

E. WILLARD.
Car-Replacers.

No. 154,572.

Patented Sept. 1, 1874.

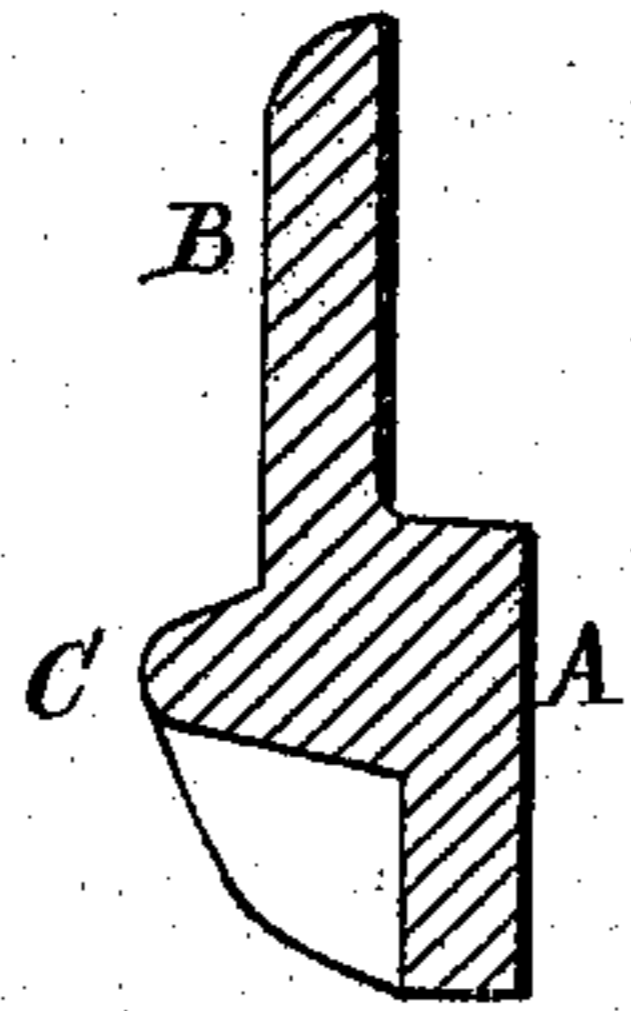


Fig. 4.

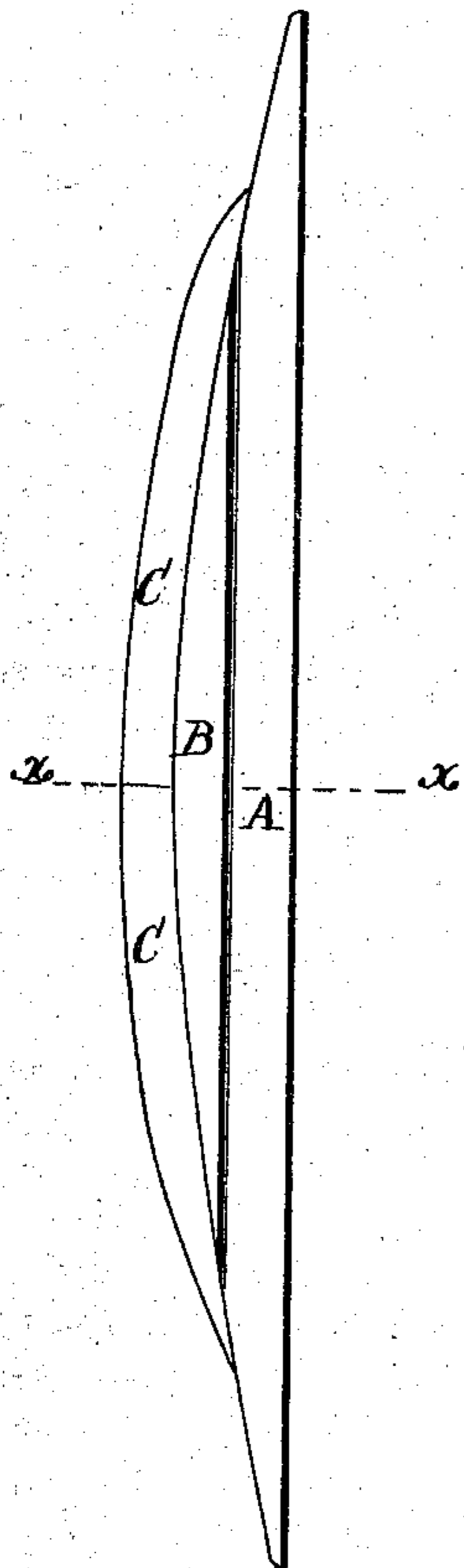


Fig. 3.

