

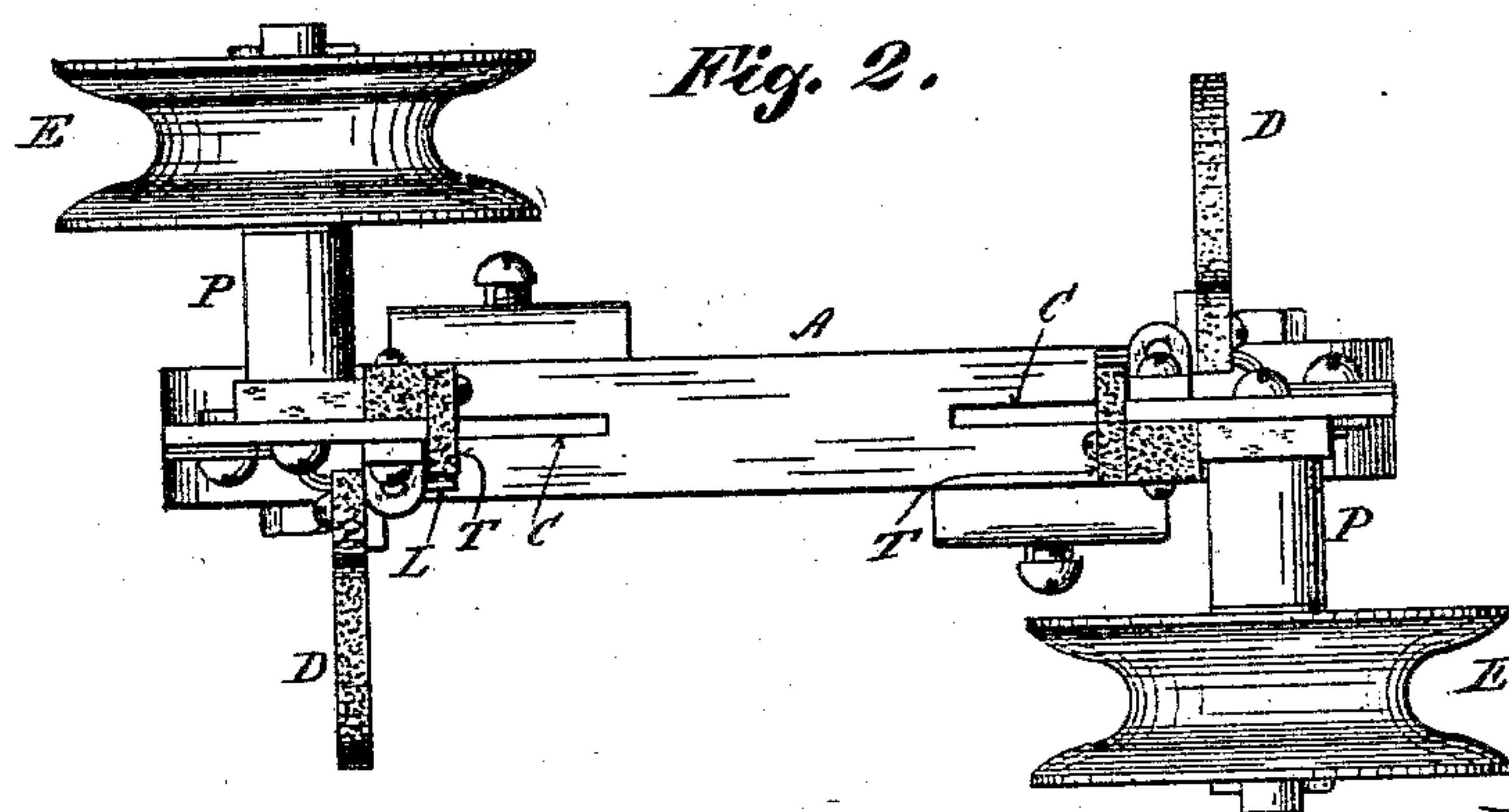
