

(No Model.)

E. P. MORRIS.  
SWITCH AND SAFETY FUSE.

No. 490,917.

Patented Jan. 31, 1893.

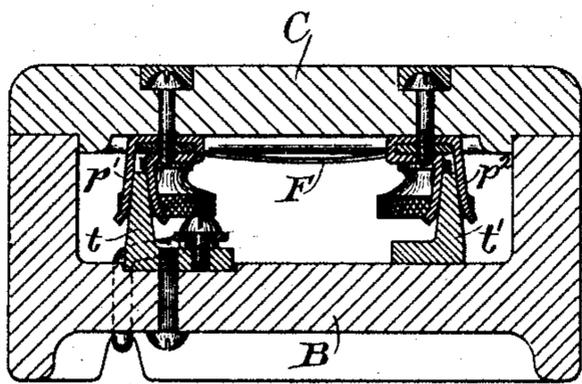
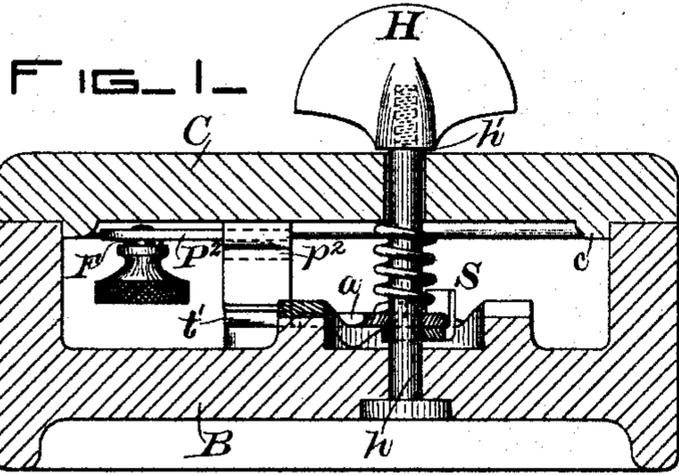


FIG. 4-

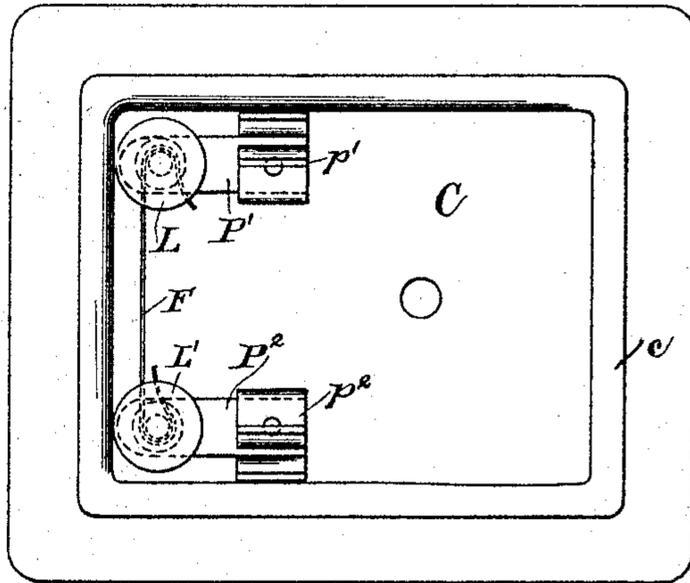
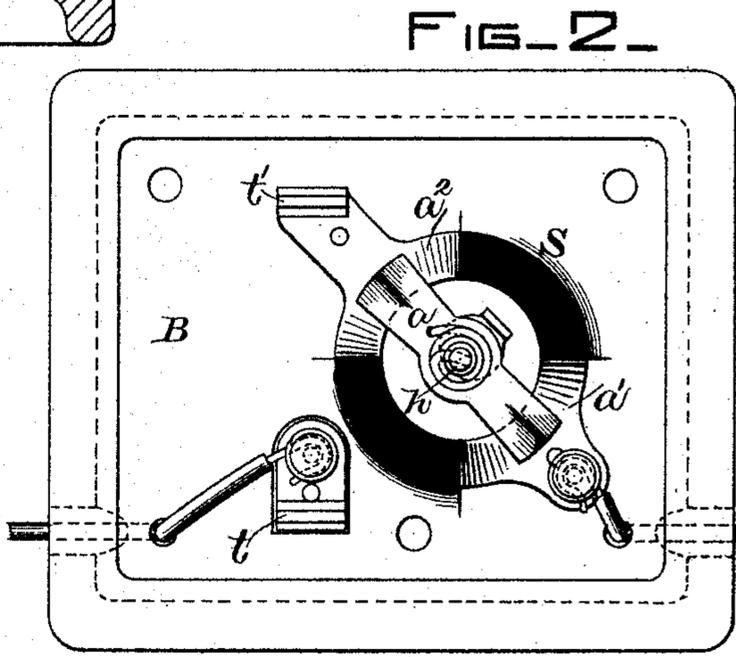