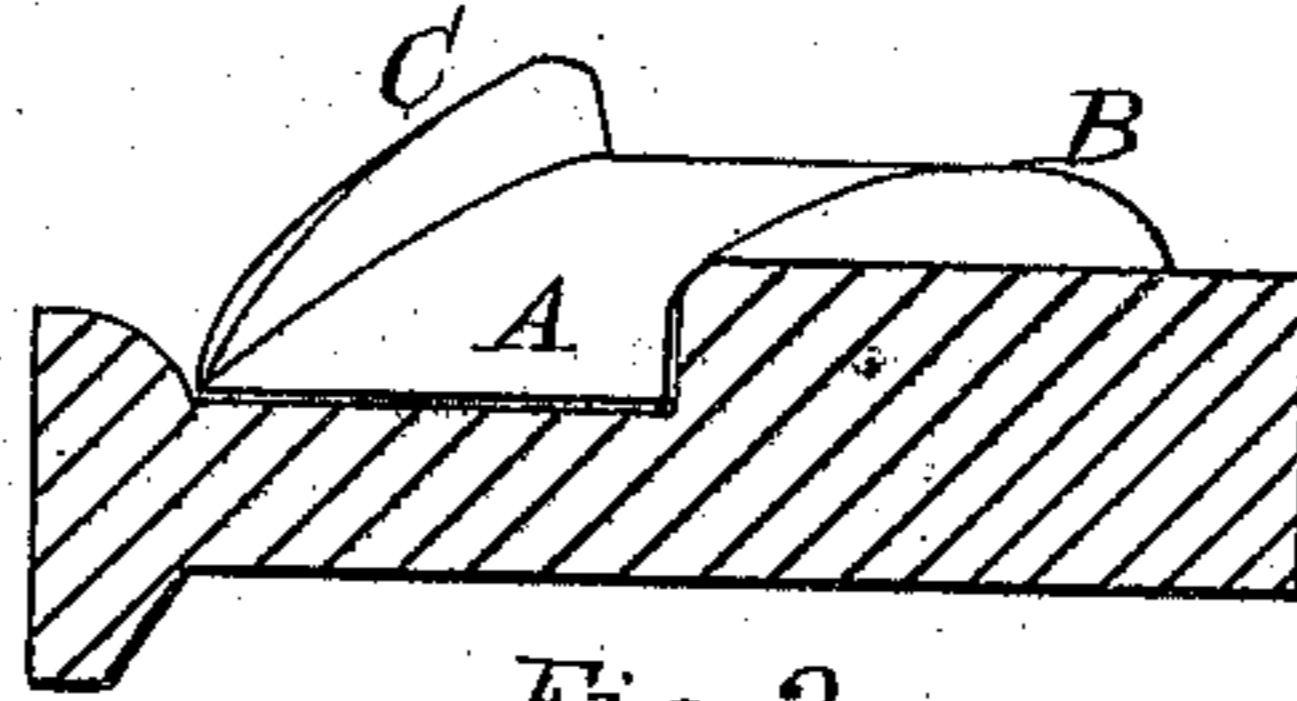


Fig. 2.