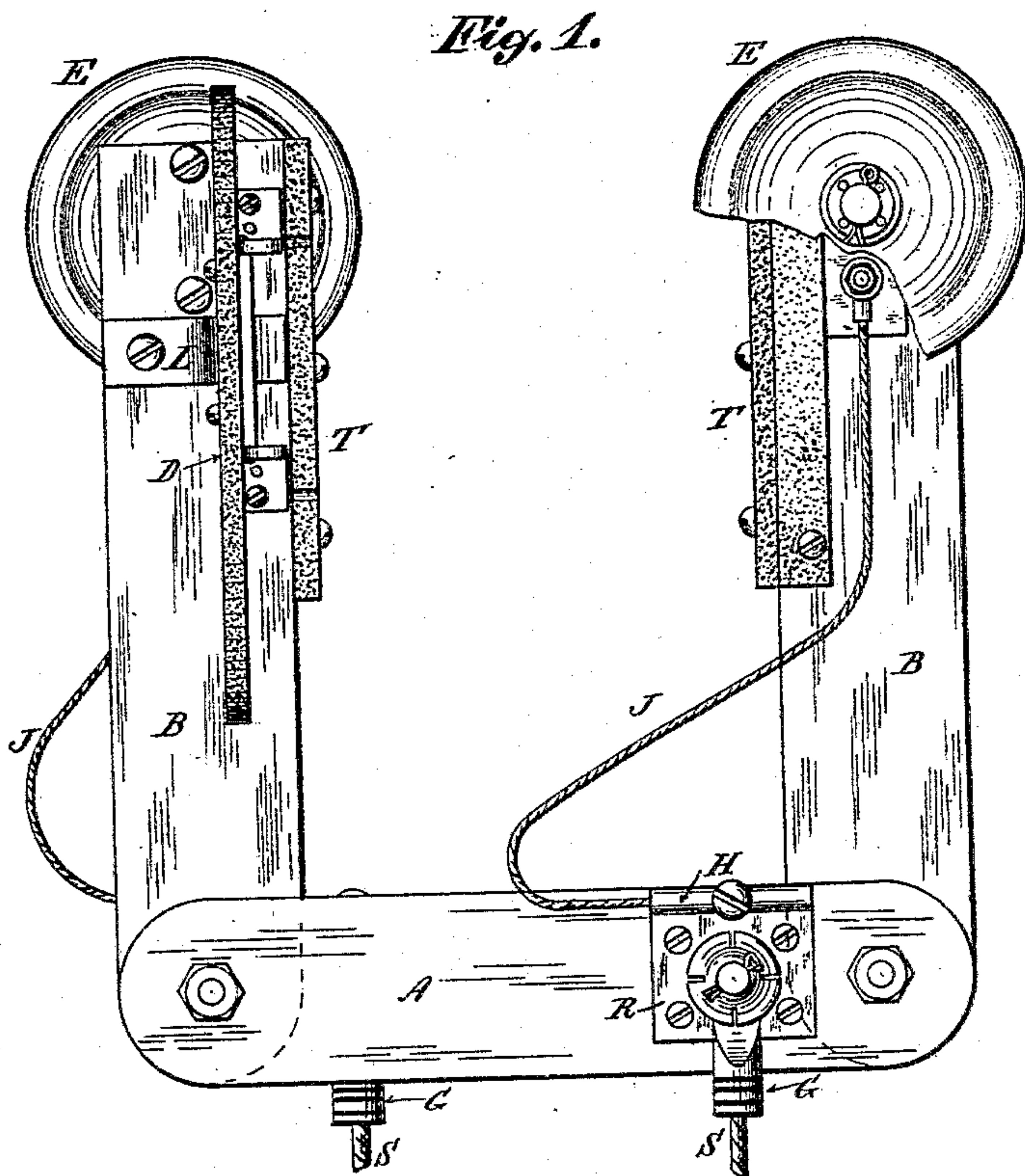
(No Model.)

