

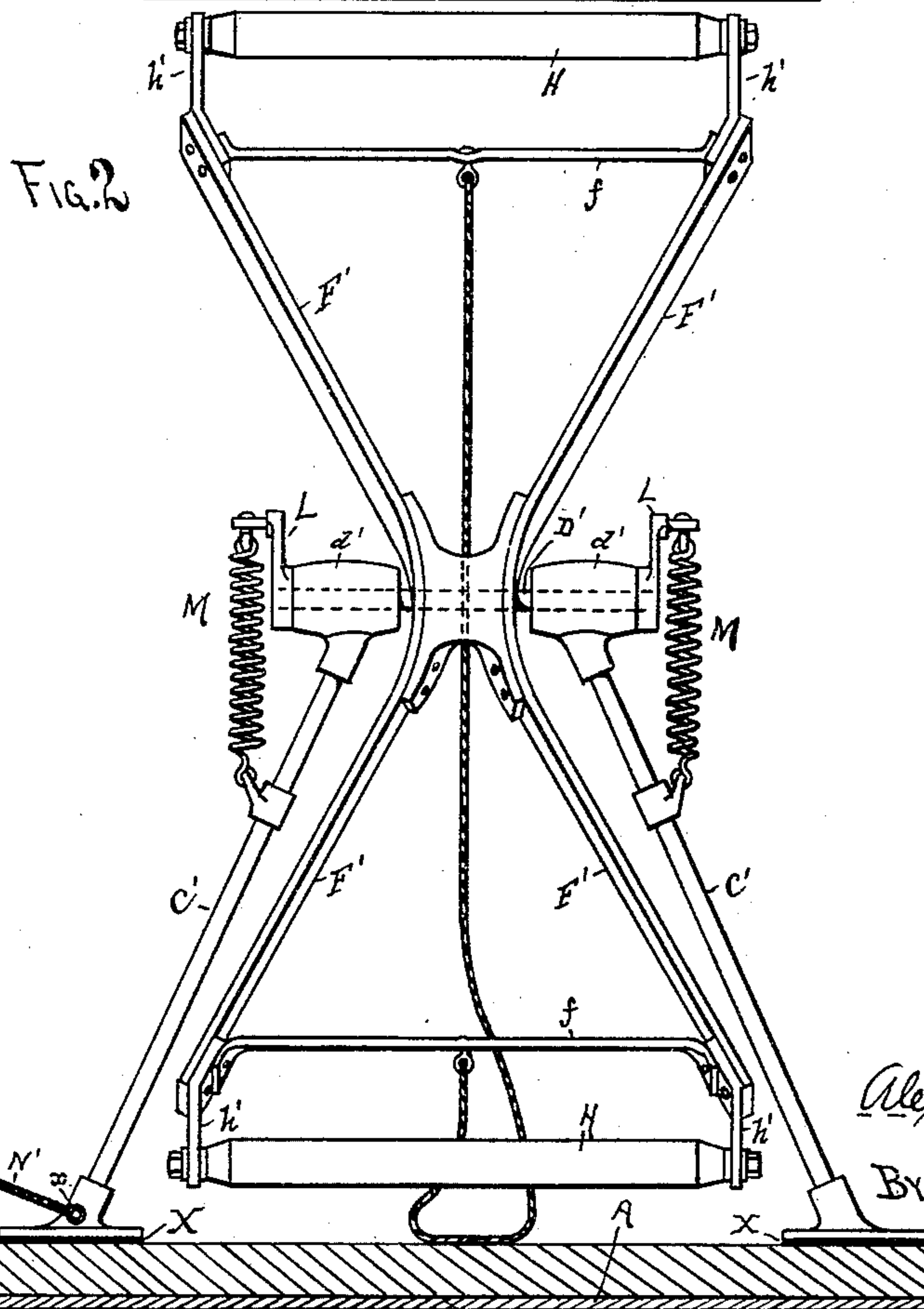
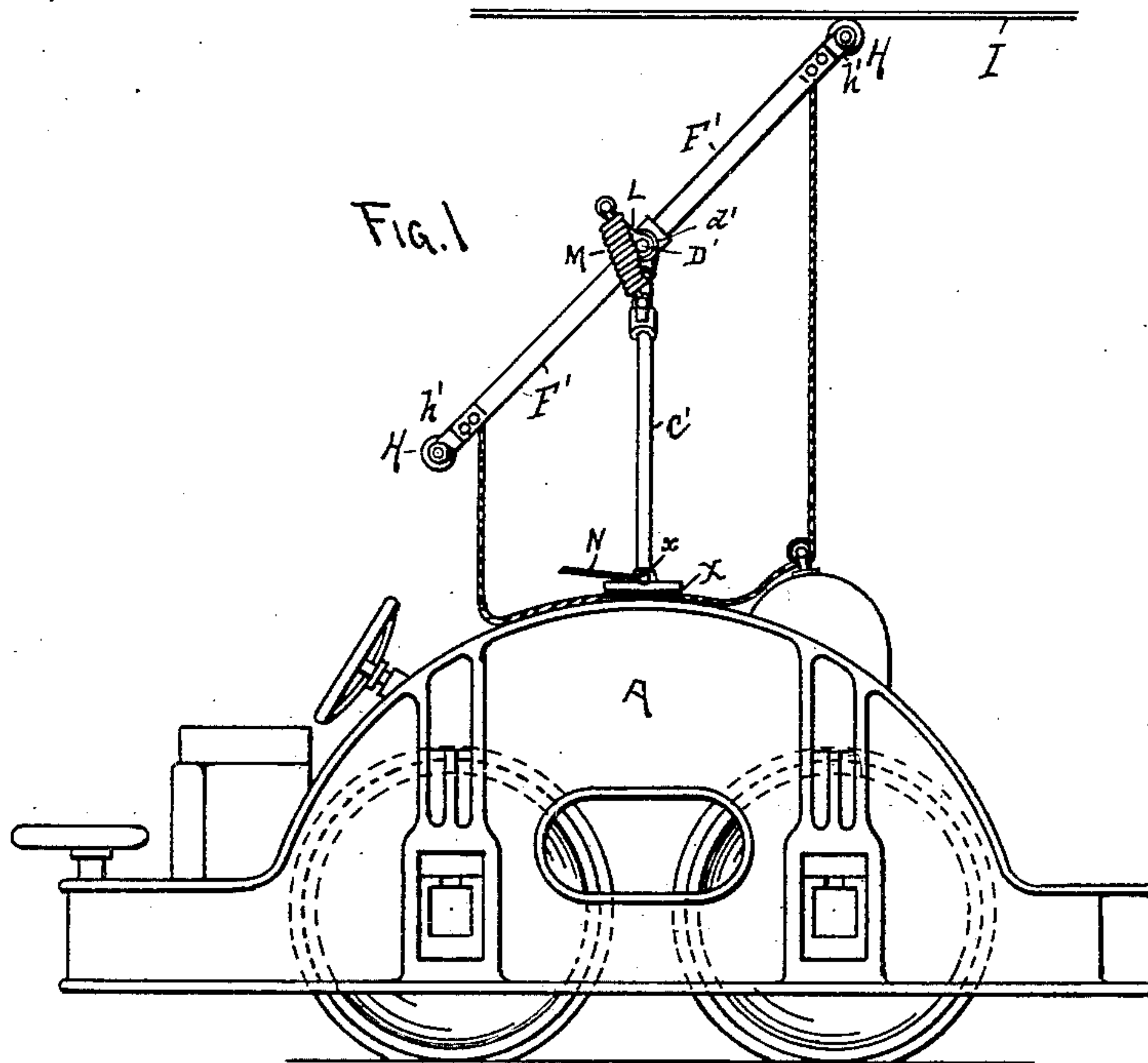
No. 677,262.

