No. 710,072. Patented Sept. 30, 1902.

W. B. POTTER.

ELECTRIC RAILWAY SYSTEM.

(Application filed Feb. 28, 1901.)

(No Model.)

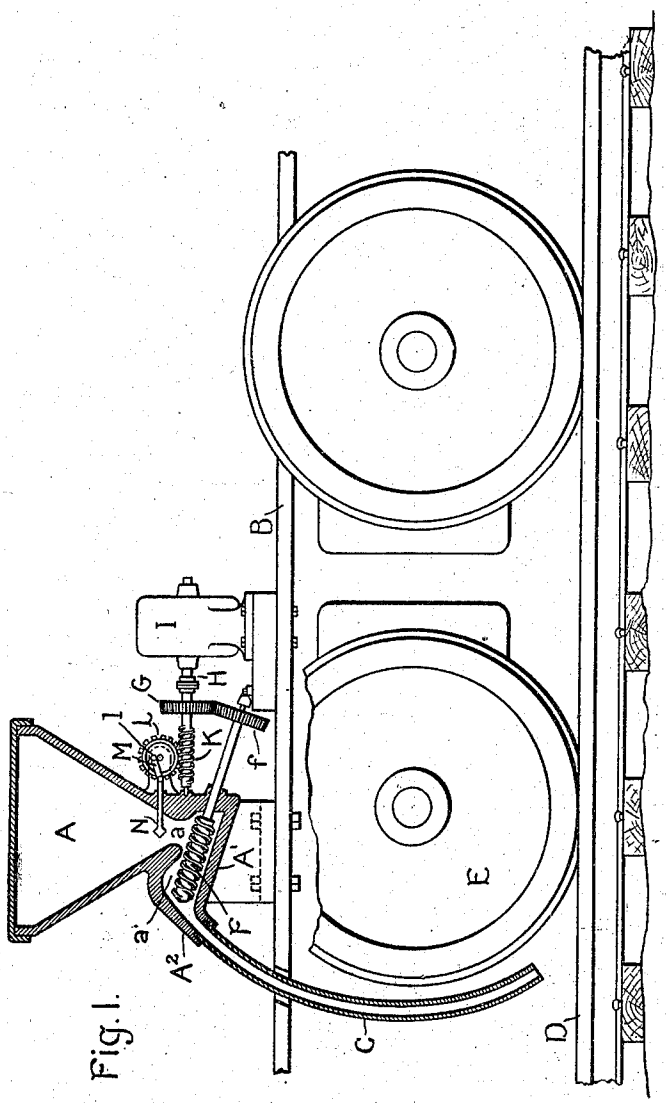


Fig. 1.

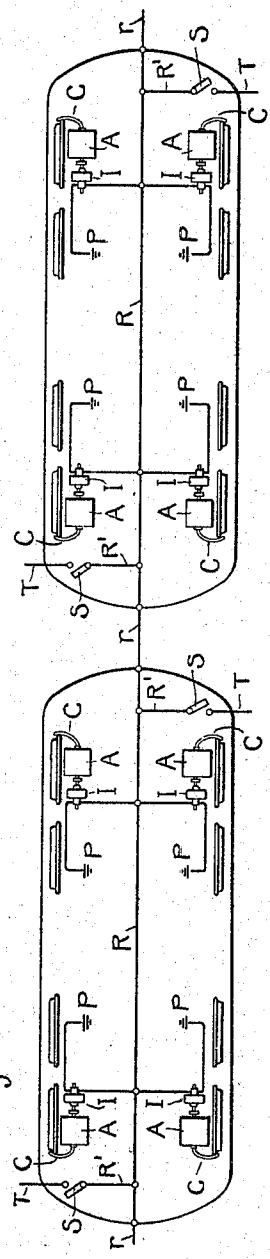


Fig. 2.

Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM B. POTTER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ELECTRIC-RAILWAY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 710,072, dated September 30, 1902.

Application filed February 28, 1901. Serial No. 49,217. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. POTTER, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Electric-Railway Systems, (Case No. 1,646,) of which the following is a specification.

