

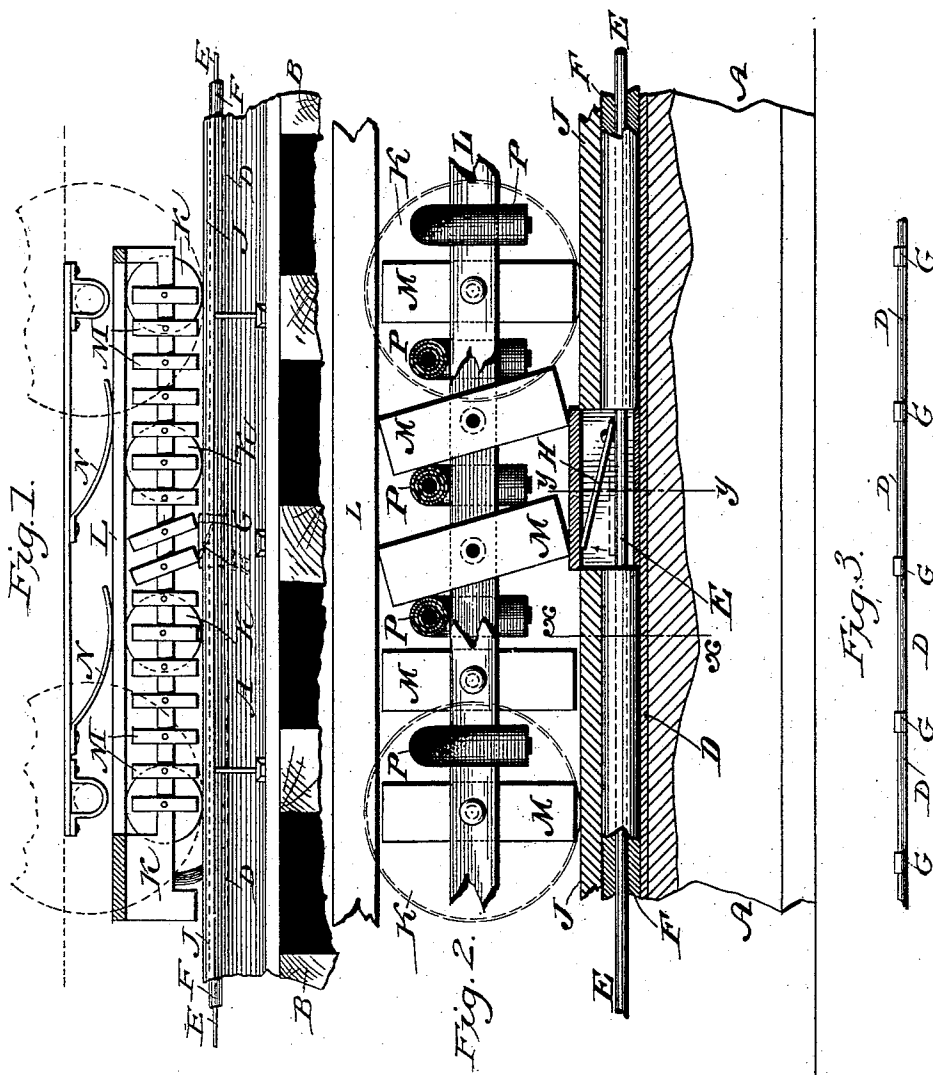
(No Model.)

2 Sheets—Sheet 1.

A. GORTON.
ELECTRIC RAILWAY.

No. 569,331.

Patented Oct. 13, 1896.



WITNESSES:

L. Douville,
Robt. Niton

INVENTOR

Adel Gorton
BY *John A. Johnson*
ATTORNEY.