Patented June 25, 1901.

A. PALMROS.  
TROLLEY.

(Application filed Apr. 29, 1901.)

(No Model.)



WITNESSES.  
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# UNITED STATES PATENT OFFICE.

ALEXANDER PALMROS, OF COLUMBUS, OHIO, ASSIGNOR TO JOSEPH A. JEFFREY, OF SAME PLACE.

## TROLLEY.

SPECIFICATION forming part of Letters Patent No. 677,262, dated June 25, 1901.

Original application filed October 9, 1899, Serial No. 732,804. Divided and this application filed April 29, 1901. Serial No. 57,999. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER PALMROS, a citizen of Finland, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Trolleys, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a side view of a car and a trolley device embodying my invention. Fig. 2 is a front elevation of a trolley device on a larger scale.

In the drawings, I have shown a car A of one of the sorts to which a trolley mechanism having my improvements is particularly well adapted, such cars being those which are employed at places where the distance of travel is limited—as, for instance, in freight-yards, the yards of mills, factories, and the like, where frequent but short trips are made and where the trolley-arm is to be so frequently reversed as to make it very disadvantageous to have to swing it around a vertical axis, as is the case with trolleys employed in ordinary street-vehicles.

The herein-described apparatus is designed for the purpose of enabling me to dispense with the numerous peculiarly-arranged switches which are now commonly used in electric railways of all sorts. These switches generally consist of cast metallic boxes with grooves and guideways adapted to engage with and move laterally the narrow grooved trolley-wheels, which are mounted at the ends of the upwardly-extending poles in the ordinary constructions. In the yards of freight depots or stations and in the yards of mills and factories there are numerous car-tracks branching at frequent intervals from one to another, and overhead there are necessarily in the suspended conductor a corresponding number of switch-boxes, requiring the motor-man to be constantly on the lookout for the turnouts and to be constantly manipulating the trolley-pole. With the present devices this is all obviated, as it is only necessary to have one wire soldered to another or connected in equivalent simple way, no switch-boxes or large castings of that sort being necessary. The laterally-elongated trolley-roll-

ers H H readily and automatically pass from one wire to another, being of such length as to be in continuous engagement with one another. (See Fig. 2.) Cars used in such places must be frequently reversed in their direction of motion, and in the apparatus herein presented this is immediately accomplished by merely pulling down the upper arm of the trolley a short distance, whereupon the lower arm is immediately carried upward by the spring and the trolley-roller thereon is brought into and held in contact with the conductor.

