No. 715,714. Patented Dec. 9, 1902.

L. E. WALKINS.

TROLLEY FOR ELECTRIC RAILWAY CARS.

(Application filed Jan. 9, 1900. Renewed Sept. 20, 1902.)

(No Model.) 2 Sheets—Sheet 1.

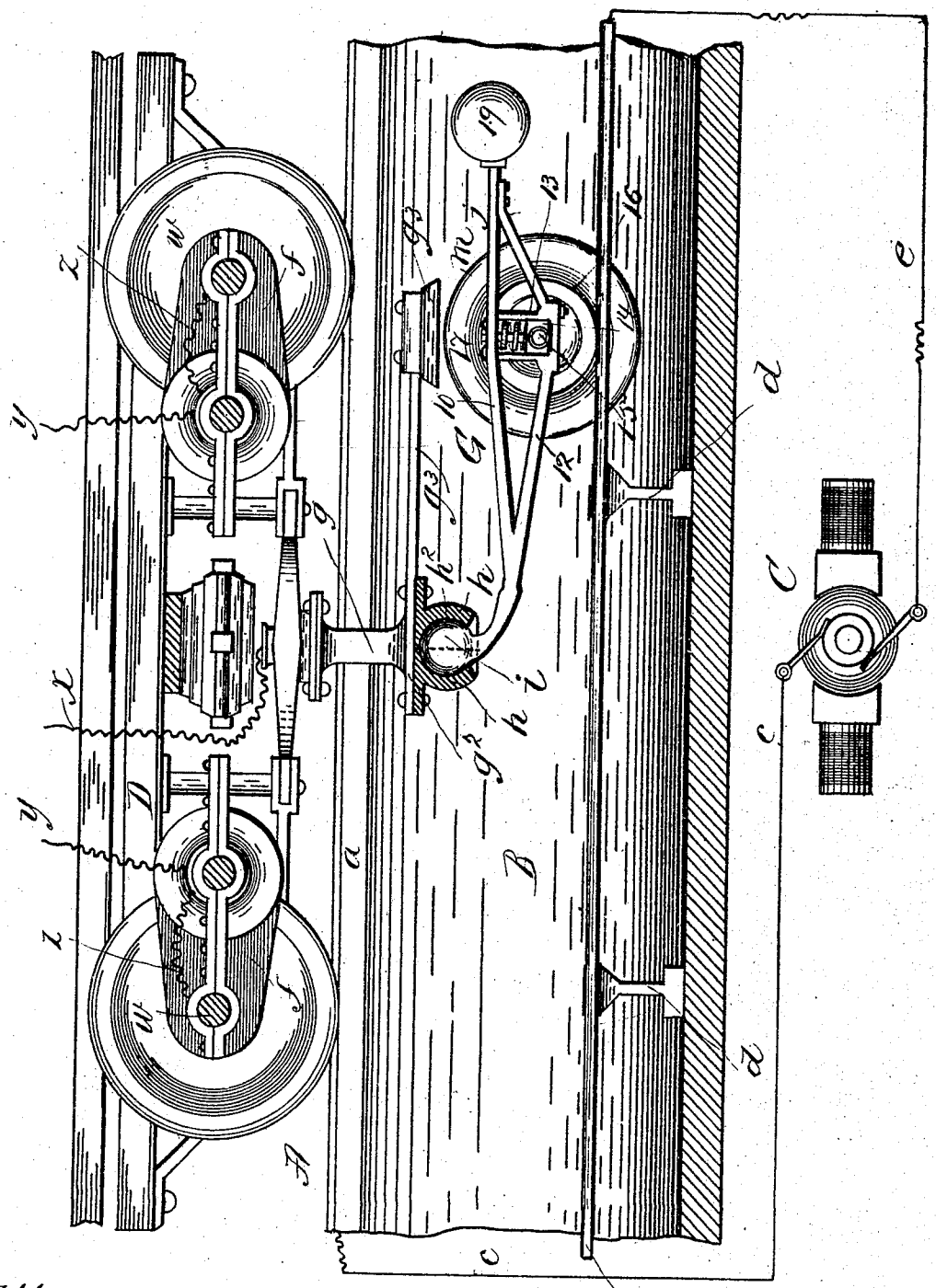


Fig. 1.

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Fig. 2.

