(No Model.)

L. DAFT.

ELECTRIC RAILROAD.

No. 404,687. Patented June 4, 1889.

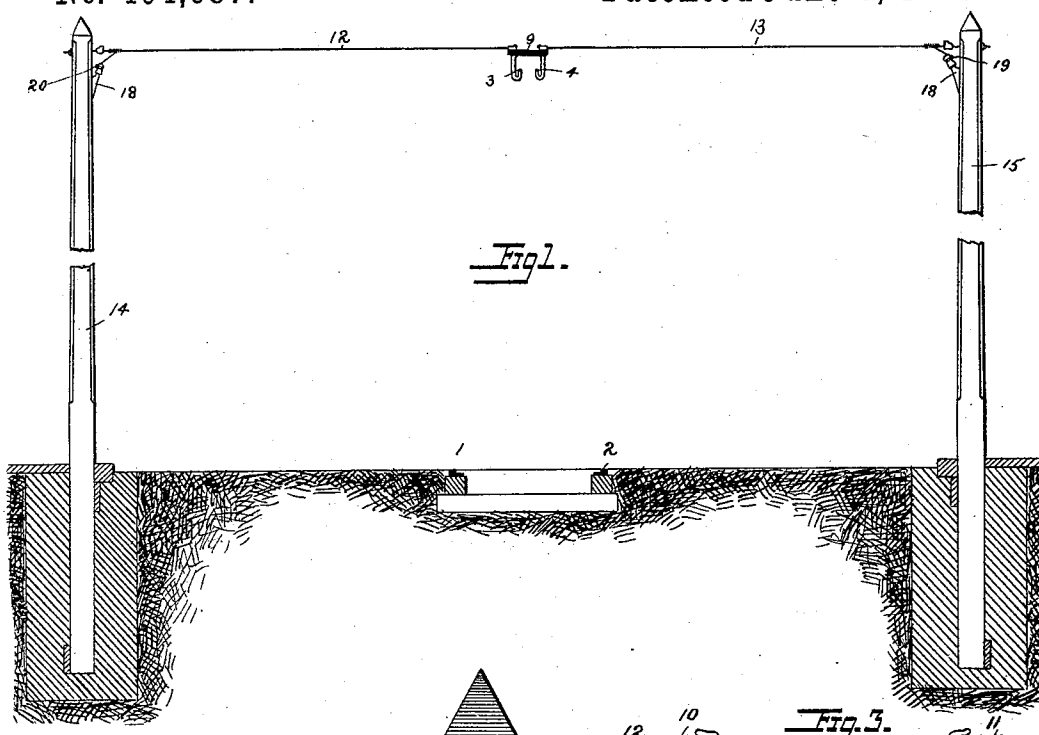

Fig. 1.

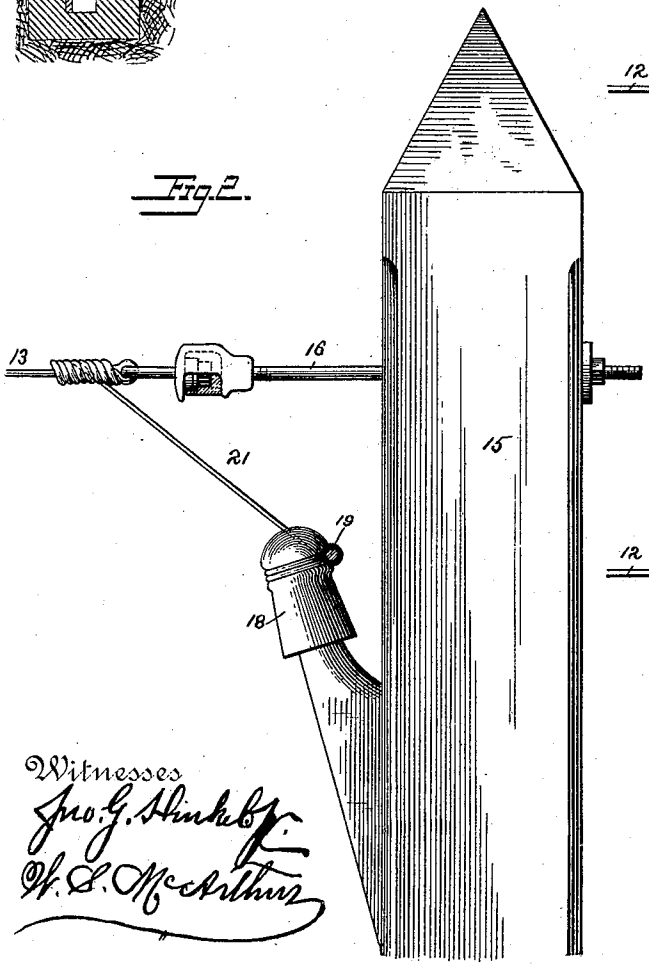

Fig. 2.

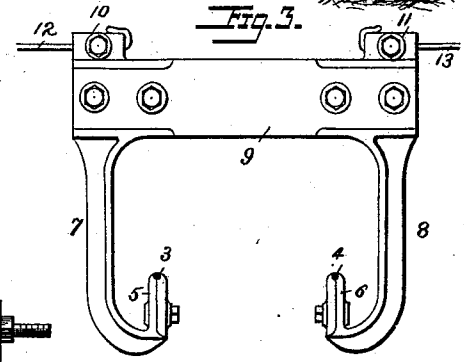

Fig. 3.

