

(No Model.)

2 Sheets—Sheet 1.

A. A. SHOBE & W. EMBLEY.
ELECTRIC RAILWAY.

No. 531,873.

Patented Jan. 1, 1895.

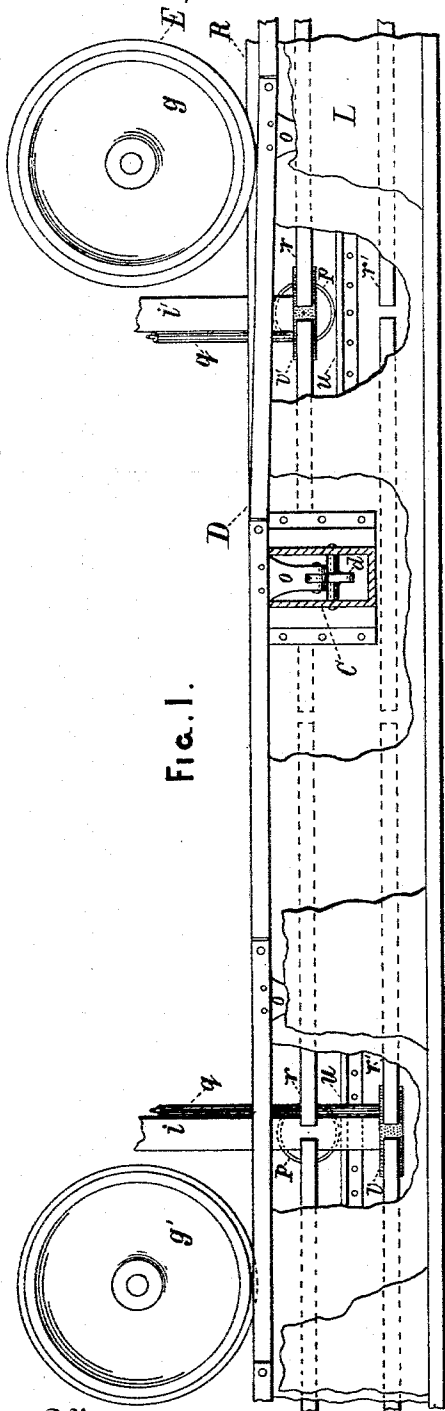


FIG. 1.

Witnesses

A. H. Newton.

R. Newton.

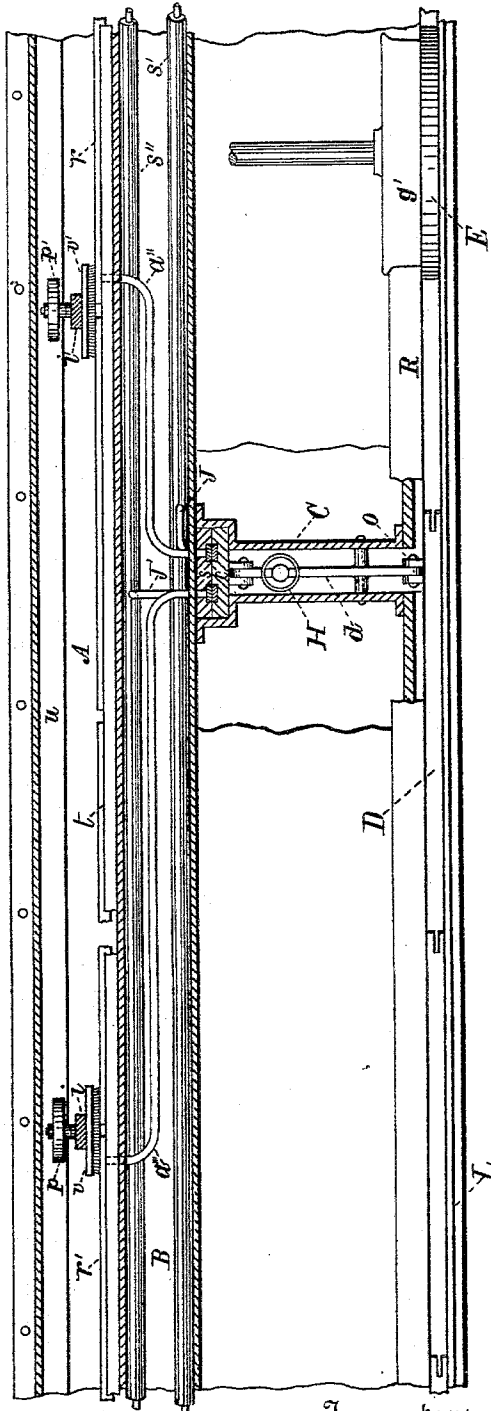


FIG. 2.

