

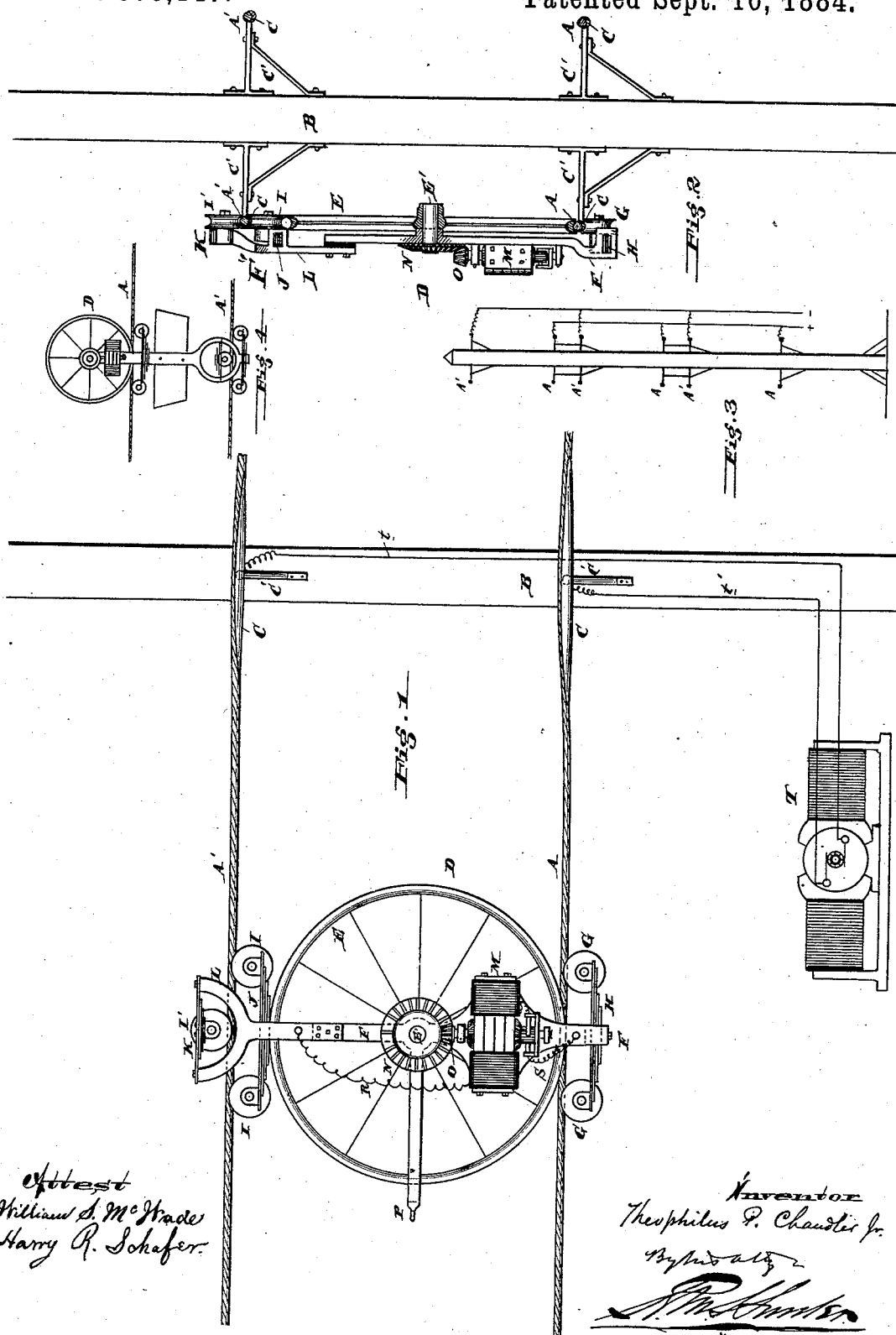
(No Model.)

T. P. CHANDLER, Jr.

ELECTRIC RAILROAD.

No. 305,147.

Patented Sept. 16, 1884.



Attest  
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# UNITED STATES PATENT OFFICE.

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## ELECTRIC RAILROAD.

