

No. 619,927.

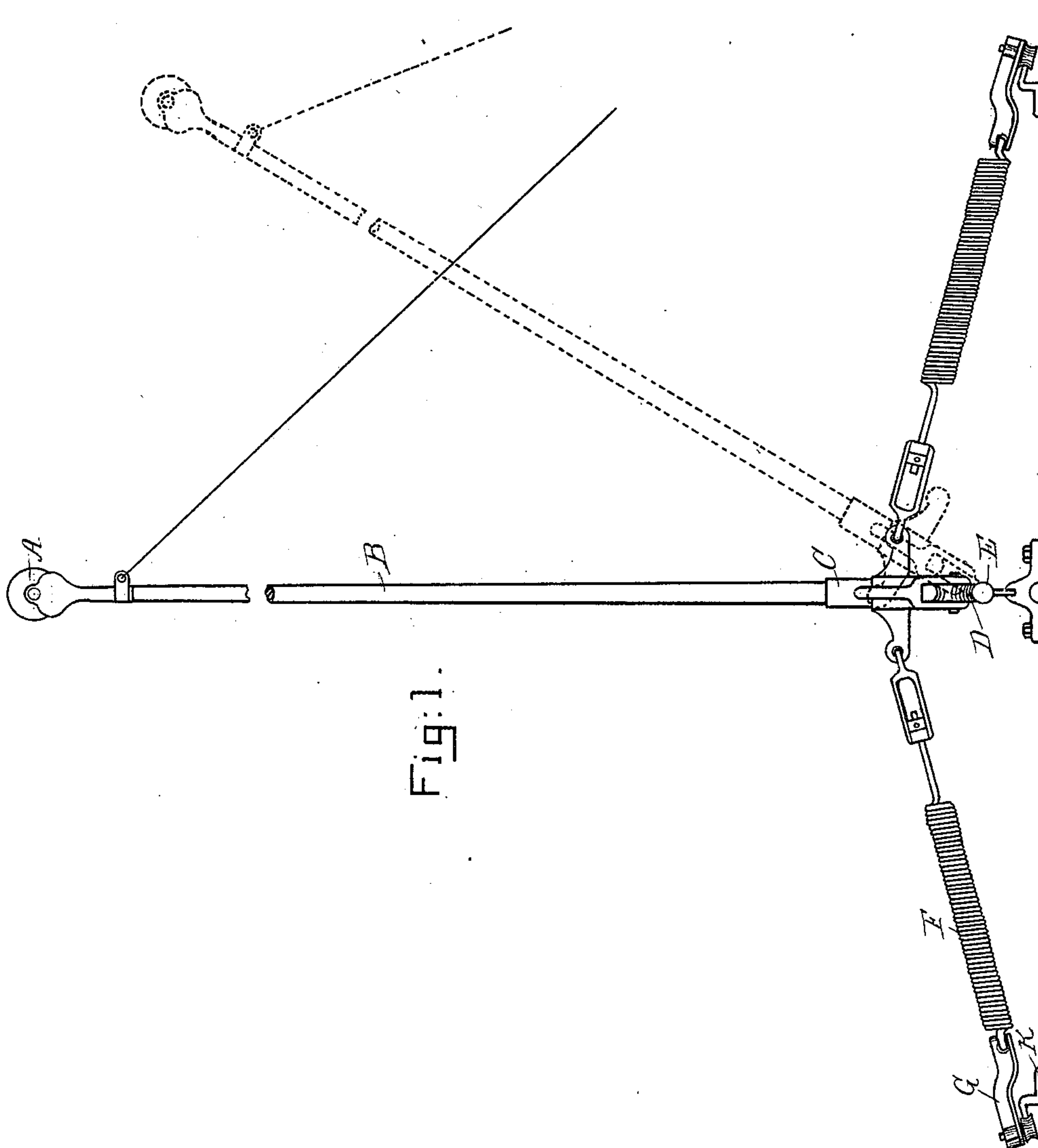
Patented Feb. 21, 1899.