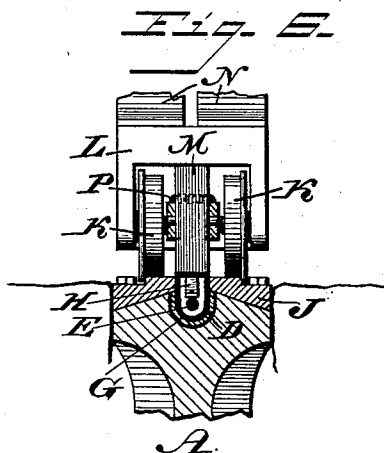
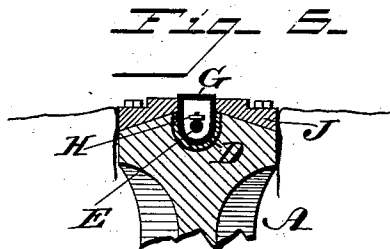
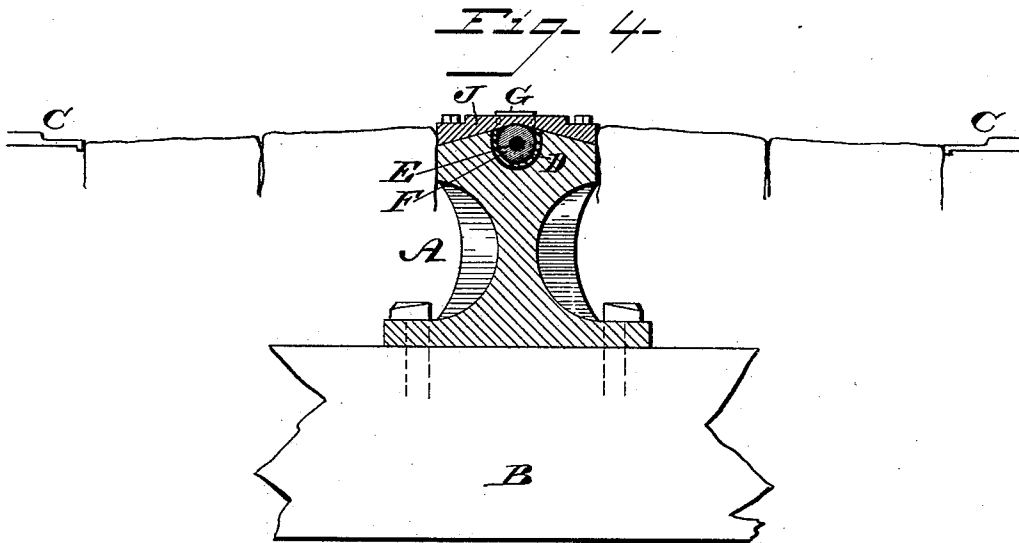
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2 Sheets—Sheet 2.

A. GORTON.
ELECTRIC RAILWAY.

No. 569,331.

Patented Oct. 13, 1896.



WITNESSES:

L. Douville,
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INVENTOR

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UNITED STATES PATENT OFFICE.

ADELOS GORTON, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 569,331, dated October 13, 1896.

Application filed December 31, 1890. Renewed May 11, 1894. Serial No. 510,929. (No model.)

To all whom it may concern:

Be it known that I, ADELOS GORTON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Electric Railways, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in electric railways, and has for its object the complete insulating of the electric wire of the circuit from exposure to the atmosphere or contact with any foreign substance, so as to thereby prevent any leakage of or danger of contact with the current.

For this purpose it consists, first, of a wire completely insulated and provided with transmitters normally insulated from contact with, but adapted by magnetic influence to electrically connect with, an electrical gatherer attached to the car carrying the motor.

It further consists of a gatherer formed of a holder provided with a series of brushes adapted to be electrically connected with the transmitters, as hereinafter described.

It further consists of the combination of parts hereinafter set forth.

