(No Model.)

H. M. MONTGOMERY.

ELECTRIC RAILWAY.

No. 546,546. Patented Sept. 17, 1895.

Fig. 1

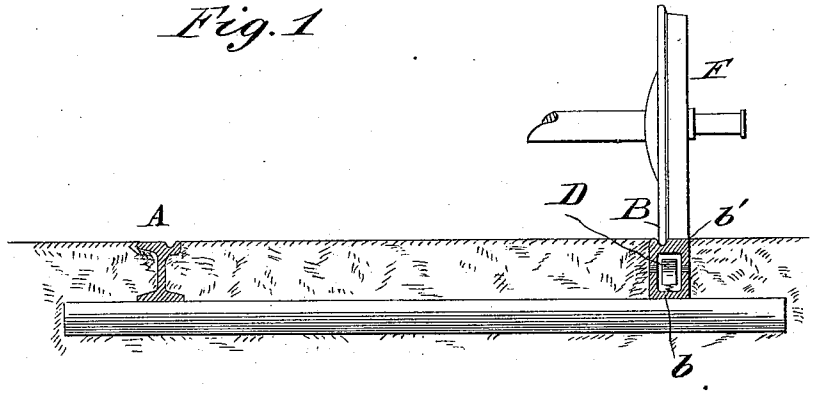
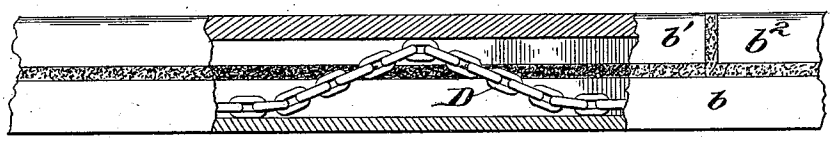


Fig. 2



Witnesses

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UNITED STATES PATENT OFFICE.

HARRY MORTIMER MONTGOMERY, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO LEON DION, OF BOSTON, MASSACHUSETTS.

ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 546,546, dated September 17, 1895.

Application filed June 14, 1892. Serial No. 436,696. (No model.)

To all whom it may concern:

Be it known that I, HARRY MORTIMER MONTGOMERY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Electric Railways; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to electric railways, and its object is to avoid the use of a constantly-charged exposed conductor for carrying the current from a power-house along the line of the road.

The disadvantages and dangers incident to a bare wire conveying a heavy current are well known, and many attempts have been made to do without it. A slotted conduit prevents the conductor from accidentally coming in contact with a person or animal; but it is expensive to build, and up to the present time has not reached a degree of excellence sufficient to cause its general adoption.

My invention consists in a closed conduit whose upper exposed portion is insulated from the supply-conductor, but is automatically placed in connection therewith by the passing vehicle, the current being then taken to the motor by suitable contact devices. The conduit forms one of the running-rails of the track. The lower portion of the conduit may constitute the supply-conductor or said conductor may be laid in the conduit and insulated therefrom or not as found best. When a separate insulated supply-conductor is used the upper portion of the conduit need not be insulated from the lower portion, and in fact may be integral therewith. The contact device may be any of those heretofore employed; but I prefer to utilize a wheel of the vehicle for that purpose.

In the drawings, Figure 1 is a cross-section of a railway-track embodying my invention. Fig. 2 is a sectional longitudinal elevation of a portion of the conduit on an enlarged scale.

One rail A of the track may be of the usual construction. The other rail B constitutes a combined supply and working conductor. It is preferably a shallow metallic box resting on the cross-ties C and having its upper surface grooved or otherwise formed to serve as a rail. The lower portion *b* is electrically continuous and constitutes the supply-conductor. The upper portion is divided into short sections $b' b^2$, insulated from each other and from the lower portion *b*, and forming a series of working conductors. The length of these sections may be such as the conditions of service shall require; but they are preferably about that of a railroad-rail, so that the exposed charged portion of the track shall be as short as possible.

Inside the conduit B is an auxiliary conductor D, adapted to automatically connect the supply-conductor with the working conductor when a vehicle travels over said working conductor. This auxiliary conductor normally lies upon and in electrical contact with the supply-conductor, but is free to move vertically, so as to come in contact with the upper portion of the conduit, and thus electrically connect it with the lower portion.

The auxiliary conductor is a chain. (Shown in Fig. 2.) The auxiliary conductor is composed of magnetic material, and upon the vehicle is mounted a suitable magnet arranged to be carried in proximity to the upper surface of the conduit. The magnet must be of sufficient strength to lift that portion of the auxiliary conductor situated immediately under it into contact with the working conductor, thereby establishing electrical connection between the supply-conductor and the working conductor at that point, and inasmuch as the auxiliary conductor is flexible this point of contact changes with the movement of the vehicle. Consequently that section of the working conductor over which the vehicle is passing is the only one in electrical connection with the supply-conductor.

If desired, one of the truck-wheels of the vehicle may be magnetized for the purpose of lifting the auxiliary conductor, and this wheel may also be utilized to convey the current to the motor.

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

1. In an electrical railway, the combination with a continuous supply conductor, of a sectional working conductor, and an intermediate auxiliary conductor formed of a continuous series of similar magnetic parts interlinked and in electrical contact with each other for connecting the supply conductor with the sections of the working conductor, substantially as described.

2. In an electrical railway, a closed conduit consisting of an electrically continuous lower portion, and a sectional upper portion, said sections being insulated from each other and from the lower portion, and an auxiliary conductor composed of a continuous series of similar interlinked members of magnetic material inclosed in said conduit, for the purpose of establishing electrical connection between said lower and upper portions, substantially as described.

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

HARRY MORTIMER MONTGOMERY.

Witnesses:
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