By their Attorney

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2 Sheets—Sheet 2.

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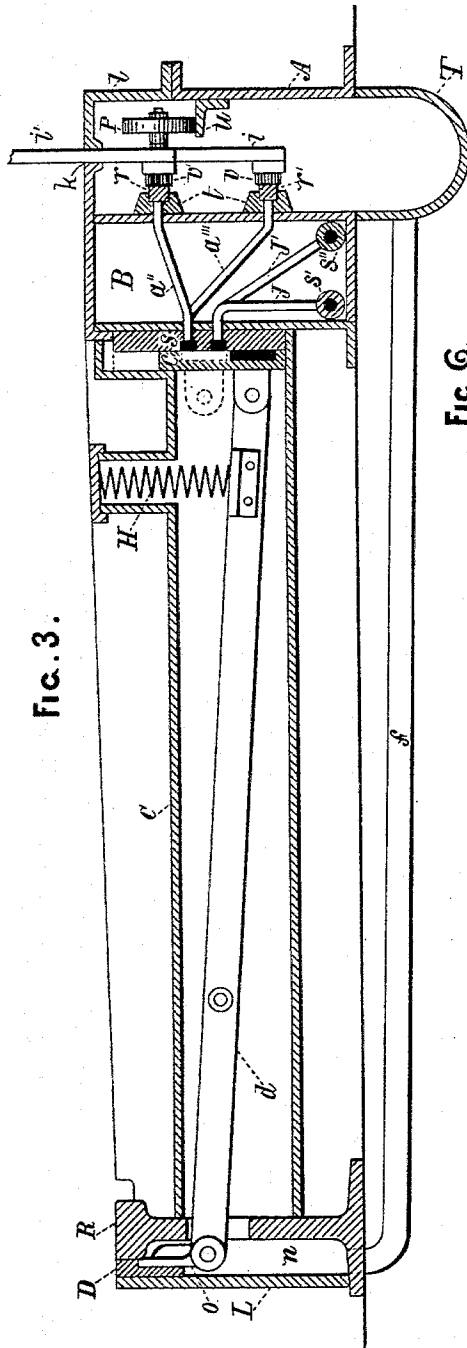


FIG. 3.

FIG. 6.

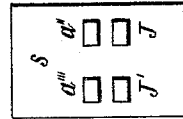


FIG. 5.

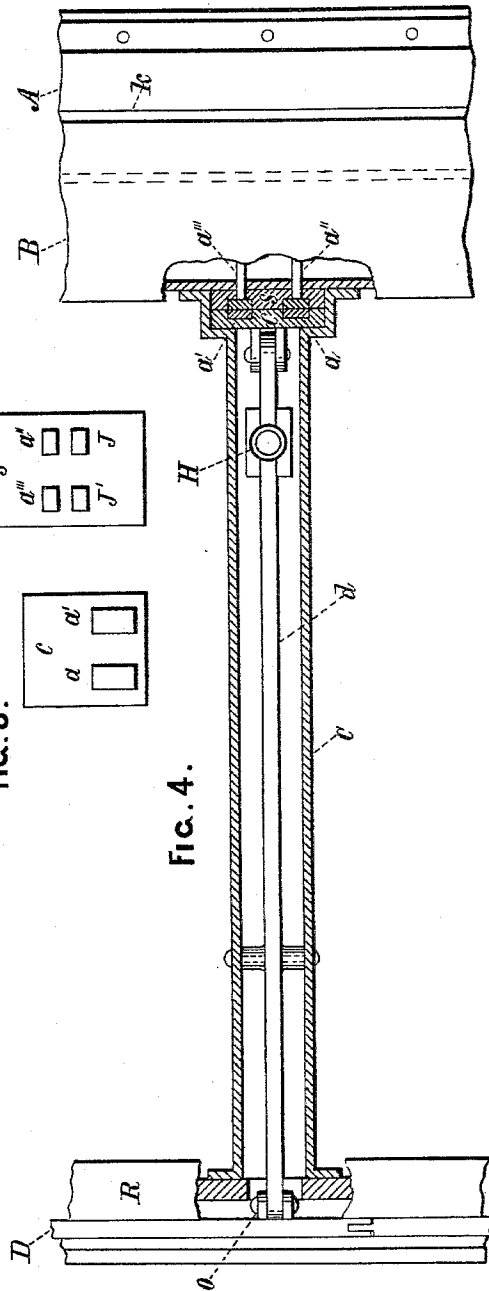
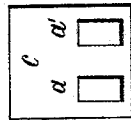


