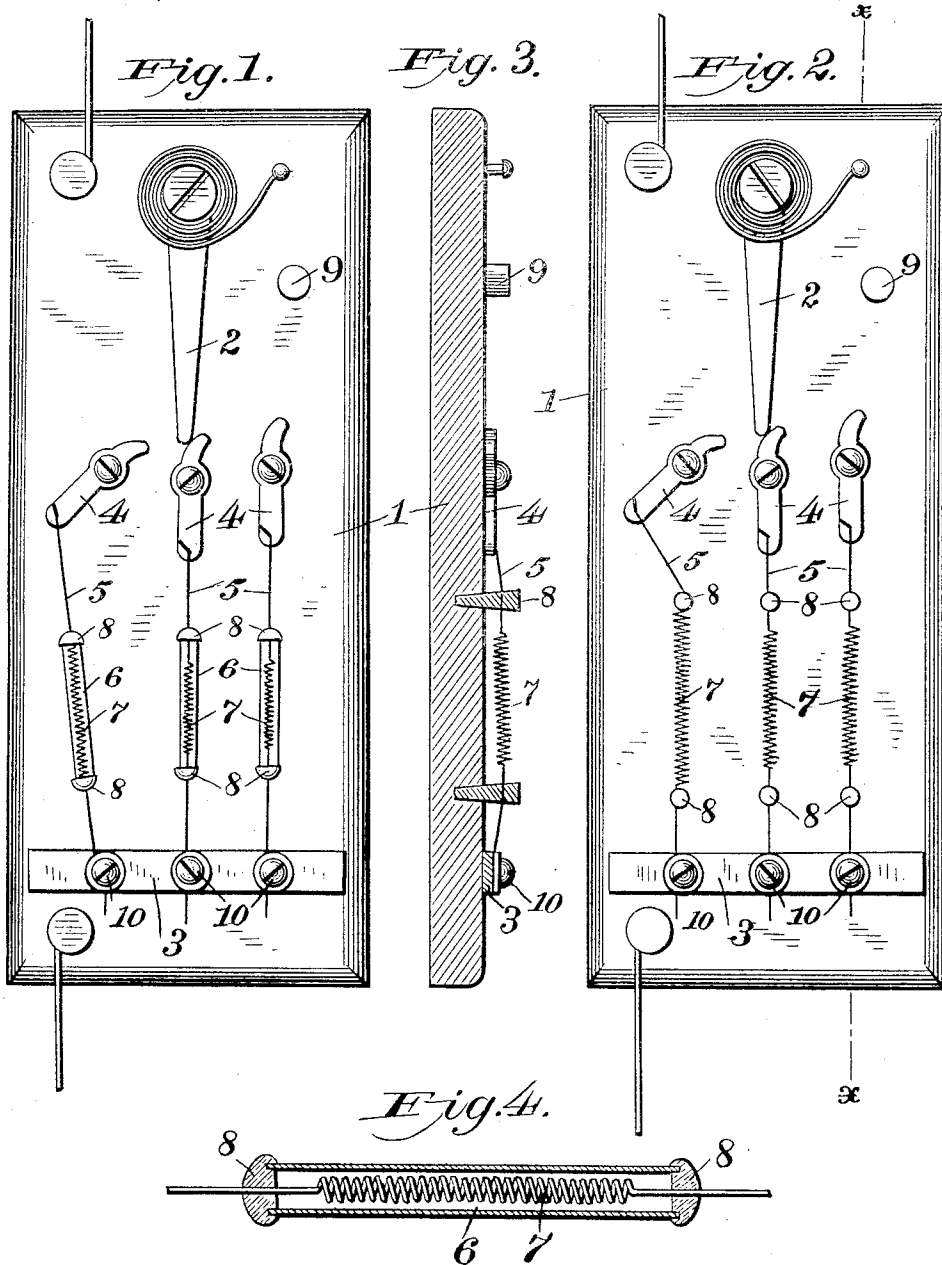


(No Model.)

L. B. FAVOR.
THERMAL CUT-OUT.

No. 461,570.

