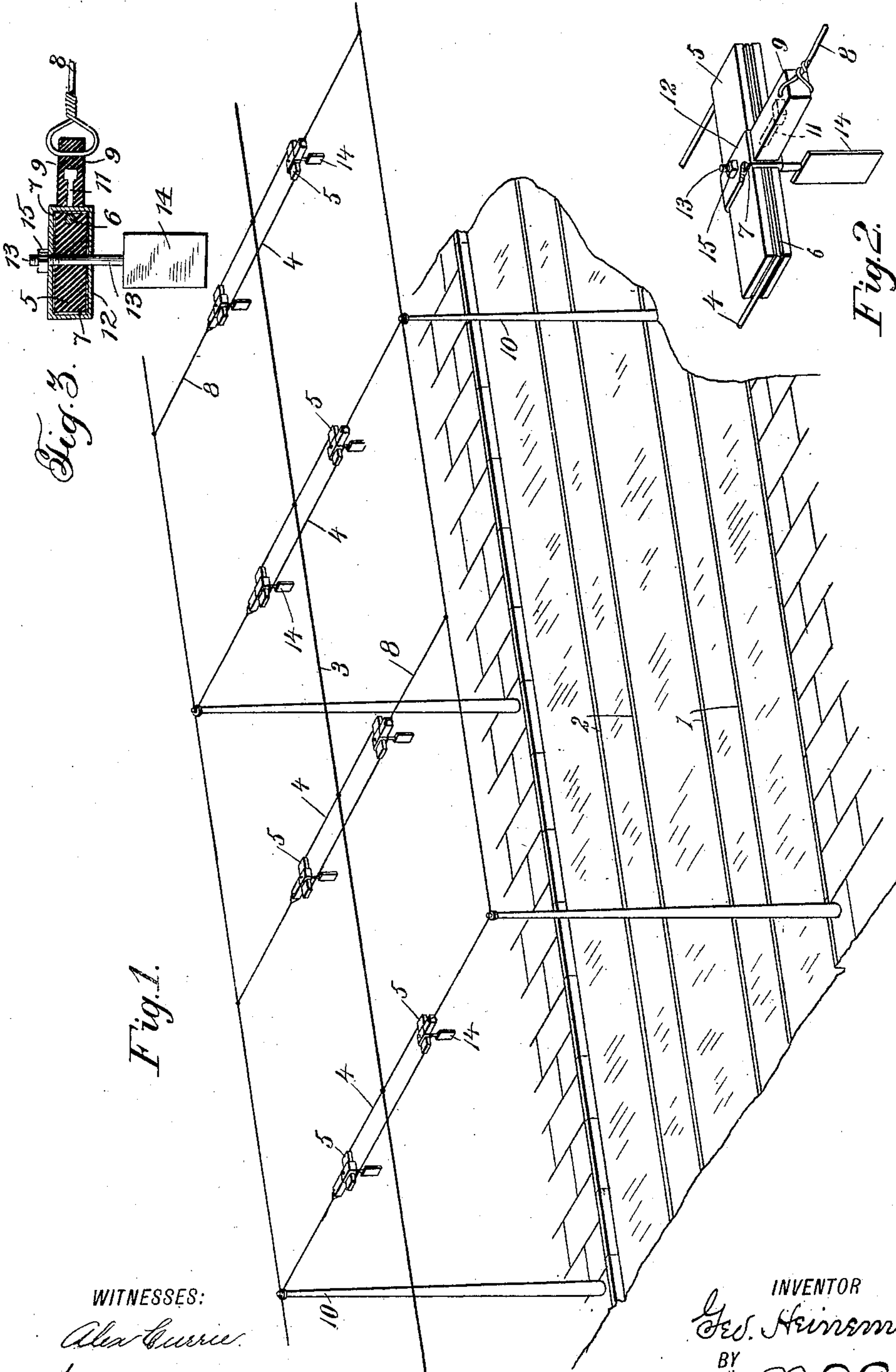


G. HEINEMAN.
OVERHEAD ELECTRICAL CAR SYSTEM.
APPLICATION FILED SEPT. 13, 1907.

916,863.

Patented Mar. 30, 1909.



WITNESSES:
Alex Currie
Wm F. Booth

INVENTOR
Geo. Heineman
BY *W. A. Ackers*
ATTORNEY

UNITED STATES PATENT OFFICE.