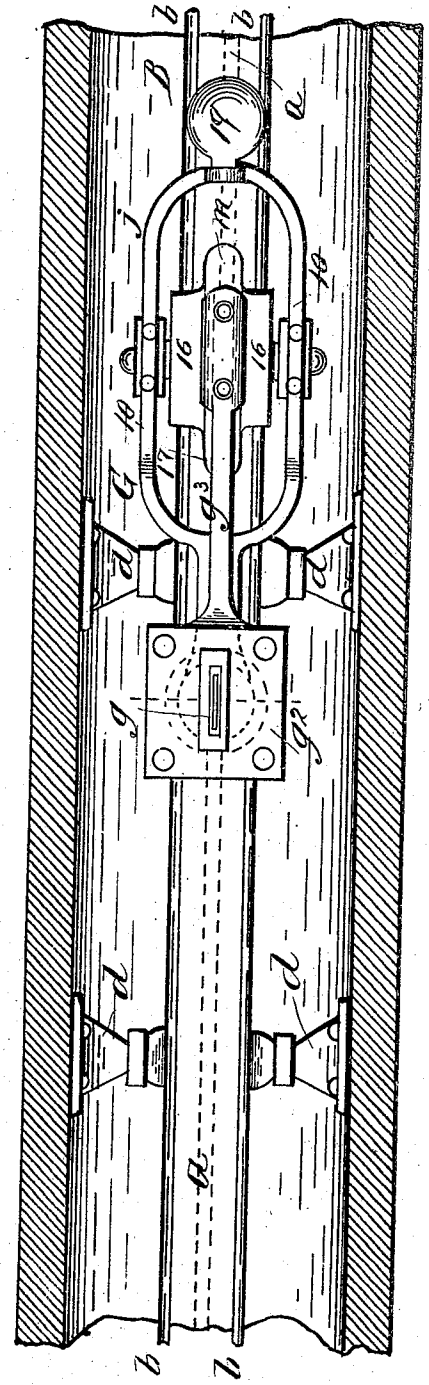


Fig. 4.

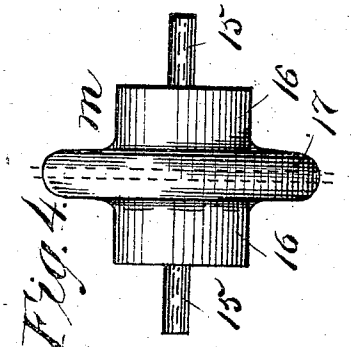
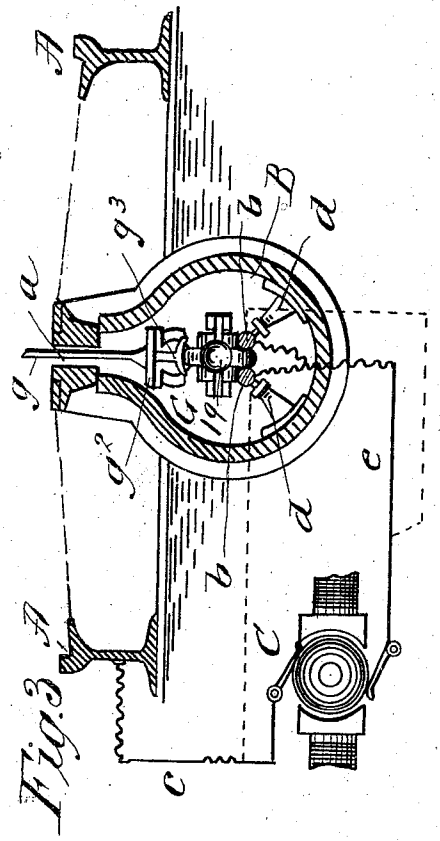


Fig. 3.



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UNITED STATES PATENT OFFICE.

LOUIS E. WALKINS, OF SPRINGFIELD, MASSACHUSETTS.

TROLLEY FOR ELECTRIC-RAILWAY CARS.

SPECIFICATION forming part of Letters Patent No. 715,714, dated December 9, 1902.

Application filed January 9, 1900. Renewed September 20, 1902. Serial No. 124,253. (No model.)

To all whom it may concern:

Be it known that I, LOUIS E. WALKINS, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Trolleys for Electric-Railway Cars, of which the following is a full, clear, and exact description.

This invention relates to improvements in a shoe or current-collecting trolley for use in an electric-railway system, and more particularly to a trolley designed to be engaged and movable with the truck of the motor-car below the same and to have running contact on the live wire of an underground or conduit electric railway.

The object of the invention is to provide a trolley for the application indicated which is especially available on double conductors, always conforming thereto, notwithstanding variations in the height thereof or curves in the course thereof.

