

(No Model.)

W. M. BROWN.
CONTACT BOX FOR ELECTRIC RAILWAYS.

No. 585,255.

Patented June 29, 1897.

Fig. 1.

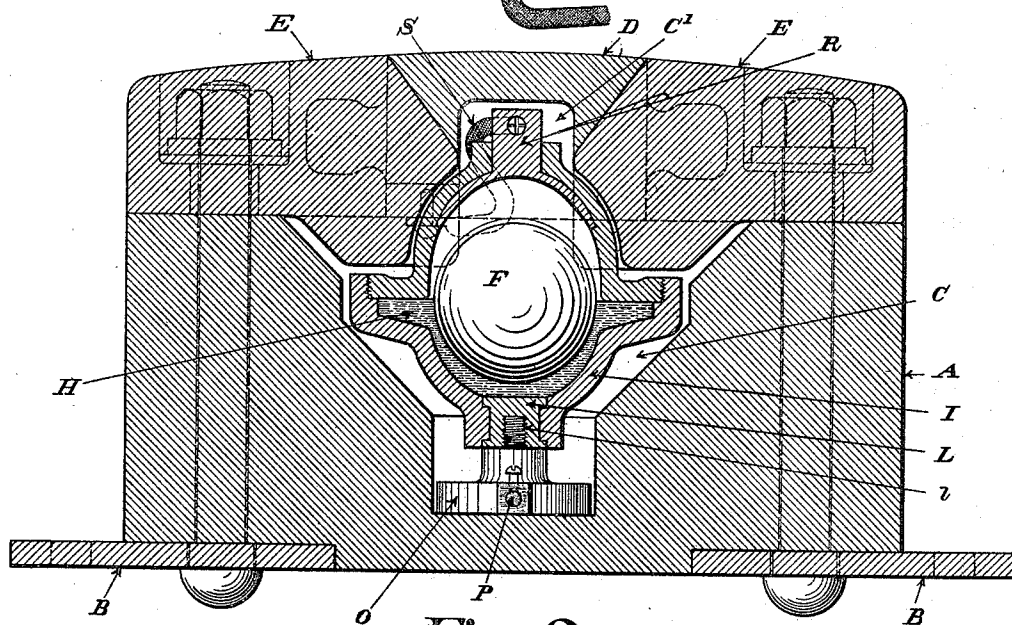
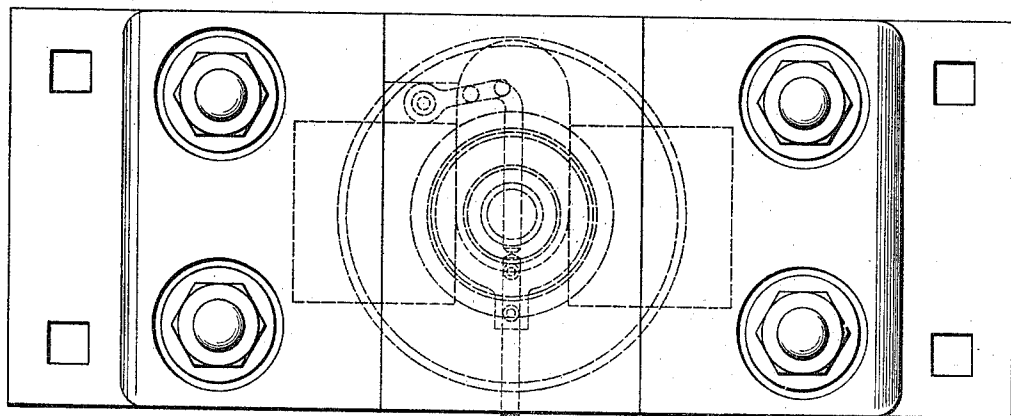


Fig. 2.

WITNESSES:

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WILLIAM MILTON BROWN, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO
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CONTACT-BOX FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 585,255, dated June 29, 1897.

Application filed July 18, 1896. Serial No. 599,649. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MILTON BROWN, of Johnstown, county of Cambria, State of Pennsylvania, have invented certain new and useful Improvements in Contact-Boxes for Electric Railways, of which the following specification is a true and exact description, due reference being had to the accompanying drawings.

My invention relates to the contact-boxes used in electric railways, and has special reference to the boxes used in that class of railways shown and described in Patent No. 558,151, issued to me on April 14, 1896.

