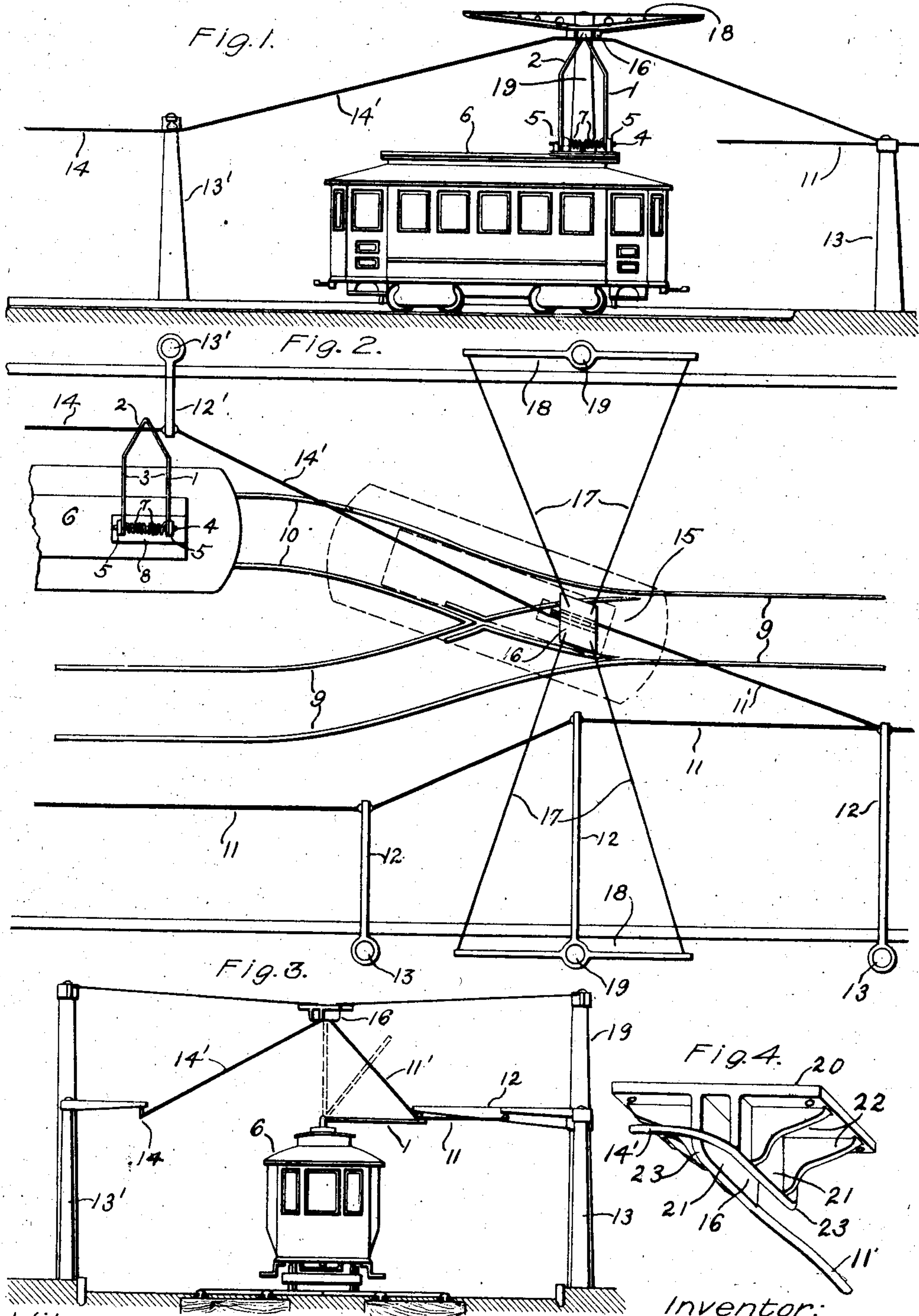


No. 834,100.

PATENTED OCT. 23, 1906.

C. E. BARRY.
OVERHEAD TROLLEY SYSTEM.
APPLICATION FILED MAY 1, 1905.



Witnesses:
J. Ellis Glen
Green Aford

Inventor:
Charles E. Barry.
by Albert H. Davis
Att'y.

UNITED STATES PATENT OFFICE.

CHARLES E. BARRY, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

OVERHEAD-TROLLEY SYSTEM.

No. 834,100.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed May 1, 1905. Serial No. 258,216.

To all whom it may concern:

Be it known that I, CHARLES E. BARRY, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Overhead-Trolley Systems, of which the following is a specification.

The present invention relates to electric railways, and more particularly to systems of suspended conductors arranged along the roadway and by which the electric current is delivered through trolley devices to the propelling-motors of the cars.

In certain instances it is necessary that the overhead supply-conductors be located to one side or the other of the roadway in order that the space directly above the roadway may be free from danger to people riding on the tops of the cars, especially on roads having a mixed service of both steam and electrically-driven vehicles.

The object of my invention is to provide a side-running trolley and a system of conductor suspension whereby the conductor may be arranged upon either side of the roadway and crossed thereover wherever necessary and an automatic shifting of the trolley effected at such crossover-points.

