

H. T. MAIB & E. O. ROWE.
ELECTRIC CAR CONTROLLER.
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1,005,445.

Patented Oct. 10, 1911.

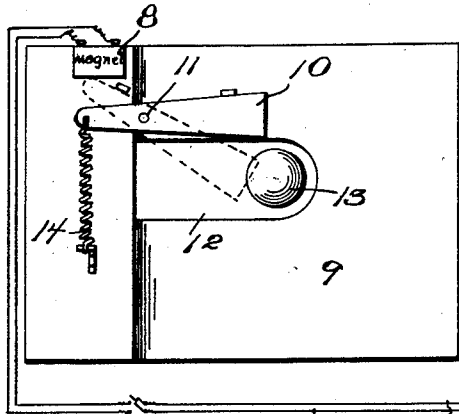


Fig. 1.

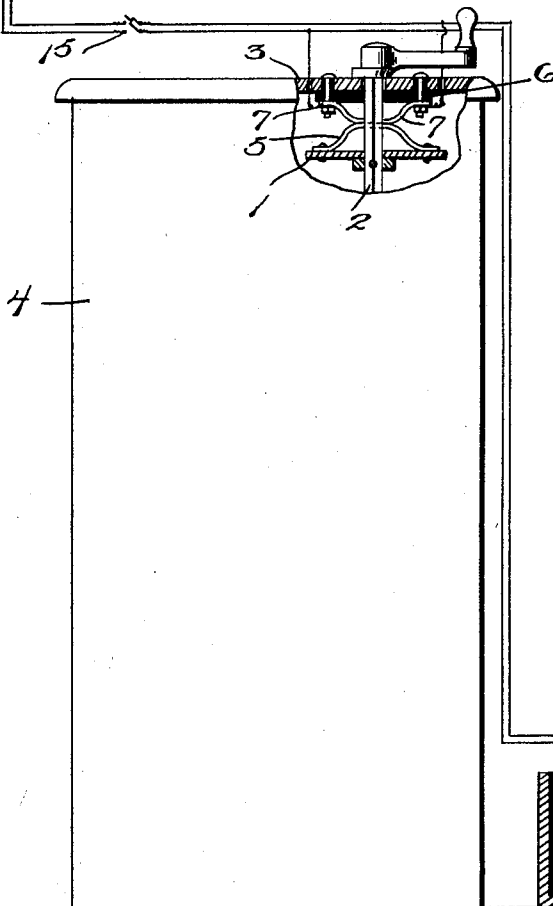


Fig. 2.

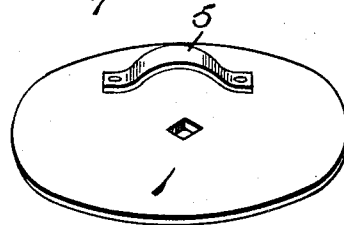


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

HENRY T. MAIB AND EARL O. ROWE, OF SPOKANE, WASHINGTON.

ELECTRIC-CAR CONTROLLER.

1,005,445.

Specification of Letters Patent.

Patented Oct. 10, 1911.

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To all whom it may concern:

Be it known that we, HENRY T. MAIB and EARL O. ROWE, citizens of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in Electric-Car Controllers; and we 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.

This invention relates to improvements in electric car controllers.

It has for its object to provide a safety device to prevent the circuit breaker from blowing out when the motors are reversed and the car is still going ahead. Many times when it is desirable to stop the car as quickly as possible in an emergency to prevent collision or loss of life, the motorman will reverse his motors, thus adding to the effect of the mechanical brakes. This throwing of a sudden overload on the motors will usually cause the circuit breaker, commonly located over the motorman's head, to blow out, thus breaking the circuit and allowing the car to drift. The device is used to prevent this and force the motors to take the overload even though injurious to them, it being justifiable in the prevention of an accident.

With the above and other objects in view the invention resides in the novel features of construction, formations, combinations and arrangements of parts to be hereinafter more fully described, claimed and illustrated in the accompanying drawing, in which—

Figure 1 is a side elevation of the magnetic drop; Fig. 2 is a fragmental view of street car controller with switch in place, and Fig. 3 is an elevation of the two parts of the switch.

Referring to the drawing by characters of reference, the numeral 1 represents a disk fastened in a perpendicular plane to the reverse shaft 2, and mounted under the top 3 of the controller casing 4. On the top of this disk 1 is fastened an inverted U-shaped metallic strip 5. To the under side of the controller top 3 is attached, by suitable fastenings, an insulated bar 6, on the lower side of which are attached two strips of metal 7 formed in the shape of an arc, the ends being separated a small distance, said bar be-

ing attached the same distance from the reverse shaft 2 as the strips 5, so that in turning the shaft by means of the reverse lever the disk will be caused to turn until the U-shaped strip 5 passes under the strips 7, bridging the gap between said strips.

A wire is attached to each of the strips 7, from whence they lead through a conveniently located switch 15 and include in their circuit a source of current 16 and an electromagnet 8. This magnet is located at the side of the circuit breaker box 9. An armature 10 is pivoted at some convenient point 11, so that its short end will be within the attracting field of the magnet 8, the long end of the armature swinging down so as to block the slot 12 in which the circuit breaker handle 13 operates, thus closing the slot and preventing the circuit breaker from blowing out. A spring 14 is provided to normally hold down the short end of the armature, thus raising the long end away from the slot 12 and allowing the handle of the circuit breaker 13 to operate, if necessary.

The operation of the device is as follows: The motorman, wishing to stop his car in the shortest possible distance, throws over his reverse lever to the reverse point, thus turning the disk 1 until the U-shaped strip 5 comes under the two strips 7, completing the electric circuit through this point, the source of the current and the electromagnet 8. The electromagnet will then attract the short end of the armature 10, drawing it up against the tension of the spring 14, causing the long end of the armature to drop down in front of the handle 13, thus holding it in position, so that the circuit breaker cannot open. The motorman can then send a larger amount of current through the motors in the reverse direction and assist the brakes in bringing the car to a stop. On throwing the lever to its ahead position the circuit is broken and the tension of the spring 14 will raise the long arm of the armature 10, thus leaving the circuit breaker free to operate. A switch 15 is provided to break the circuit and render the device inoperative when desired.

Having thus fully described this invention, what we claim as new and desire to secure by Letters Patent is:

1. A device such as described, consisting of a circuit breaker, a box inclosing same, a switch, a magnet, an electrical cir-

cuit including the switch and magnet, and an armature operated by said magnet for rendering the circuit breaker inoperative.

2. A device such as described, consisting
5 of a circuit breaker, a box inclosing the same, a magnet, an armature mounted on the box and adapted to be operated by the magnet for rendering said circuit breaker inoperative, a switch, an electrical circuit includ-
10 ing said switch and magnet, one end of the switch attached to the reverse lever of the car controller, the other to a car controller case, and said part attached to the reverse lever consisting of a disk, having mounted
15 thereon an inverted U-shaped member, substantially as and for the purposes set forth.

3. A device such as described, consisting of a circuit breaker, a box inclosing the same, a magnet, an armature adapted to be

operated by the magnet and attached to said box for rendering the circuit breaker inoperative, a switch, an electrical circuit, including said switch and magnet, one part of the switch attached to the reverse lever of a car controller, the other part attached to the controller case, and said part attached to the controller case consisting of a bar of insulating material, on which are mounted two metallic strips separated a short distance apart, substantially as and for the purposes set forth. 20 25 30

In testimony whereof we affix our signatures in presence of two witnesses.

HENRY T. MAIB.
E. O. ROWE.

Witnesses:

R. E. PINNEY,
ALLEN CHASE KLEIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."