FIG. 3-

WITNESSES

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INVENTOR

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# UNITED STATES PATENT OFFICE.

ELMER P. MORRIS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE THOMSON-HOUSTON ELECTRIC COMPANY, OF CONNECTICUT.

## SWITCH AND SAFETY-FUSE.

SPECIFICATION forming part of Letters Patent No. 490,917, dated January 31, 1893.

Application filed February 11, 1892. Serial No. 421,144. (No model.)

*To all whom it may concern:*

Be it known that I, ELMER P. MORRIS, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in a Combined Switch and Safety-Fuse, of which the following is a specification.

This invention relates to improvements in combined switches and safety fuses, its object being to combine the two devices so as to require the fewest possible number of parts.

In the accompanying drawings Figure 1 is a vertical section of the switch and fuse box, Fig. 2 is a plan with the cover removed, Fig. 3 shows the cover, and Fig. 4 is a transverse section of the box on the line of the fuse contacts.

The combined device comprises a box or base B, a cover C, both of insulating material, a switch S on the base, and a safety fuse F on the cover. The switch S may be of any suitable form. It has a contact lever or arm  $a$  co-operating with fixed contacts  $a'$ ,  $a^2$  and actuated by a handle H, to open or close the connection between such contacts. The handle is shown connected to the switch arm by a spring and lost motion connection, but may be directly connected if desired. The handle H is removable from the spindle  $h$  of the switch, being for example, screwed thereon. The spindle  $h$  passes through the cover C and a shoulder  $h'$  on the handle engages with the cover, so that the handle itself serves as the means for holding the cover on. The line connections are made to contact  $a'$  and to another contact  $t$  on the base. The fuse wire F is clamped or screwed by thumb-screws L, L',

to plates P', P<sup>2</sup> on the cap, which are formed with clips or connections  $p'$ ,  $p^2$  engaging respectively with terminal  $t$  and a terminal  $t'$  connected to contact  $a^2$ . Thus when the fuse is in place and the switch is closed, the circuit is as follows:—terminal  $a'$ , contact arm  $a$ , contact  $a^2$ , terminal  $t'$ , clip  $p^2$ , fuse F, clip  $p'$ , terminal  $t$ . On removing the handle, the cover may be taken off, and the switch inspected and repaired, or the fuse wire replaced, as may be desired. The cover C is provided with a bead or projection  $c$  which engages with the walls of the box to prevent displacement of the cover by rotation.

What I claim as new and desire to secure by Letters Patent is:—

1. The combination of a box containing a switch having a spindle, a cover for said box traversed by said spindle, and having contact plates with a fuse secured thereto, contacts in the box connected to line and to the switch and engaging with said contacts on the cover, and a handle removably secured to the spindle and engaging with the cover.

2. The combination of a box containing a rotary switch having a spindle, a cover for said box traversed by said spindle and having contact plates with a fuse connected thereto, contacts in the box connected to the line and the switch and engaging with said contacts on the cover and a bead or projection on the cover engaging with the box.

In witness whereof I have hereunto set my hand this 6th day of February, 1892.

ELMER P. MORRIS.

Witnesses:

A. P. KNIGHT,  
H. J. LIVERMORE.