insulating material may be employed.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the bottom B' ,

made with the annular groove g' , of the semi-cylindrical box parts m' m^2 , the part m' being rigidly secured at its lower edge to said bottom, with the other box part m^2 adapted to be moved around on its lower edge in said annular groove outside of the part m' , a shaft provided with its bearings in the centrally-located lapping top parts of the box and in the bottom B' , the disk D, constructed with the ratchet part R^2 on its under side and keyed to said shaft, so as to be turned by the latter and to rise thereon and having circuit-pins projected up through said disk and thereat connected, and with said pins extended downwardly through said disk so as to project therefrom, a spring encircling said shaft between a stop-pin in the latter and the top of said disk, and circuit-pins upwardly projected through the bottom B' , and the ratchet part R' , arranged on the latter, adapted to engage with the ratchet part on the disk D, substantially in the manner as and for the purposes set forth.

2. In an electrical switch and safety box, the combination of a box made in two end-covered semi-cylindrical parts, with one of the latter adapted to slide around past the other in a groove made in the box-bottom, a ratchet part having its teeth projected upwardly from the box-bottom, circuit-pins projected into the interior of the box from the bottom thereof, a shaft having its bearing in the bottom and top of the box and provided with an operating-handle and a slot S^2 , a disk having circuit-pins that connect by a fusible wire or plate on the upper side of the disk and therefrom extend through, so as to project beyond the other side of the disk, a bar J, secured to said disk and extending through the slot S^2 of the shaft, a ratchet on the under side of said disk, adapted to engage with the ratchet on the box-bottom, and a spring encircling said shaft between a stop-pin thereon and said disk, substantially in the manner as and for the purposes set forth.

Signed at Troy, New York, this 28th day of June, 1890, and in the presence of the two witnesses whose names are hereto written.

GEORGE B. MARTRATT.

Witnesses:

W. E. HOGAN,
CHARLES S. BRINTNALL.