FIG. 4.

Witnesses

R. Newton.
A. W. Newton.

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By their Attorney J. S. Davenport.

UNITED STATES PATENT OFFICE.

ABRAHAM A. SHOBE AND WILLIAM EMBLEY, OF JERSEYVILLE, ILLINOIS.

ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 531,873, dated January 1, 1895.

Application filed July 24, 1894. Serial No. 518,493. (No model.)

To all whom it may concern:

Be it known that we, ABRAHAM A. SHOBE and WILLIAM EMBLEY, of Jerseyville, in the county of Jersey and State of Illinois, have invented a new and useful Improvement in Electric Railways; and we do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Our invention relates to an improvement in electric railways of that type in which the electricity is taken from the feed wire to the motor, through a series of separately insulated bars laid along the entire length of the track, and successively brought into circuit by the car as the latter passes over them.

Our object is to provide means for employing more economically than heretofore, the motive power, and to so perfectly insulate the feed and discharge wires, as to prevent the much-complained-of electrolytic corrosion of water and gas mains.

With these ends in view, our invention consists in certain details of construction and combinations of parts hereinafter fully described, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of the track, part of the web of the rail and of the several walls of the structure being represented as broken away to show the interior of the conduit and its contents. Fig. 2 is a plan view of the same, having the top of the conduit and also the top of one of the junction boxes removed to exhibit the contents. Fig. 3 is an enlarged transverse sectional view of the conduit, and a longitudinal sectional view of one of the junction boxes in connection with its actuating mechanism, and Fig. 4 is a plan view of the same, partly shown in section.

Referring to the drawings, A, represents the larger compartment of a bipartite conduit of which the smaller compartment is represented by B. To the wall of the latter are secured the inner ends of a series of junction boxes which are placed at suitable intervals throughout its entire length, one only, being represented in the drawings. Said boxes, it will be observed, are made of such length as to reach from the conduit to the web of the rail

R, and thus serve the double purpose of junction box and lateral brace between these two parts.

g, g' , represent respectively one of the front and one of the rear wheels of the car; the wheel g' being provided with a rim or flange E, adapted to act upon and depress successively, as it travels on the rail, the links or sections of the jointed bar D, each section of the latter being provided near the joint thereof, as shown in Figs. 1, 2 and 3, with a depending arm O, to the lower end of which is jointed a long lever d , fulcrumed in the sides of the junction box C, the forward end of said lever being jointed to a vertically sliding block c , of insulating material. (See Figs. 2, 3, and 4.) Let into the face of this block, as shown in the small subjoined views, Figs. 5 and 6, are two copper connecting bars a, a' , and similarly let into the face of a block S, of insulating material secured to the outer wall of compartment B, of the conduit, are four copper blocks a'', a''', J, J' , (see Fig. 5,) each being in metallic connection with one of the four correspondingly lettered connecting wires in the chamber B; the two connecting wires a'' , and a''' , Fig. 3, communicating respectively, the former with an insulated copper feed-bar r , and the latter with an insulated copper discharge bar r' , in contact with which are metallic brushes V, V', secured to arms i, i' , the latter depending from the truck-frame through the slot k , in the top of the conduit.