E. M. BENTLEY.  
ELECTRIC RAILWAY TROLLEY.

(Application filed May 16, 1896.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.  
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L. T. Shaw

Inventor.  
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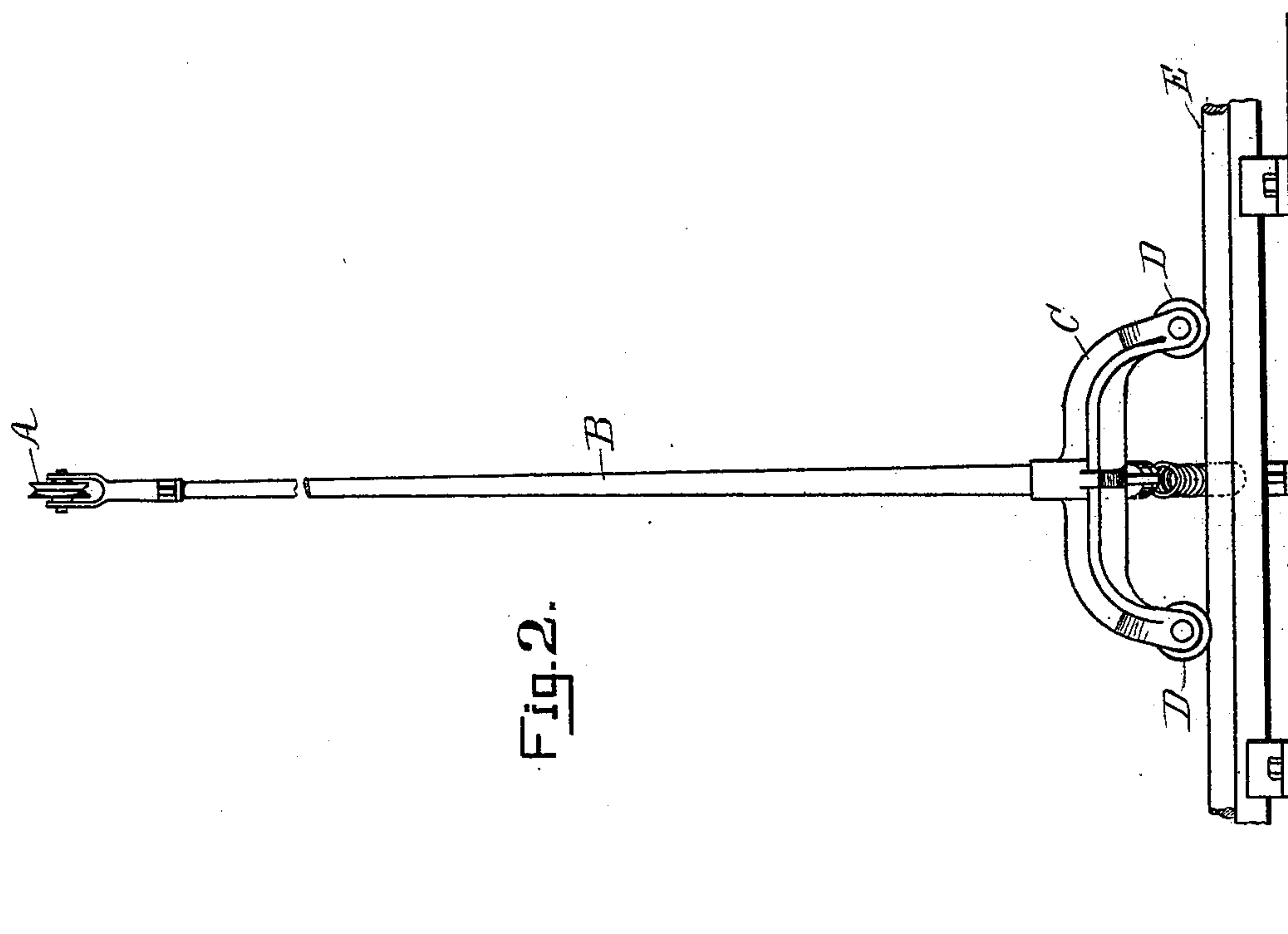


Fig. 2.

Witnesses..

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# UNITED STATES PATENT OFFICE.

EDWARD M. BENTLEY, OF NEW YORK, N. Y.