The invention consists in a shoe or trolley and the combination thereof with the truck and the electric-current conductors, all substantially as will hereinafter fully appear and be set forth in the claims.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a sectional elevation longitudinally of the conduit-railway, showing the truck running thereon and the trolley, this view also representing the current-conductors and power connections. Fig. 2 is a plan view of the improved trolley and the double electric conductors on which the trolley runs, the conduit being understood as broken out in horizontal section on a plane above the level of the conductor-wires. Fig. 3 is a cross-sectional view of the conduit-railway, the trolley being shown in front end view. Fig. 4 is a plan view of the runner-wheel of the trolley.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the usual track-rails of the street or other railway, midway between which is the conduit B, of an ordinary character, longitudinally running, in which below the central slot *a* are the electric-current conductors *b b*, both of which, as shown, may be feed-wires.

C represents the dynamo or generator, having connection with which is the feed-wire *e*, running therefrom to the connection with both trolley-wires *b b*, which are supported above the bottom of the conduit by the brackets *d d*.

c represents the return-wire, extending from the car-track rail A back to the dynamo.

D represents the motor-truck, on which, located at *f*, are the motors, as usual. The motor-truck comprises suitable frameworks or supports, which may be of any suitable form or construction, for centrally supporting the depending bar *g*, which extends through the slot into the conduit and with which is engaged or connected the trolley G. The depending bar *g* has at its lower end the plate g^2, to which are bolted or riveted the shells or half-sections *h h*, which comprise the socket h^2, in which is engaged the spherical end *i* of the bar or frame *j*, which comprises opposite or duplicated upper and lower members 10 12, between which are the opposite side pedestals (indicated at 13) for the journal-boxes 14 of the axle or gudgeons 15 of the trolley-wheel *m*, which latter comprises the opposite side hub-like bearing portions 16 16, the central flange 17, and the gudgeon 15. A spring is applied in the opening within the pedestal at each side of the supporting-frame of the trolley for exerting a downward pressure on the trolley-wheel. The top member of the trolley is endwise extended beyond the trolley-wheel in a direction opposite to its ball-and-socket connection in the weighted member 19. The plate g^2 has as an extension thereof the bar or member g^3, extended over and normally separated from the top of the flange 17 of the trolley-wheel.

It being understood that the trolley-wheel is in electric connection through the wiring *x y y* with the motors of the car, it being understood that the controller intervenes and that the motor or motors of the car are by the wiring *z* connected for the return of the current through the car-wheel axle *w*, car-wheel, and track-rail, it will be apparent in what manner the current from the dynamo to the trolley-wire is taken through the mo-

tor by way of the trolley, there being no new arrangements or provisions for the course of the current under this invention, which relates to the mechanical construction and action of the trolley itself, which, as apparent, by reason of the ball-and-socket connection at *h i* can not only give laterally, but also vertically, within limits, as regulated by the distance which the part g^3 is above the top of the flange 17 of the trolley-wheel. The trolley-wheel is prevented from displacement laterally by the flange 17, which depends between and below the separated trolley-wires *b b*.

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

1. The combination with the slotted conduit, the conductor therein and the truck running on the trackway over the conduit provided with the depending member *g* extended downwardly through the slot in the conduit, of the wheeled trolley in running contact on the said conductor and comprising a frame, a portion of which has a ball-and-socket connection with the said depending member *g* extended from the truck, and a bar g^3 longitudinally and horizontally extended from the said member *g* over the trolley.

2. In an electric-railway system, the combination with the slotted conduit and the double parallel electric conductors *b b*, of the motor-truck comprising a member depending through the slot into the conduit, a trolley comprising a wheel having double bearing portions 16, 16, to run on the said conductors, and the intermediate flange 17, and the trolley-frame having a ball-and-socket connection with and extended horizontally endwise beyond the said depending member, substantially as described.

3. In an electric-railway system, the combination with the slotted conduit and the double parallel electric conductors *b b*, of the motor-truck comprising the member *g* depending through the slot into the conduit, a trolley, comprising a wheel having double bearing portions 16, 16, to run on the said conductors, and the intermediate flange 17, and the trolley-frame having a ball-and-socket connection with and extended horizontally endwise beyond the said depending member, and the bar g^3 supported by and extended longitudinally beyond the member *g*, over the top of the trolley-wheel, substantially as described.

Signed by me at Springfield, Massachusetts, in presence of two witnesses.

LOUIS E. WALKINS.

Witnesses:

WM. S. BELLOWS,

M. A. CAMPBELL.