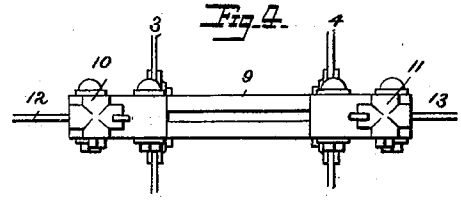

Fig. 4.

Witnesses
Jno. G. Hinkle Jr.
W. L. McArthur

Inventor
Les Daft
By Foster Freeman
Attorney

UNITED STATES PATENT OFFICE.

LEO DAFT, OF PLAINFIELD, NEW JERSEY.

ELECTRIC RAILROAD.

SPECIFICATION forming part of Letters Patent No. 404,687, dated June 4, 1889.

Application filed June 30, 1888. Serial No. 278,697. (No model.)

To all whom it may concern:

Be it known that I, LEO DAFT, a subject of the Queen of Great Britain, residing at Plainfield, Union county, State of New Jersey, United States of America, have invented certain new and useful Improvements in Electric Railroads, of which the following is a specification.

My invention relates to electric railroads, and more especially to means whereby electric currents may be supplied to the conductors extending along the track and to arrangements whereby the current passing over the conductors upon which the collector or trolley connected to the car passes can be re-enforced at intervals.

It is well known in electric railroading that there is a considerable loss of potential in the conductors extending long distances from the source of power, and especially is this the case if comparatively small conductors are used, and I have found that in many cases it is preferable to have the trolley or collector conductors made comparatively small, and to extend along the track at some convenient position larger conductors carrying the main current and to connect these larger conductors to the trolley-conductors at stated intervals, so as to re-enforce the current traversing said trolley-conductors; and my present invention relates more particularly to means whereby I am enabled to carry out such a system.

Referring to the accompanying drawings, Figure 1 represents a railway-track with overhead conductors supported upon posts. Fig. 2 is an enlarged view of a portion of one of the posts and its connections. Figs. 3 and 4 are respectively side and plan views of the trolley-conductor supports.

The road-bed is represented in the center of Fig. 1, having the rails 1 2, upon which the engine or car travels, and which may be provided with any suitable trolley or collector adapted to travel on the trolley-conductors 3 4, supported in a suitable position over the track. These conductors may be mounted in any usual or desired manner; but I have shown them supported in the vise-grips 5 6, which form prolongations of the arms or bars 7 8, which bars are secured to a plate or frame 9, and in the present instance are insulated from each other. On the top of this plate or frame are secured the binding attachments 10 11, to which the wires or conductors 12 13 are respectively attached, the other ends of the wires extending laterally and being secured to the tops of the posts 14 15 by suitable tension devices 16. These wires 12 13 not only serve to support the plate or frame 9 in proper position over the track, but I make use of them to convey a re-enforcing current to the trolley-conductors 3 4, and as one means of doing this I support upon suitable insulators 18, attached to the posts, large and preferably insulated main-current conductors 19 20, and these are connected to the supporting-wires 12 13 by suitable connections, as the conductors 21, at suitable intervals along the track. From this arrangement it will be seen that the trolley-conductors need not be of a large size sufficient to easily carry the whole current, and by this arrangement not only can the conductors themselves be smaller and lighter, and thus more easily supported, but the trolley or collector traveling upon the conductor can be lighter. In this construction, if, perchance, the trolley-conductor should be broken or the carrier be disarranged, it would not necessarily interfere with the current passing along the whole line of the track, but only at the interval caused by the break.

The main conductors are shown in the present instance as supported on insulators upon the posts; but it is evident that they may be otherwise located, either above or below ground, and the connecting-wires 21 between the main current-conductor and the supporting-wires can be arranged upon the post in any suitable manner.

In the present instance I have illustrated the invention as having two conductors connected with a plus and minus trolley-conductor; but it is evident that instead of two conductors a single main conductor may be used, which shall be connected with the trolley-conductor at suitable intervals to re-enforce it, and the return-current can pass through the rails or otherwise to earth.

The supporting-posts may be arranged, as shown, on opposite sides of the street, where they are least liable to accident or to interfere with traffic, and it will thus be seen that the arrangement is simple and inexpensive

and at the same time exceedingly effective in many positions.

While I have illustrated one embodiment of my invention, it is evident that the details may be variously arranged and constructed to embrace my invention by those skilled in the art, and I do not, therefore, limit myself to the precise construction and arrangement shown.

What I claim is—

1. In an electric railway, the combination, with the insulated plate, of the vise-grips secured thereto and supporting the trolley-conductors, posts arranged along each side of the track supporting the main-current conductors, wire-connectors between the posts and plate serving to support the plate and conduct the main current to the trolley-conductors, and electric connections between the connectors and the main-current conductors, substantially as described.

2. In an electric railway, the combination, with the insulated plate, of the vise-grips supporting the trolley-conductors at their ends, posts arranged along each side the track supporting the main-current conductors, wire-connectors attached to the insulated plates at one end and having their other ends attached to the posts and provided with tension-adjusting devices, and electric connections between the connectors and main-current conductors, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LEO DAFT.

Witnesses:
ERNEST F. AYRAULT,
JAMES S. MILNER.