In a box of this class there are the following elements: a base member having a cavity, a switch member therein which is here shown as a ball of iron or steel floating in a body of mercury, and a cover composed of a center of non-magnetic material and two sides of a material adapted to convey magnetism.

The object of my invention is to provide a contact-box in which the switch member is more readily removable and replaceable in case of accident to it and to provide a box having certain other advantages hereinafter pointed out and claimed.

Referring to the drawings, Figure 1 represents a front view of a box embodying my invention, and Fig. 2 is a vertical section through the center of Fig. 1.

A is the base of the box and is preferably made of wood, which may be creosoted or otherwise treated with preservative, if desired. The iron plates B serve to spike it to the tie, upon which it usually rests. Within this base is cavity C, adapted to receive the several parts, as hereinafter described, and upon the top is secured the cover, composed of the center D, of non-magnetic material, as brass or manganese steel, and the two sides of cast-iron. This cover also has the cavity I, forming an addition to cavity C in the base. The switch member is here shown as the ball F, floating in the mercury H. This ball and mercury are contained in the vessel I, here shown as a cup, which is formed in two parts, so that when the mercury and ball are in, it may be sealed up. This cup is preferably formed of fiber, vulcabeston, porcelain, or

other insulating material and is preferably so shaped that the diameter of the mercury-reservoir is large at the surface of the mercury and then quickly contracts, as shown. This prevents the surface-level of the mercury falling to such an extent when the ball is lifted as it would were it not for it and at the same time reduces the amount of mercury necessary to be used.

In the bottom of cup I is placed during the process of manufacturing the cups or afterward the contact L, which passes entirely through the wall of the cup, and is therefore in electrical connection with the mercury therein. This contact engages, as by the thread E or otherwise, the pedestal O, to which the feeder-circuit is connected, as at P.

In the top of the cup is formed the other contact-piece R, adapted to make contact with the ball on the inside and to receive the connection S, which is in turn electrically connected to the cover-piece E. This connection S should be of a length sufficient to allow of a coupling upon this connection before setting the cover down to place.

The interior surface of the contact member R should conform closely to the surface of the ball, so that the ball shall fit snugly therein and not roll around on its seat, which might have a tendency to cause an arc. Should this box for any reason become dead or inoperative, it is only necessary to remove the nuts from the four holding-down bolts and lifting the main cover off to remove the cup I and substitute a new cup having the necessary ball and mercury therein. These cups can be kept prepared, and it is but the work of a few minutes to replace an inoperative one.

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

1. In a contact-box of the class described, a sealed vessel removably secured within said box containing a switching mechanism consisting of a solid conductor floating or immersed in a liquid conductor.

2. In a contact-box of the class described, a sealed vessel containing a magnetically-operated switching mechanism and removably secured within the contact-box, an electrical

conductor forming part of said vessel, said conductor being flexibly connected to the contact portions of said box.

3. In a contact-box of the class described,
5 a sealed vessel within said box, permanent electrical connections between a cavity within said vessel and the source of electric supply and between the cavity and the contact portion of the box, a fluid conductor within said
10 vessel and a solid conductor floating or immersed therein, said vessel being removably secured within the contact-box.

4. In a contact-box of the class described, a receptacle adapted to be removably secured
15 within the contact-box, said receptacle being sealed, a fluid conductor within said receptacle and in electrical circuit with the source of supply, a solid electrical conductor floating

or immersed in the liquid conductor, said solid conductor being adapted to be put in circuit with the contact portion of the contact-box.

5. In a contact-box of the class described, a receptacle having a cavity containing the switching mechanism, said cavity being sealed
25 and having electric conductors passing through its walls, said receptacle being fastened to a pedestal electrically connected to the supply-wire.

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

WILLIAM MILTON BROWN.

Witnesses:

K. C. HOXIE,
H. W. SMITH.

It is hereby certified that in Letters Patent No. 585,255, granted June 29, 1897, upon the application of William Milton Brown, of Johnstown, Pennsylvania, for an improvement in "Contact-Boxes for Electric Railways," an error appears in the printed specification requiring the following correction, viz: On page 1, line 42, the reference letter "I" should be CI; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 20th day of July, A. D. 1897.

[SEAL.]

WEBSTER DAVIS,
Assistant Secretary of the Interior.

Countersigned:

A. P. GREELEY,
Acting Commissioner of Patents.