This invention relates to electric railways; and its object is to provide an electric-railway car or train with sanding devices actuated by electric motors under the control of the motorman. The sand-boxes ordinarily provided on electric cars are not always reliable, for the reason that the sand is liable to choke in the delivery-spout or become caked in the box, so that when the valve is opened the sand does not flow out. This necessitates opening the box, stirring up the sand, and poking a stick or wire down the spout to start the delivery, all of which is decidedly annoying and may cause serious loss of time.

My invention comprises agitating and feeding devices applied to the sand-boxes and driven by suitable means under control of the motorman, so that the delivery of the sand will be positive and reliable. I prefer to use for the operating device a small electric motor, and when several sand-boxes are used on a car or two or more cars are coupled into a train the several motors are electrically connected to a common supply system, preferably in multiple, so that by closing a single switch all the sanding devices may be operated simultaneously.

In the accompanying drawings, Figure 1 is a sectional side elevation of my improved sanding device. Fig. 2 is a diagram showing the electrical connections for the sanding devices on a train of two cars.

The sand box or hopper A is secured to the floor B of the car, preferably above the same and adjacent to the wheels of the truck. The sides of the box converge at the bottom to a delivery-opening *a*, communicating with a delivery-conduit, the first portion of which is a chamber *a'* in the base A' of the box. The chamber runs transverse to the opening *a* and constitutes a reversely-bent portion, being preferably inclined upward at such an angle that the sand will not run through of itself. From the upper end of the chamber proceeds a downwardly-extending spout A^2, communicating with a delivery-pipe C, which terminates an inch or two above the rail D in front of the wheel E. In the chamber *a'* is housed a device for giving a positive feed to the sand, preferably a screw conveyer F, the shaft of which extends at one end out through the side of the base A' and is provided with means for rotating it, such as a gear-wheel *f*, meshing into a pinion G on the shaft H of an electric motor I. The shaft H also carries a worm K, driving a worm-gear L, on which is a crank *l*, connected by a rod M with a reciprocating agitator N, projecting across the hopper above the delivery-opening *a*.

It will be readily understood that when the motor is supplied with current it will reciprocate the agitator and revolve the conveyer, thereby delivering sand from the box to the pipe C.

I do not limit myself to the specific mechanism shown and described, since it is evident that there are many ways in which an electromagnetic motive-power device can be made to impart a positive feed to the sand. I have chosen the mechanism shown merely because it exemplifies a simple, efficient, and reliable mode of carrying my invention into effect.

Each car is provided with one or more sanding devices on each side, and in order to enable the motorman to operate them at will all of the motors are connected to a common supply system comprising, as shown, a single supply-conductor R, running through the car, to which one of the terminals of each motor is connected, and a common ground connection for the other terminals. The conductor R is provided at each end with flexible coupling-cables *r*, by which it can be joined to the corresponding conductor on an adjacent car of the train. At each end of the car a branch conductor R', containing a switch S, runs to a trolley connection T. By simply closing one of the switches the motorman can start all the sanding devices.

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

1. The combination with an electric-railway

car, of a sanding device comprising a rotatable conveyer, a rotating electric motor connected therewith, and means whereby the motorman can start and stop said motor at will.

2. The combination with an electric-railway car, of two or more sanding devices each comprising a rotatable conveyer, a rotating electric motor for each, and circuit connections whereby the motorman can start and stop said motors at will.

3. The combination with an electric-railway car, of two or more sanding devices each provided with an electromagnetic operating mechanism, and circuits connecting said mechanisms in multiple.

4. The combination with one or more electric-railway cars, of two or more sanding devices on each car, a rotating electric motor for operating each device, and means for simultaneously connecting said motors in multiple.

5. In combination, a plurality of cars united to form a train, sand-boxes on some or all of said cars, electric motors controlling the delivery of sand therefrom, a train-conductor to which said motors are connected, a source of current-supply, and means located at several desired points on the train for connecting said conductor to said source of supply.

In witness whereof I have hereunto set my hand this 25th day of February, 1901.

WILLIAM B. POTTER.

Witnesses:
BENJAMIN B. HULL,
EDWARD WILLIAMS, Jr.