GEORGE HEINEMAN, OF SAN FRANCISCO, CALIFORNIA.

OVERHEAD ELECTRICAL CAR SYSTEM.

No. 916,863.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed September 13, 1907. Serial No. 392,729.

To all whom it may concern:

Be it known that I, GEORGE HEINEMAN, a subject of the Emperor of Germany, residing in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Overhead Electrical Car Systems, of which the following is a specification.

Ordinarily the current for operating electric railway cars is taken from an overhead system by means of a trolley-wheel working against an exposed or non-insulated supply wire, independent supply wires being used for cars running on separate tracks,—that is to say where there are two tracks, a supply wire is provided for each. Inasmuch as the feed or supply wires are exposed or non-insulated, great danger exists as to the receiving of shocks therefrom in case the wires break and fall to the ground, besides the liability of the workmen or linemen receiving shocks by accidentally grasping of the wires while making repairs to the overhead systems as at present constructed.

The object of the present invention is to provide for the taking of the current for the operating of the electric cars from a single supply cable by means of a series of distributing wires extended therefrom laterally at given intervals along the line of the railway, the laterally extended distributing wires being extended within the sphere of the cars running on either track of the roadbed, said distributing wires being connected with depending contacts which are swept by the trolley-brush of the cars during the travel thereof, the supply cable and the distributing wires being insulated to protect the linemen from receiving shocks while repairing the overhead system, and pedestrians and horses from receiving shocks by contact with dangling wires, in case the supply cable or distributing wires should become broken.

To comprehend the invention reference should be had to the accompanying sheet of drawings, wherein—

Figure 1 is a perspective view of the arrangement of the wires as applied to an overhead electric railway system. Fig. 2 is a broken detail view of one of the distributing wires with its contact depending therefrom. Fig. 3 is a detail sectional view of the parts shown in Fig. 2.

In the drawings the numerals 1—2 indicate the tracks of a double track electric railway, and 3 the supply cable which is ar-

ranged centrally between the tracks and held a distance above the same, being supported at a height above the said tracks common to overhead electric railways.

From the supply cable 3 laterally extends at given intervals the distributing wires 4, which wires are connected to and receive current from the supply wire or cable at one point, being held apart at their outer end portion by the separating blocks 5. The centrally disposed supply cable 3, and the spaced laterally extended distributing wires 4 are thoroughly insulated, except at the point of union or contact therebetween, the insulation of the distributing wires 4 extending to the end portions 6 thereof, which non-insulated portions of the distributing wires bear onto the copper band or strap 7, fitted over the blocks 5.

The central supply cable 3 with its laterally extended distributing wires 4 is supported by the poles 10, being connected thereto by the tie wires 8. These wires are attached to the space blocks 5 by means of an insulated block 9, within which is held the head of the bolt 11, which is formed integral with and projects from the coupling ring 12. The head of the bolt 11 is secured within the insulated block 9 in any convenient manner as for example by molding or forming the block around the head of the bolt. This coupling ring is fitted over the space blocks 5, and through the said ring, the space block, and the band or strap 7 extends the screw-threaded portion 13 of the flexible contact plate 14. The said contact plates are held in position by means of the nut 15, which screws onto the upper projecting end of the same, Fig. 2 of the drawings. It is obvious that other means may be employed for securing the contact plates to the space blocks, likewise for supporting the central supply cable and its laterally extended distributing wires.

The current is taken from the central supply cable by means of the laterally extended distributing wires 4, passing there from through the band or strap 7 into the downwardly extended flexible contact plates 14.

The flexible contact plates 14 project below the space blocks for a distance of about two feet, more or less, and stand about midway of the tracks 1—2, so that the lower end thereof may be engaged by the trolley-brush secured to the electric railway car, above the roof thereof. The trolley brush to be used

in connection with the present invention is set forth in an application filed by me in the United States Patent Office Sept. 13, 1907 concurrently with the present application and bearing Serial No. 392,728, hence the same need not herein be described.

The laterally extended distributing wires 4 are arranged at intervals of about thirty feet apart, the only noninsulated exposure of the described overhead system being at the contact plates 14, which are arranged at given intervals along the system corresponding to that of the distributing wires.

