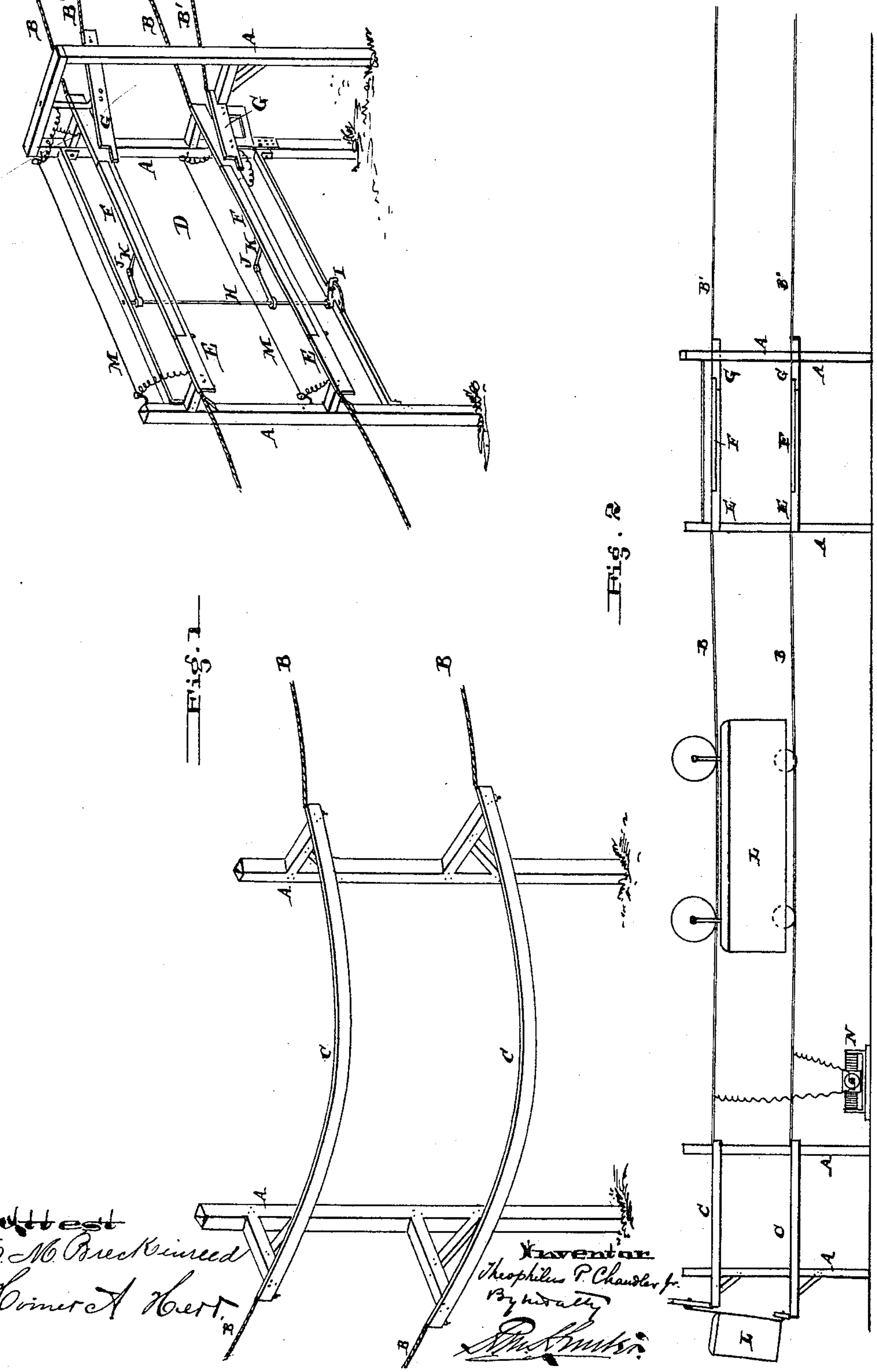
(No Model.)

T. P. CHANDLER, Jr.

ELECTRIC OR OTHER RAILWAY.

No. 346,465. Patented Aug. 3, 1886.



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UNITED STATES PATENT OFFICE.

THEOPHILUS P. CHANDLER, JR., OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC OR OTHER RAILWAY.

SPECIFICATION forming part of Letters Patent No. 346,465, dated August 3, 1886.

Application filed June 22, 1885. Serial No. 169,347. (No model.)

To all whom it may concern:

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

My invention has reference to railways, particularly those employing electricity as a motive power; and it consists in certain improvements on Letters Patent granted to me September 16, 1884, No. 305,147, for an improvement in electric railways, all of which is fully set forth in the following specification and shown in the accompanying drawings, which form part thereof.