## ELECTRIC-RAILWAY TROLLEY.

SPECIFICATION forming part of Letters Patent No. 619,927, dated February 21, 1899.

Application filed May 16, 1896. Serial No. 591,757. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD M. BENTLEY, a citizen of the United States, residing in the city, county, and State of New York, have  
5 invented certain new and useful Improvements in Electric-Railway Trolleys, of which the following is a specification, reference being made to the accompanying drawings, in which—

10 Figure 1 is a side elevation, and Fig. 2 is an end elevation, of the trolley which I have invented.

My invention consists of a trolley in which there is the usual contact-wheel supported  
15 on the outer end of a long trailing arm carried on the roof of the electrically-propelled car; but instead of the ordinary vertical pivot around which the trailing arm is free to swing I provide a transverse track or guide-  
20 way on which the trolley-base may travel from side to side, so as to accommodate the contact-wheel and trailing arm to lateral inequalities of alinement in the trolley-wire with relation to the car-track.

25 In the accompanying drawings, A is a trolley-wheel journaled in the outer end of arm B and adapted in the usual manner to travel in contact with the under side of a taut wire conductor when the arm is depressed in one  
30 direction or the other and its outer end forced upward under the tension of its spring.

The arm B is carried by a base C, which has grooved rollers D running on a transverse track E, which is formed of a round rod  
35 with a supporting-spline seated in chairs placed at intervals across the car-roof. By this arrangement the trolley-arm and base cannot only roll sidewise along track E, but can also revolve forward and backward about  
40 the track as a center. Two coiled springs F are respectively attached at one end to two projections on the base C and at the other end to a hook or anchorage-piece G, traveling on track K parallel to track E. The two  
45 springs are so adjusted that when the arm B is free of the conductor it will tend to stand upright, but may be depressed in either direction against the force of one spring or the other, while the inactive spring has sufficient  
50 tension and the parts are of such dimensions

that it will not sag to such an extent as will bring it against the car-roof. The tracks K and E will be suitably braced apart, so as to withstand the tension of the springs. The trolley-arm and its base C will be maintained  
55 in position on the upper surface of guide E by the downwardly-acting force of springs F, and a weight or other tension device may be substituted for springs F.

The two sets of springs F are only essential  
60 when the trolley is to be reversible, so as to trail in either direction. In whichever direction it trails the rear spring will be slack and exercise no active function in the combination; but when the trolley is reversed  
65 the spring which was previously slack becomes the active spring and the other one becomes inactive. If the trolley is not to be reversed, but is intended to trail always in one direction, the rear spring may be omitted and  
70 the front spring will be so adjusted that when exerting no tension to press the trolley-wheel against the conductor it will allow the trolley-pole to stand slightly out of the vertical position, so as not to be in a position of unstable  
75 equilibrium and liable to fall forward.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with an inclined trolley-arm and a contact device at its outer end,  
80 of a guide-bar attached to the car and extending transversely across it, a traveling connection between the lower end of said trolley-arm and the guide-bar permitting the arm to swing bodily to and from the conductor  
85 and a spring acting to press the inclined arm and contact device thereon upward against the conductor.

2. The combination with a trolley-arm and a contact device at its outer end, of a guide-  
90 bar attached to the car and extending transversely across it, a traveling connection between the lower end of said trolley-arm and the said guide, and a laterally-moving spring connected at one end to the said trolley-arm  
95 so as to move therewith and at the other end to a similarly-moving part of the structure.

3. The combination with the inclined trolley-arm B swinging in a vertical plane to and  
100 from the conductor around a transverse axis,



a base for the said arm, rollers D, a trans-  
verse guide-bar attached to the car on which  
the rollers travel and means for holding the  
trolley-arm and base in position on the upper  
5 side of the said guide-bar.

4. The combination with a pivoted trolley-  
arm and a spring pressing the outer end of  
said arm upward, of a transverse guide on  
which the said arm may travel and a similar

transverse guide for the outer end of said 10  
spring.

In witness whereof I have hereunto set my  
hand this 5th day of May, 1896.

EDWARD M. BENTLEY.

Witnesses:

L. T. SHAW,  
E. L. SMITH.