The trolley brush secured to and carried by each car used in connection with the described overhead system, and which forms no portion of the present application, is such as to have a field of contact greater than the distance between the contact plates 14, so that a portion of its field will be in contact with one of the plates along the line of the railway at all times.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is—

1. An overhead system for electrically operated railway cars, the same comprising an insulated main supply cable, a series of insulated distributing wires laterally extended therefrom at regular intervals, spacing blocks of insulating material with which the said wires connect, a contact plate carried by each of the said spacing blocks for supplying an electrical current to a passing car, a connection between the said contact plates and the distributing wires, and means for supporting the supply cable, the distributing wires, and the contact plates above the tracks of the railway.

2. An overhead system for electric railways comprising a main supply cable extended along the roadway, a plurality of space blocks supported at the side of the supply cable, a series of insulated distributing wires extending laterally from the supply cable and engaging the space blocks, a series of vertically disposed resilient contact plates rigidly connected with the space blocks and electrically connected with the distributing wires, and means for supporting the supply cable, the distributing wires and space blocks above the tracks of the roadway.

3. An overhead system for electrically operated railway cars, the same comprising an insulated main supply cable, a series of insulated distributing wires laterally extended therefrom at intervals, blocks to which said wires are connected, metal bands on the blocks and in contact with said wires, a contact plate carried by each of the blocks for conducting electric current to a passing car, each of said plates being provided with a shank passing through one of the blocks and engaging one of the metal bands, and means for supporting the supply cable, the distrib-

uting wires and space blocks above the tracks of the roadway.

4. An overhead system for electrically operated railway cars, the same comprising an insulated main supply cable, a plurality of space blocks arranged along opposite sides of said cable, a series of insulated distributing wires laterally extended to opposite sides of the supply cable, each of said wires connecting two oppositely disposed space blocks, a contact plate carried by each of the space blocks, a connection between the wires and contact plates, and means for supporting the space blocks in an elevated position.

5. An overhead system for electrically operated railway cars, the same comprising an insulated main supply cable, a plurality of space blocks arranged along opposite sides of said cable, coupling members engaging the space blocks, a series of insulated distributing wires laterally extended to opposite sides of the supply cable, each of said wires connecting with two oppositely disposed space blocks, a contact plate carried by each of the space blocks, a connection between the wires and contact plates and means for supporting the supply cable, the distributing wires and space blocks above the tracks of the roadway, said means including an elevated support at opposite sides of the supply cable and tie wires connecting the supports and coupling members.

6. An overhead system for electrically operated railway cars, the same comprising an insulated main supply cable, a plurality of space blocks arranged along opposite sides of said cable, coupling members engaging the space blocks, a series of insulated distributing wires laterally extended to opposite sides of the supply cable, each of said wires connecting with two oppositely disposed space blocks, a contact plate carried by each of the space blocks, a connection between the wires and contact plates, and means for supporting the supply cable, the distributing wires and space blocks above the tracks of the roadway, said means including an elevated support at each side of the supply cable and tie wires having an insulated connection with the coupling members and connected to the supports.

7. An over head system for electrically operated railway cars, the same comprising an insulated main supply cable, a series of insulated distributing wires laterally extended to one side of the supply cable, blocks provided with seats to receive said wires, metal bands on said blocks, metal coupling rings fitted on the blocks over the metal bands contact plates carried by the blocks, each of said contact plates having a shank passing through a metal band, a coupling ring and a space block, the metal bands engaging the wires and serving to electrically connect the wires with the contact plates, and means for

supporting the supply cable, the distributing wires and space blocks above the tracks of the roadway.

5 8. An overhead system for electrically operated railway cars, the same comprising an insulated main supply cable, a series of insulated distributing wires laterally extended to one side of the supply cable, space blocks provided with seats to receive the wires,
10 metal bands on said space blocks, metal coupling rings fitted on the space blocks over the metal bands, contact plates carried by the space blocks, each of said contact plates having a shank passing through a space
15 block, a metal band and a coupling ring and secured to the coupling ring, said metal bands

engaging the wires and serving to electrically connect the wires with the contact plates, said coupling rings being provided with projections, insulating blocks connected with the projections of the coupling rings, an elevated support at each side of the supply cable, and tie wires connecting the insulating blocks with the elevated supports. 20

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 25

GEORGE HEINEMAN.

Witnesses:

N. A. ACKER,
D. B. RICHARDS.