For the better guidance of the brushes V, V', the arms i, i' , are each provided with a small trolley-wheel p , adapted to travel upon a shelf U, secured to the inside of the outer wall of the conduit, as shown in Fig. 3.

Referring to the two lower copper blocks J, and J', which are let into the face of the block of insulating material S, it will be observed that they are in metallic communication with the main feed and discharge wires S', S'', through the insulated connecting wires J, J'; the wire J, with the feed wire S', and the wire J', with the discharge wire S'', all of said wires being contained within the closed compartment B, of the conduit. (See Figs. 3 and 6.)

The spiral spring H, shown in Fig. 3, is for the purpose of depressing the long arm of the lever d , after it has been raised by the pas-

sage of the car wheel over that part of the jointed bar D, with which it is connected.

In Fig. 1, q q' , represent two insulated connecting wires, the former leading from the feed brush V' to the motor, and the latter leading from the motor to the discharge brush V .

In Fig. 3, T , represents a drain tile adapted to receive the drainage of the conduit, and discharge the same into the ordinary street catch basins, or other suitable receptacles.

f , Fig. 3, represents a pipe for conveying the drainage from the chamber N , to the drain-tile T .

l , Fig. 3, represents a removable portion of the upper part of the conduit, so as to afford access to the interior.

Referring to the operation of the device, it will be noticed that as the car travels along the track, the flange E of the front wheel depresses successively each link of the jointed bar D , and raises the two metallic bars a , a' , in the face of the sliding block c , into the position shown in broken lines in Fig. 3; thus connecting together the copper blocks J and a'' , by the bar a , in the sliding block c , and simultaneously connecting together the copper blocks J' and a''' , by the bar a' , thus successively bringing into circuit a feed and discharge bar r , r' , as each junction box is passed over by the flange E , of the car wheel.

Bearing in mind that the small copper blocks in the face of the fixed insulating block S , are the terminals of the connecting wires designated by similar letters of reference, it will be readily seen that when the sliding block c is raised, electric connection is made between the feed wire S' and the feed brush V' , and at the same time between the discharge brush V and the discharge wire S'' .

The discharge brush, it will be observed, is placed at least the length of two bars r , to the rear of the feed brush, so that the discharge bar shall not be directly beneath the feed bar, thus avoiding, to a great extent, the inductive influence of one upon the other.

It will be noted that, by the arrangement of the details above described, both the feed and the connecting wires are confined in a perfectly closed part of the conduit; thus af-

fording the best of protection against damage and leakage.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an electric railway, the combination with junction boxes each of which comprises a lever fulcrumed in the sides of an inclosing chamber, said lever having jointed to one end thereof a vertical arm O , and to the opposite end a vertically sliding block c , of insulating material having in the face thereof bars adapted, when the said sliding block is actuated, to alternately close and open the electric circuit, of a jointed bar supported upon the upper ends of the arms O , and located in a slot by the side of the rail, said jointed bar adapted to be depressed by a flange provided for that purpose on one of the car wheels, as the latter passes over it, so as to actuate the mechanism in the junction boxes, substantially as set forth.

2. In connection with an electric railway, junction boxes comprising a lever fulcrumed in the sides of an inclosing box or chamber, one end of said lever being connected by an arm O , with a jointed bar D , adapted to be depressed by a flange on one of the car wheels, the opposite end adapted to be depressed by a spring H , and connected with a vertically sliding block of insulating material having in the face thereof two copper bars, adapted, when the said sliding block is raised, to electrically connect two upper contact plates a'' and a''' , with two lower ones J and J' which are let into the face of a fixed block of insulating material, so that when the jointed bar D , is actuated by the flange upon the car wheel, it will connect and disconnect the electric terminals, and thus alternately close and open the electric circuit as the car travels along the track, substantially as set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 6th day of July, A. D. 1894.

ABRAHAM A. SHOBE.
WILLIAM EMBLEY.

Witnesses:

WM. G. NALLEY,
W. T. SPENCER.