SPECIFICATION forming part of Letters Patent No. 305,147, dated September 16, 1884.

Application filed March 24, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, THEOPHILUS P. CHANDLER, Jr., of the city and county of Philadelphia, State of Pennsylvania, have invented an Improvement in Electric Railroads, of which the following is a specification.

My invention has reference to railways in general, but more particularly to those employing electricity as the motive power; and it consists in certain improvements fully set forth in the following specification and shown in the accompanying drawings, which form part thereof.

The object of my invention is to provide a simple, cheap, and durable construction adapted to railway purposes, especially for the conveyance of the mails and small merchandise in large cities or between adjacent cities.

In the drawings, Figure 1 is a side elevation of my improved railway and its electric motor. Fig. 2 is a cross-sectional elevation of same on line *xx* of Fig. 1. Fig. 3 is a sectional elevation of the railway, showing how a large number of tracks are arranged one above the other, and Fig. 4 is a side elevation of a modified form of car or motor.

A is the lower rail, upon which the motor and car run, and may be made of metal bars or wire rope, as shown, and is supported at intervals by brackets C', which are secured to upright posts B. When wire rope is used, to prevent a sharp curve at the point of support, I provide the long trough-shaped supports C, which are secured to the brackets C', and to which the wire rope is secured.

A' is the guide-rail, and may be made similar to rail A in all material respects.

When used as an electric railway, the positive current from the electric generator or dynamo-electric machine T is conveyed by wire *t'* to the rail or wire rope A, and the negative current by wire *t* to rail or wire rope A', as shown.

The motor D is constructed as follows:

It has a large drive-wheel, and has a grooved flange which runs upon the rail A.

E is the wheel-shaft, and is journaled in the frame F, and its outer end is provided with a large bevel-gear, N, with which meshes the pinion O, secured on the end of the arma-

ture-shaft of the electric motor M, which is secured to and is carried by said frame F.

To prevent the wheel E from leaving the rail A, I place below the same two small grooved wheels, G G, which are secured to the frame F by a spring, H. This arrangement, while it prevents the wheel E from jumping the track, also increases the traction of said wheel upon the rail and enables it to pull heavy loads. The positive current is conveyed from the rail A through wheels E and G to frame F, and from said frame to the motor M by a wire, S.

To prevent the motor D as an entirety falling over to one side, I provide the three wheels I I I' to run upon the guide-rail A, and said wheels I are secured to the frame L by springs J, and wheel I' by spring K, so that when running over any obstruction or enlargement, as at joints or the supports C, the said wheels I may separate from wheel I'. This same effect takes place with the wheels E and G G on the lower rail, A. The frame L is insulated from frame F, but is carried thereby, and the negative current passes from rail A', through wheels I I', frame L, and wire R, to the motor M.

It is evident that two sets of wheels might be coupled together to form a car, if desired.

While I have shown the rail A' above the wheel E, it is evident that it might be much lower, as at one side, or below it, as shown in Fig. 4; but I prefer to place it above, as an increased leverage is obtained, which insures its more ready guidance, and, again, the arrangement of the driving-wheel E between the rails A A' facilitates switching from one track to another.

While I prefer the construction shown, I do not limit myself thereto, as it may be modified in various ways without departing from my invention.

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

1. The rails A A', made of wire rope, and supported at different levels above the ground, in combination with an electric generator, wires connecting the positive and negative currents of said generator with said rails, re-

spectively, and an electric car or motor arranged to run upon said rails and receive its electric current therefrom, substantially as and for the purpose specified.

5 2. The combination of rails A A' and car D, consisting of wheel E, frame F F', and wheels G, I, and I', substantially as and for the purpose specified.

10 3. The combination of rails A A' and car D, consisting of wheel E, frame F F', wheels G, I, and I', and springs H, J, and K, substantially as and for the purpose specified.

4. The combination of electric conducting-rails A A' and car D, consisting of wheel E, frame F F', wheels G, I, and I', electric motor 15 M, and gearing connecting said motor with said wheel E, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

THEOPHILUS P. CHANDLER, JR.

Witnesses:

ISAIAH MATLACK,

WILLIAM S. MCWADE.