This invention principally consists in providing solid sections interposed in the supporting and guide rails of flexible material—such as wire cables—which solid sections are used to guide the cars around the corners and curves, and to provide suitable supporting-bearings for switches. The cables are arranged, one above the other, at different levels from the ground; and in going around quick curves, such as would be used in cities in passing around street-corners, one of the solid sections would be of greater radius than the other, so that the action of centrifugal force on the car will be counteracted and prevent any possibility of the car leaving the tracks in running at high speeds. In the case of branch tracks or sidings a switch-section will have to be interposed in each of the lines, which switch-section is provided with a pivoted switch-rail, which may be thrown in line with the branch track or the main line, and in practice there would be generally two of said switches and their sections, one for each of the rails, which switches may be simultaneously operated by suitable lever mechanism. The electricity in the case of the switch-sections may be conveyed over the breaks between the main line and the branch line by suitable conductors.

In the drawings, Figure 1 is a perspective view of a railway embodying my improvements, and Fig. 2 is an elevation of same.

A are the posts upon which the rails are supported at different levels from the ground, and B B are the main-line cables or rails, which rails are supported upon brackets secured to said posts either in the manner set forth in patent hereinbefore referred to, or with the take-up devices, such as set forth in my application filed May 20, 1885, and Serial No. 166,080.

C C are the two solid curved rail-sections, and are supported upon suitable posts, of which there may be any number desired, and their ends are secured to the flexible conductors or rails B B, so that a car, L, in running over the rails C C may run upon the flexible sections B B without any apparent jarring, and vice versa, and as centrifugal force would tend to throw the car outward in passing around quick curves when the speed of the car was great it becomes necessary to locate one of said curved rail-sections C C farther away from the posts or make it of greater radius, so that the car will be tipped on an incline, and will hang in an oblique line from the supporting-wheels, or, in case the supporting-wheels are below, the car will rest bodily upon the lower rail.

The rails B are preferably formed of wire cables, but may be of any suitable flexible material—for instance, in the case of small railways for packages and mail deliveries, single wires or rods may be used—and the sections C are preferably formed of steel plates set on edge, and may, if desired, be suitably braced.

D represents the switch-sections, and consists of the rigid supports E for the main rails B, and G for the branch rails B′, and to the sections E are hinged the switches F, and so arranged that they may be swung from sections E over to sections G, so as to switch the car from the main to the branch track, or vice versa, and in practice it would be convenient to have both the switches F move simultaneously, and to do this a rock-shaft, H, having cranks J may be used, which cranks connect by links K with the switches F, and said rock-shaft may be rocked and set in position by crank I, working over a segment, and provided with suitable locking mechanism. The sections G and E in the upper rails must be separated from each other, so as to allow the vertical supports from the car-body, and to which the supporting-wheels are secured, to pass between the said

sections when the car passes on down the main line. If desired, the switches F may entirely sever the sections E, though that is hardly necessary, excepting in crossing tracks.

In the case of electric roads the current is fed from a dynamo-electric machine, N, by suitable conductors to the rails B B, one of which acts as a positive conductor, and the other of which acts as a negative conductor, the motor being carried on the car L, and receiving its electricity through contact with the wheels which support and guide the car on rail-conductors. In crossing to a branch road, B′, the electricity may be conveyed from section E to section G or rails B′ of said branch road by wire conductor M, which may be arranged in any suitable manner, and in case the switches should entirely sever the sections E, then the conductors M would also span the said switch-sections.

I do not limit myself to the particular form of switch shown, 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. In a railway, the flexible main or line rails hung upon supports and arranged at different levels from the ground, in combination with rigid curved sections connecting two portions of the main rails, one of which rails acts as the positive and the other as the negative conductor of electricity, and an electric generator to supply electricity to said rails, substantially as and for the purpose specified.

2. In a railway, the flexible main or line rails hung upon supports arranged at different levels from the ground, in combination with rigid curved sections connecting two portions of the main rails, one of which rails acts as the positive and the other as the negative conductor of electricity, and an electric generator to supply electricity to said rails, and an electric motor having supporting-wheels to run upon said rails and receive electricity therefrom, substantially as and for the purpose specified.

3. In a railway, the flexible main or line rails hung upon supports and arranged at different levels from the ground, in combination with rigid curved sections connecting two portions of the main rails, in which one of the rigid curved rail-sections is of greater radius than the other, to overcome the action of centrifugal force on the car in passing around said curve, substantially as and for the purpose specified.

4. In a railway, the flexible main or line rails hung upon supports and arranged at different levels from the ground, in combination with rigid switch-carrying sections of rails connecting two portions of the main lines, and switches arranged in each of said switch-sections, the said switches being arranged one above the other, substantially as and for the purpose specified.

5. In a railway, the flexible main or line rails hung upon supports and arranged at different levels from the ground, in combination with rigid switch-carrying sections of rails connecting two portions of the main lines, and switches arranged in each of said switch-sections, and mechanism to operate both switches at the same time, substantially as and for the purpose specified.

6. The two flexible line-rails B, in combination with the rigid curved sections C C, an electric generator, the poles of which connect with said line-rails, a car, and contacts to convey the electricity from said rails through the motor on the car.

In testimony of which invention I hereunto set my hand.

THEOPHILUS P. CHANDLER, JR.

Witnesses:

R. M. HUNTER,

JAMES S. PHILLIPS.