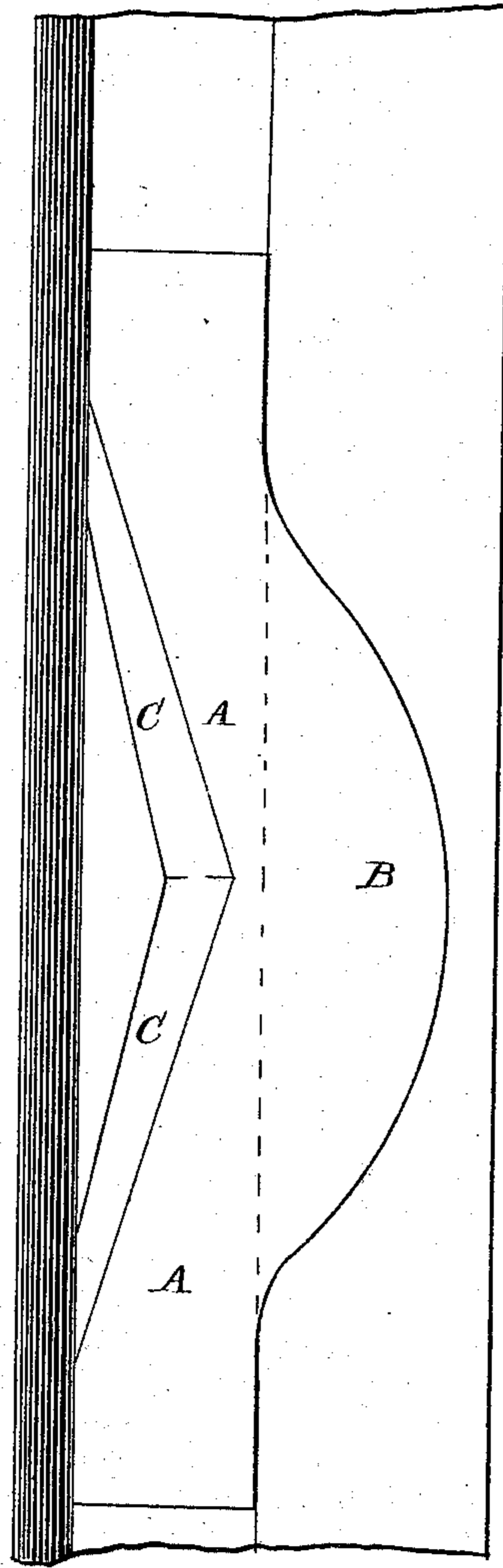


Fig. 1.

Witnesses.
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UNITED STATES PATENT OFFICE.

EPHRAIM WILLARD, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CAR-REPLACERS.

Specification forming part of Letters Patent No. **154,572**, dated September 1, 1874; application filed February 11, 1874.

To all whom it may concern:

Be it known that I, EPHRAIM WILLARD, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Portable Railway-Switch, of which the following, taken in connection with the accompanying drawings, is a specification:

In running cars upon street-railways it very often becomes necessary to run a car off from the track to pass around an obstruction that cannot be readily removed, and the want of a light, portable, and convenient implement always at hand, by the use of which the wheel may be raised, so as to bring the edge of the flange above the top of the rail, and at the same time direct the wheel obliquely across the rail, has been the occasion of a great amount of trouble and serious inconvenience to passengers, and a great deal of hard labor for the horses and the men in charge. The same or like difficulties often occur in getting the car onto the track when it has been accidentally or intentionally run off from the track.

To obviate or overcome these difficulties, and produce a light, portable, and convenient implement, which I term a "portable switch," and which may be applied to the rail of a street-railway, for the purpose of switching a car off from the track when desired, or for switching it on again when it has been thrown off either intentionally or accidentally, is the object of my invention.

My invention consists of a light metal shoe having a convex or double-inclined upper surface, and a bottom surface constructed to fit into the flat groove on the upper surface of the rail, above which rolls the flange of the car-wheel, said upper inclined surface rising from the level of the bottom of said flat groove in the rail, and from either end of said shoe toward its center, at which point it rises above the rail and projects over the tread thereof, and rests upon the same.

The upper surface of said shoe is also provided with a raised rib, extending in an oblique direction from the center toward either end thereof, in such a manner that the rib at or toward the ends of said shoe shall be inside of the flange of the wheel, while at the

center, or at the meeting point of the two oblique portions of said rib, it shall be at a point much nearer to or over the tread of the rail, and, by virtue of the obliquity of said rib, serve as a guide to direct the wheel across the rail as it rises to a level with or above the top of the tread portion thereof.

In the drawings, Figure 1 is a plan of my portable switch as seen applied to a rail of a street-railway. Fig. 2 is a transverse section of the rail, showing the portable switch in end elevation. Fig. 3 is an edge view of the portable switch removed from the rail, and Fig. 4 is a transverse section on line *x x* on Fig. 3.

A is the body of the switch, the upper surface of which is curved or inclined in opposite directions from its center toward either end, as shown. The body A is made of such a width and form as to fit into and fill widthwise the shallow groove formed in the upper side of the rail. The curved or inclined upper surface of the switch A rises from the bottom of said groove in the rail from either end of the switch toward its middle, at which point it rises above the level of the tread of the rail, and extends over and rests upon said tread in the form of a lip or flange, B. C is a raised rib projecting upward from the upper face of the switch, each half of said rib upon either side of the center of said switch being placed at an angle to the rail in opposite directions, the ends of said rib being so located as to be within the line of the movement of the flange of the wheel, while the central portion approaches to or nearly to the inner line of the tread of the rail.

This implement, made of cast-iron, from twelve to twenty inches in length, and weighing but a few pounds, placed on board of a street-car, would be of great service in running a car off from the track, or in replacing it on the track again, saving a great deal of valuable time, and very much relieving the burden of the horses that draw the cars at such times.

By virtue of its symmetrical form, both ends being alike, it may be applied to either rail, when the car is moving in either direction, or

upon the inside or the outside of the rail, as may be desired.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

A portable switch consisting of a body, A, having a curved or double-inclined upper surface, a projecting lip or flange, B, and a raised rib, C, upon said upper surface, arranged ob-

liquely thereon in two directions, substantially as described.

Executed at Boston, Massachusetts, this 6th day of February, 1874.

EPHRAIM WILLARD.

Witnesses:

WM. P. EDWARDS,

N. C. LOMBARD.