I am aware of the fact that it has been heretofore proposed to mount a narrow grooved trolley-wheel upon the top of a double-ended arm, which in turn was mounted in the upper end of a single tubular post or standard, such device being proposed for use in the ordinary street-railways; but I believe myself to be the first to have provided a trolley construction adapted to meet the ends at which I aim and by which I can both dispense with the switch-boxes and provide for a quick reversal of the car.

This application is a division of my original application, Serial No. 732,804, filed October 9, 1899, and relates especially to means whereby a trolley device of the general character described and claimed in my said application is simplified, cheapened, and made more solid as to its supporting parts.

The contact-roller is shown at H of considerable length and adapted to bear upward against the conductor I. It is supported without insulation in carriers  $h'$ , which are bolted to swinging bars  $F'$ , provided with cross-braces  $f$ . The shaft  $D'$  is considerably shorter than in the other construction, and the bearings  $d'$  are brought close to the center, the legs  $C'$  being inclined inward, as shown. The above parts are all in electrical connection with each other, so that whichever end of the trolley device be uppermost the current taken thereby from the line conductor may be conducted to the motor of the car from any convenient point. Thus a single insulated wire  $N'$  may be connected with the frame  $C'$  at  $x$  and lead thence to the motor. In this construction the whole device is insulated by a wooden or other suitable base



X, which may be the roof of the car when the latter is of suitable material. If the roof be of metal, the base X or other suitable insulation will isolate the device therefrom.

5 The arms L and springs M act to hold either end of the device—that is to say, either contact-roller—in contact with the line conductor, according to the adjustment of the trolley device and the direction of movement  
10 of the car.

What I claim is—

1. In a trolley device, the combination of a hinged and reversible frame, two laterally-elongated trolley-rollers mounted respectively at the ends of said frame, and adjustable means for pressing upward either end  
15 of said frame, according to the direction of movement of the car, to maintain the contact of the trolley-roller with the conductor wire.

20 2. In a trolley device, the combination with a pivoted frame having at each end an elongated trolley-roller, and means for pressing upward either end of said frame, of a support consisting of inwardly-inclined standards C',  
25 and bearings for the pivoted frame carried by said standards.

3. In a trolley device, the combination with a pivoted frame narrow at its middle part and expanded toward either end, and elongated  
30 trolley-rollers mounted in said expanded ends, of a support consisting of inwardly-inclined standards C' connected with the pivot or pivots of said frame near its narrow portion.

35 4. In a trolley device, the combination with a pivoted frame narrow at its middle part and expanded toward either end, and elongated trolley-rollers mounted in said expanded end, of a support consisting of inwardly-inclined  
40 standards C' connected with the pivot or pivots of said frame near its narrow portion, and a spring or springs for pressing upward either end of said frame, as may be desired, said spring or springs having a connection with  
45 said pivoted frame and extending downward to and connected with one or both of said inwardly-inclined standards.

5. In a trolley device, the combination with a pivoted frame narrow at its middle part and  
50 expanded laterally at its ends, elongated trolley-rollers mounted in said expanded ends, a pivot or pivots attached to said frame at its

narrow portion, bearings inclosing said pivots at the sides of the frame, inclined standards suitably supported on the car and extending inwardly toward the narrow portion  
55 of said frame and attached to said bearings, a crank-arm on the frame-pivot outside of one of said bearings, and a spring extending from said crank-arm to the inclined standard. 60

6. In a trolley device, the combination of a hinged and reversible frame, two laterally-elongated trolley-rollers mounted respectively at the ends of said frame, means for  
65 pressing upward either end of said frame, means for supporting the hinge or pivot of said frame from a car, and means for insulating said supporting means and the frame from the car.

7. In a trolley device, the combination with  
70 a pivoted frame having at each end an elongated trolley-roller, means for pressing upward either end of said frame, a support consisting of inwardly-inclined standards C', bearings for the pivoted frame carried by said  
75 standards, and means for insulating said standards from the car.

8. In a trolley device, the combination with a pivoted frame narrow at its middle part and expanded toward either end, and elongated  
80 trolley-rollers mounted in said expanded ends, of a support consisting of inwardly-inclined standards C' connected with the pivot or pivots of said frame near its narrow portion, and means for insulating said standards from the  
85 car.

9. In a trolley device the combination of a pivoted frame comprising V-shaped bars F' whereby said frame is formed with a narrow  
90 middle portion and expanded outer ends, a spacing device connecting the middle portions of said bars, a hinge or pivot at the narrow portion of said frame, elongated trolley-rollers mounted in the expanded ends of said  
95 frame, and a support for said frame comprising inwardly-inclined standards C' connected with said pivots.

In testimony whereof I affix my signature in presence of two witnesses.

ALEXANDER PALMROS.

Witnesses:

LEOTA I. SAYLOR,  
REGNOS HUTCHINS.