Patented Oct. 20, 1891.



WITNESSES:

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LORENZO B. FAVOR, OF GLOUCESTER, MASSACHUSETTS, ASSIGNOR TO THE
THERMAL ELECTRIC COMPANY, OF SAME PLACE.

THERMAL CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 461,570, dated October 20, 1891.

Application filed March 12, 1891. Serial No. 384,743. (No model.)

To all whom it may concern:

Be it known that I, LORENZO B. FAVOR, a citizen of the United States, residing at Gloucester, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Thermal Cut-Outs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has reference to thermal cut-outs, and will be best understood by reference to the accompanying drawings, in which—

Figure 1 is a plan of a thermal cut-out constructed in accordance with my invention; Fig. 2, a similar view showing a modification of my improvement; Fig. 3, a section at the line *xx* of Fig. 2, and Fig. 4 a detail of the relaxable coil secured in proper position within the tube preparatory for use.

Similar numerals denote like parts in the several figures of the drawings.

1 is a base of some non-conducting material, as wood. 2 is a spring-actuated finger pivoted at one end of said base and electrically connected with one end of the line-wire. 3 is a conductor-bar secured at the other end of said base and electrically connected with the other end of the line-wire. 4 are dogs pivoted on said base.

5 are tension-wires connected at their respective extremities to the dogs and conductor-bar. The finger in its sweep comes in contact with the noses of the dogs, and if the latter are held rigidly, so as to successfully resist the finger, the latter will be arrested and held against its resiliency, as shown at Fig. 1. It is the function of the tension-wires to hold the dogs rigid, while at the same time such wires must relax so as to release the finger whenever an intense electrical current flows on the main line. I will now more particularly describe these tension-wires.

6 are tubes of any suitable material, as glass, through which said wires extend in the form of coils 7. The ends of the tubes have secured thereto caps 8 of wax or any suitable analogous material readily fusible, and the wires are embedded within the wax, and

thereby held, so that the resistance to the tension caused by the spring-finger is wholly afforded by the wax and not sustained by the coils. In other words, the strain does not come on the coils. When a current of an intensity of at least twenty one-hundredths of an ampère gets in the circuit, whether from lightning, electric-light wires, or otherwise, the wax caps will become softened, so that they will no longer hold the wire, and the tension will therefore come on the coils, which latter will relax, thereby relieving the tension and permitting the spring-finger to pass on to the succeeding dog. As soon as the contact between the finger and dogs is broken the circuit is opened, so that if the high-tension current is momentary, no damage can be done. If the intense current is permanent, the finger will complete the circuit of all the dogs and finally rest in contact with any suitable ground connection 9. The advantage of a relaxable coil will be apparent, for after the coils relax they speedily return to normal position and the wax cools so as to again hold the wire, it being merely necessary to take up any slack in the wire by drawing the latter tight and securing it by the ordinary binding-screws 10.

Glass is a good material out of which to make the tubes, because the coils are protected thereby, and, moreover, they are always visible. However, it is not necessary to employ a tube, for the purposes of my invention are subserved by securing the wax to any object independent of the wire itself, as is shown at Fig. 2, where the wax is fastened to the base 1.

I claim—

1. In a thermal cut-out, the combination of the traversing spring-finger in electrical connection with one end of a line-wire with tension-wires connected with the other end of the line-wire, the contact-dogs by which said finger and wires are connected, the coils in said wires, and the wax caps secured to the wires at the ends of said coils and attached to any object independent of said wires, substantially as set forth.

2. In a thermal cut-out, as described, the combination of the tension-wires 5, having coils 7, the tubes around said coils, the wax

caps secured to the ends of the tubes and to
the wires, the pivoted contact-dogs to which
the wires are attached, and the spring-actu-
ated finger, said finger and wires being in elec-
5 trical connection with the respective ends of
the line-wire, substantially as shown and set
forth.

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

LORENZO B. FAVOR.

Witnesses:

RICHARD C. STEELE,
GEORGE STEELE, Jr.