Figure 1 represents a side view of a device embodying my improvements. Fig. 2 represents a partly side and partly longitudinal sectional view of a portion of the device shown in Fig. 1. Fig. 3 represents a side view, on a reduced scale, of a portion of the wire with its casing and sleeves. Fig. 4 represents a vertical section on line *xx*, Fig. 2, on a reduced scale. Fig. 5 represents a vertical section on line *yy*, Fig. 2, on a reduced scale, and the transmitters being in inoperative position. Fig. 6 represents a section on line *yy*, Fig. 2, on a reduced scale, the transmitters being raised and the electrical gatherer being shown.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a chair composed of suitable material and firmly secured to the cross-ties B, on which a car travels. The upper face of said chair has a longitudinal recess forming the conduit D for the electric wire or cable E, the said wire being covered with non-conducting and waterproof material F, so as to be completely insu-

lated and separated from liability of contact with any substance whereby any leakage of the electric current may happen. At distant points or intervals the covering of the wire consists of the sleeves G, having portions thereof of electric conducting material. The wire therein, which is free from contact with the said sleeves, has the electric metallic strips H, forming transmitters, connected therewith, the said transmitters being of such length that their free ends, which are normally removed from contact with the sleeves, must be raised to be in contact with the inner wall thereof.

J designates a cover for the conduit, said cover being secured to the top of the chair A and having its upper face forming a rail for the wheels K of a holder L, which carries the brushes M. The said brushes are without any electric connections except when their lower ends, by making the supply-contact with the sleeve G during the travel of the car, are pushed or pulled into motor-contact with motor-terminals upon the holder, which is attached to the car by the arm N. With the holder are the magnets P, adapted when over the sleeve G to operate the transmitters H, so as to cause their free ends to contact with the sleeves. A series of magnets retain the transmitters in contact with the sleeve until the car has passed.

The holder L is electrically connected with a motor on the car, as is usual in electric railways, and the brushes of the series thereof are so placed that before one brush has ceased to be in contact with a sleeve the following adjacent brush has contacted with the said sleeve, so that the current remains unbroken during the passage of the car over the sleeve, and the sleeves are so located that the brushes do not leave contact with one sleeve before they begin to contact with the succeeding sleeve, whereby a continuous electric current is maintained during the travel of the holder on the track.

It will be seen that the electric wire or cable is normally electrically insulated and also protected from moisture by its surroundings, so that the current has no conductors therefor except at the sleeves, and to them only by the transmitters, and from thence by the brushes to the motor. The said brushes and

holder with magnets form an electric gatherer by which the current of electricity is uniformly and continuously carried from the wire to the motor.

5 In what is known as the "multiple" system either a parallel duplicate supply-wire and apparatus or the car-track is used for the negative or returning current.

10 The apparatus can either be operated with the current-gatherer above the road-bed, as illustrated, or the whole can be placed in a conduit.

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

1. In an electric railway, a chair with a longitudinal recess, a metal sleeve in said recess, a section of an electric wire in said sleeve and insulated therefrom, transmitters connected 20 with said wire, magnets operating said transmitters and a cover for said recess forming a guide for the current-gatherer, substantially as described.

2. In an electric railway, a chair with a longitudinal recess containing a metal sleeve enclosing a section of an electric wire insulated therefrom, and provided with transmitters, magnetically operated to connect and form the electric circuit, with a cover forming a 30 guide-rail for the current-gatherer, substantially as described.

3. In an electric railway, a holder normally in an electric circuit, swinging brushes carried by said holder and normally electrically

insulated therefrom but adapted to contact therewith, and magnets carried by said holder, said parts being combined substantially as described. 35

4. In an electric railway, a chair with a longitudinal recess, a metal sleeve in said recess, a section of an electric wire in said sleeve and insulated therefrom, transmitters connected with said wire, a holder having magnets operating said transmitters, and a cover for said recess forming a guide for the current-gatherer, substantially as described. 40 45

5. In an electric railway, a chair with a longitudinal recess containing a metal sleeve enclosing a section of an electric wire insulated therefrom, and provided with transmitters magnetically operated to connect with the sleeve when the brush is upon it, and form the current-circuit, with a cover forming a guide-rail for the current-gatherer, substantially as described. 50 55

6. In an electric railway, a current-gatherer having brushes normally without any electric connections and insulated from one another, adapted to be forced into motor-contact when making supply-contact, as described. 60

7. In an electric railway, a current-gatherer, having brushes normally without any electric connections, and insulated from one another.

ADELOS GORTON.

Witnesses:

JOHN A. WIEDERSHEIM,
A. P. JENNINGS.