In carrying out my invention I provide a trolley pivoted on a longitudinal horizontal axis and normally biased to stand in the vertical axial plane of the car and suspend the conductor-wire along the side of the roadway in such position that the trolley is normally held bent over in a substantially horizontal position and thrusting upwardly against the under side of the wire. At the points at which the conductor-wire crosses the roadway, as at switches and sidings, it is slanted upwardly to a height beyond the reach of a person standing on the top of a car and cut, and a second section arranged parallel to and overlapping a portion of the upper end of the first wire and continued down to the opposite side of the roadway. The trolley as it is carried along by the car follows up the upwardly-inclined portion of the first wire until it reaches the parallel space between the overlapping ends of the wires, where it stands in vertical position, and upon further movement of the car it engages the second wire and is forced downwardly and outwardly into horizontal position opposite

to that it formerly occupied and thereafter travels in contact with the under side of the second wire arranged on the opposite side of the roadway.

For a more complete understanding of the invention reference may be made to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of one form of wire suspension and a car with a trolley in engagement therewith at the point of crossing of the wire from one side of the roadway to the other. Fig. 2 is a plan of the same. Fig. 3 is a left-hand end elevation of the system, and Fig. 4 is a perspective view of a guide-box to which the upwardly-inclined ends of the wires are connected and held in parallel overlapped position above the center of the roadway.

The trolley consists of a metal loop 1 with its upper end 2 made V-shaped and the side arms 3 arranged parallel and connected at their lower ends to a horizontal shaft 4, journaled in bearings 5, secured to center of the roof of the car 6, preferably near one end thereof, and about the shaft 4 are reversely-coiled springs 7, connected to the bearing-plate 8 and thrusting against opposite sides of the arms 3 to normally hold the trolley in vertical position.

The main car-track is represented at 9, and the "siding-track," so called merely for convenience, is represented at 10. Extending parallel to the main track 9 is a conductor 11, suspended at a fixed elevation about the roadway on arms 12, supported by posts 13. On the opposite side of the roadway is another conductor 14, supported in like manner by arms 12' on posts 13'. Above the point of junction 15 of the siding-track 10 with main track 9 is arranged a guide-box 16, which is carried by span-wires 17, connected to the respective corners of the box and to the ends of yard-arms 18, carried at the tops of tall poles 19 on opposite sides of the roadway. The box 16 consists of a metal casting having a main plate 20 with two parallel guide-webs 21 depending therefrom, strengthened by brackets 22, and each web having one corner 23 rounded. The box 16 is positioned with the space between the guide-webs 21 substantially in line with the track 10 at the point of branching from track 9, and to the lower edge of one of the

webs 21 a conductor-wire 11', which slopes therefrom to the level of the wire 11 and is joined thereto near its point of suspension at one of the arms 12, and to the other web 21 is another conductor-wire 14', which slopes downwardly therefrom and unites with or forms a continuation of the wire 14.

When the car traverses in either direction the main track 9, the trolley is carried in substantially the position indicated in Fig. 3, in continuous contact with the under side of conductor-wire 11, and as the crossover-wire 11' is entirely above the level of the wire 11 it in no way interferes with the passage of the trolley under the point of connection between them.

When the car turns from the main track 9 to the siding-track 10, the trolley is carried with the car transversely from beneath conductor-wire 11 and follows up the inclined wire 11' under the recoil of its springs 7 until it reaches the vertical position, as shown in Fig. 1, with its upper end between the guide-webs 21, and upon further movement of the car it is brought into engagement with the downwardly-sloping wire 14' and is gradually folded over into the opposite horizontal position and travels in contact with the under side of wire 14, as indicated in Fig. 2. According to this arrangement of trolley and suspended conductor it will be noted that the trolley is automatically shifted from one side conductor to the opposite conductor and that the clearance above the cars at the switches is not obstructed or made dangerous by the crossing thereof of the naked conductor.

I do not desire to restrict myself to the particular form or arrangement of parts herein shown and described, since it is apparent that they may be changed and modified without departing from my invention.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In an overhead-trolley system, the combination of conductors supported at the sides of the roadway, an oppositely-movable underrunning collector carried by the car, and means for automatically shifting the collector from the conductor on one side of the roadway to the conductor on the opposite side.

2. In an overhead-trolley system, the combination of conductors supported at the sides of the roadway, an oppositely-movable underrunning collector carried by the car, and means for automatically shifting said collector from the conductor on one side of the

roadway to the conductor on the opposite side without breaking contact between collector and conductor.

3. In an overhead-trolley system, the combination of conductors supported at the sides of the roadway and having connecting-conductors extending diagonally across and slanting upwardly above the center of the roadway, and an oppositely-movable underrunning collector carried by the car in contact with said conductors.

4. In an overhead-trolley system, the combination of conductors supported at the sides of the roadway, connecting-conductors leading diagonally therefrom to a higher elevation above the center of the roadway, means for sustaining the upper ends of said connecting-conductors in spaced relation, and an oppositely-movable underrunning collector carried by the car in contact with said conductors.

5. In an overhead-trolley system, the combination of conductors supported at the sides of the roadway, connecting-conductors leading diagonally therefrom to a higher elevation above the center of the roadway, means for sustaining the upper ends of said connecting-conductors in spaced relation and in electrical communication, and an oppositely-movable underrunning collector carried by the car in contact with said conductors.

6. In an overhead-trolley system, the combination of conductors supported at the sides of the roadway, connecting-conductors leading diagonally therefrom to a higher elevation above the center of the roadway, means for sustaining the upper ends of said connecting-conductors in overlapped spaced relation, and an oppositely-movable underrunning collector carried by the car in continuous contact with said conductors.

7. In an overhead-trolley system, the combination of conductors supported at the sides of the roadway, a collector hinged to the car to swing transversely thereof and provided with tension means tending to hold it in vertical position, and means for moving the collector from underrunning contact with the conductors on one side of the roadway into underrunning contact with the conductor on the opposite side.

In witness whereof I have hereunto set my hand this 29th day of April, 1905.

CHARLES E. BARRY.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.