

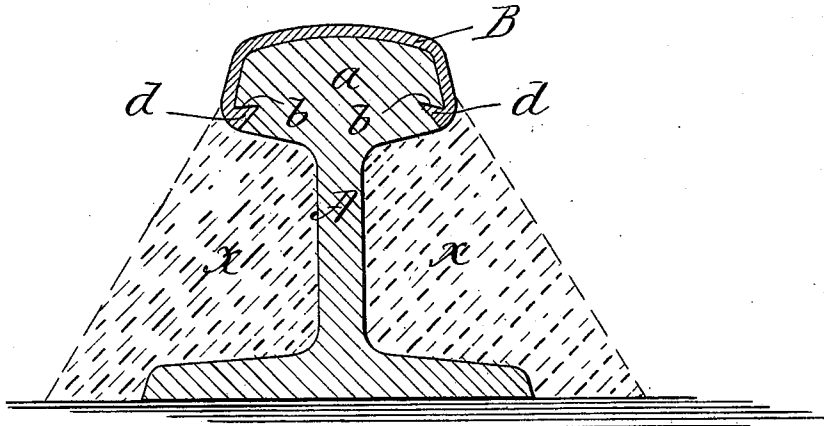
(No Model.)

L. E. WALKINS.

CURRENT CONDUCTING RAIL FOR ELECTRIC RAILWAYS.

No. 588,541.

Patented Aug. 17, 1897.



Witnesses:

M. A. Campbell
A. W. Smith

Louis E. Walkins,
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Attorney.

UNITED STATES PATENT OFFICE.

LOUIS E. WALKINS, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR OF THREE-FOURTHS TO FRANCKE W. DICKINSON, OF SAME PLACE, AND GEORGE M. JEWETT, OF GLENVILLE, MARYLAND.

CURRENT-CONDUCTING RAIL FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 588,541, dated August 17, 1897.

Application filed May 21, 1897. Serial No. 637,530. (No model.)

To all whom it may concern:

Be it known that I, LOUIS E. WALKINS, a citizen of the United States, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Current-Conducting Rails for Electric Railways, of which the following is a specification.

This invention relates to improvements in current-conducting rails for electric railways, the same being especially available in electric-railway systems known as the "third-rail" system—that is, a railway in which, in addition to the regular traction-rails, there is employed an additional or third rail for carrying the feed-current, a shoe or trolley running with a comparatively light pressure along this third rail, through which the current is conveyed therefrom to the electric motor of the motor-car or locomotive.

The object of this invention is to provide a current-conducting rail whereby it constitutes a more efficient electrical conductor than has heretofore been comprised in the third rail and one which insures less loss of electrical energy by induction than heretofore.

The invention consists in a current-conducting rail for electric-railway systems having a body of iron or steel, but preferably of soft cast-iron, and having its tread side covered with a layer of copper welded thereto.

In the accompanying drawing the improved current-conducting rail is illustrated, the figure being a cross-section thereof.

In the drawing, A represents the rail, which I prefer to have constituted of soft cast-iron, for the reasons that it is the cheapest of production, better adapted as a conductor, and sufficiently durable.

B represents the surface-covering of copper. In the figure this is shown as covering the top and sides of the tread portion *a* of the rail, the rail being shown as formed with the longitudinal grooves *b b*, in which inwardly-extending marginal ribs *d* of the copper cap have interlocking engagements.

The cap B may be produced by rolling or drawing in suitable lengths and of the required thickness and interlocked with the

surface of the rail-tread, and in addition to the interlocking it may be welded thereto.

The rail having the copper-covered top is well adapted for the running contact thereon of a sliding shoe or rolling trolley carried by the motor truck or car and which is in electrical connection with the motor.

The surfacing layer of copper on the top of the rail on which runs the shoe or trolley minimizes the friction between the contacting parts. The layer of copper, not rusting like iron or steel, affords no occasion for sparking between the shoe or trolley and the current-conducting rail, as occurs where the shoe runs on an iron rail which has become rusted. In practice the base and portion of the current-conducting rail below the tread are embedded in an insulating material, as indicated at *x*, the copper-cap covering and said insulating material serving to the better retain the current within the rail and assuring a lessened loss of power by induction.

It is to be understood that the shoe or trolley in running contact on this special current-conducting rail has no considerable forcible bearing-pressure or violent or destructive action upon the surfacing top of copper, such as car-wheels have upon the ordinary track-rails, and hence the auxiliary rail substantially as herein described will last in use a very long time.

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

1. A current-conducting rail for electric-railway systems having a body of iron or steel, and having its tread side covered with a layer of copper, welded thereto.

2. A current-conducting rail having the body thereof composed of iron or steel and provided with longitudinal grooves in the sides of its tread portion and a layer of copper covering the top of the tread portion and provided with projections engaged in said longitudinal grooves, substantially as described.

3. A current-conducting rail having the body thereof composed of iron or steel provided with the longitudinal grooves in oppo-

site sides of its tread portion and having a layer of copper covering the top of the tread portion and provided with projections engaged in said longitudinal grooves, said copper layer being also welded to the iron or steel body of the rail as described.

In testimony that I claim the foregoing as

my invention I have signed my name, in presence of two witnesses, this 19th day of May, 1897.

LOUIS E. WALKINS.

Witnesses:

WM. S. BELLOWS,
M. A. CAMPBELL.