2 Sheets—Sheet 1.

J. M. REAMS.  
TROLLEY FOR ELECTRIC RAILWAYS.

No. 414,583.

Patented Nov. 5, 1889.



Witnesses:

Paul Gardner  
Anthony [Signature]

Inventor:

Joseph M. Reams  
by his Attorneys  
Foster & Freeman

(No Model.)

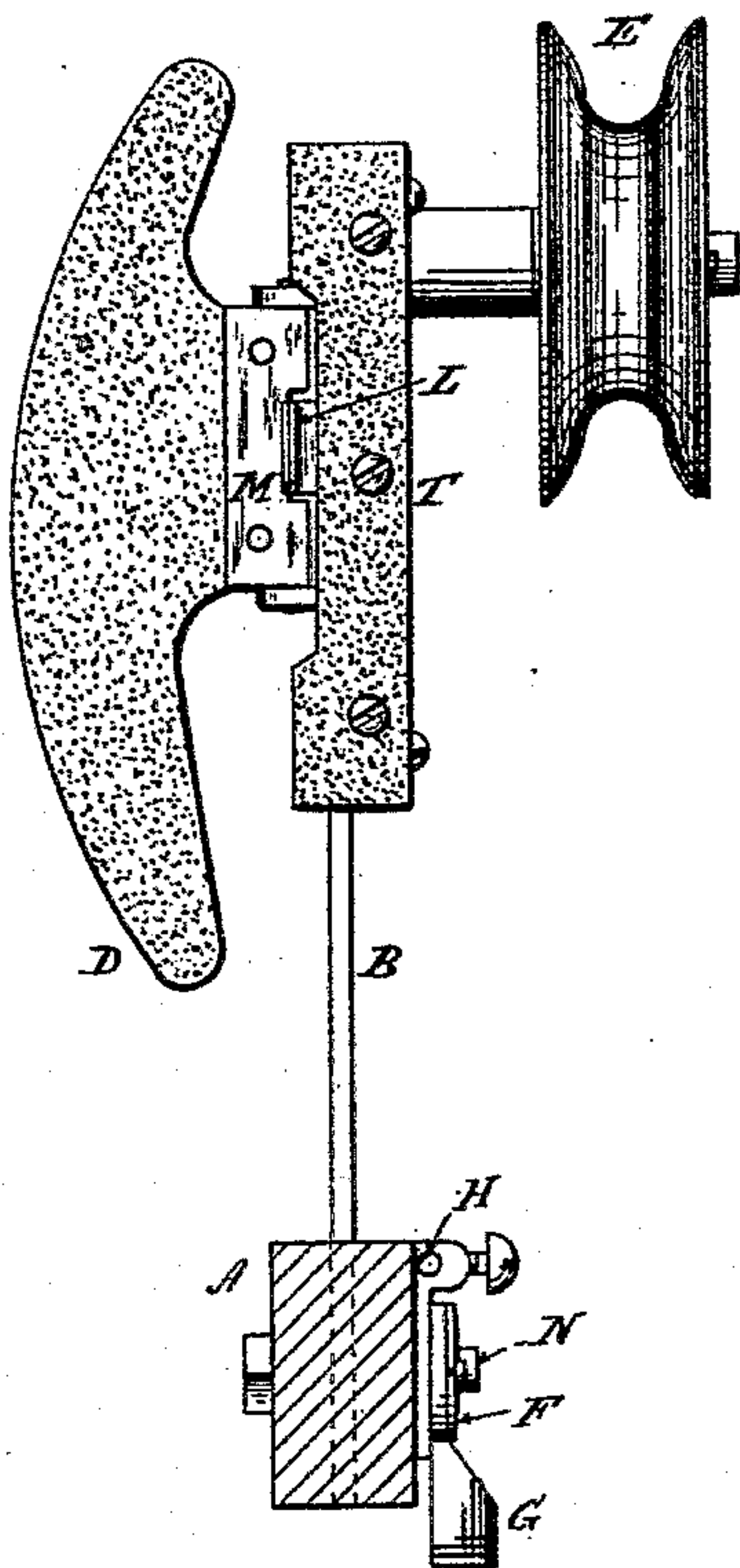
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J. M. REAMS.  
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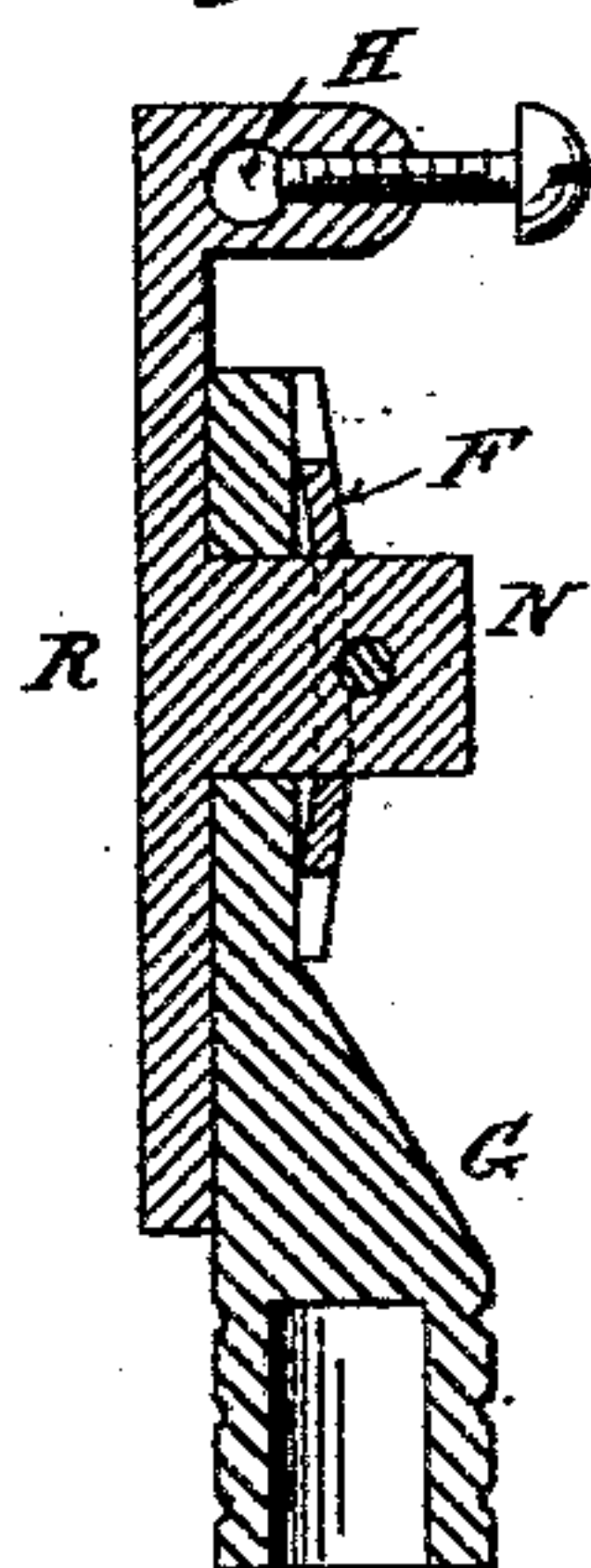
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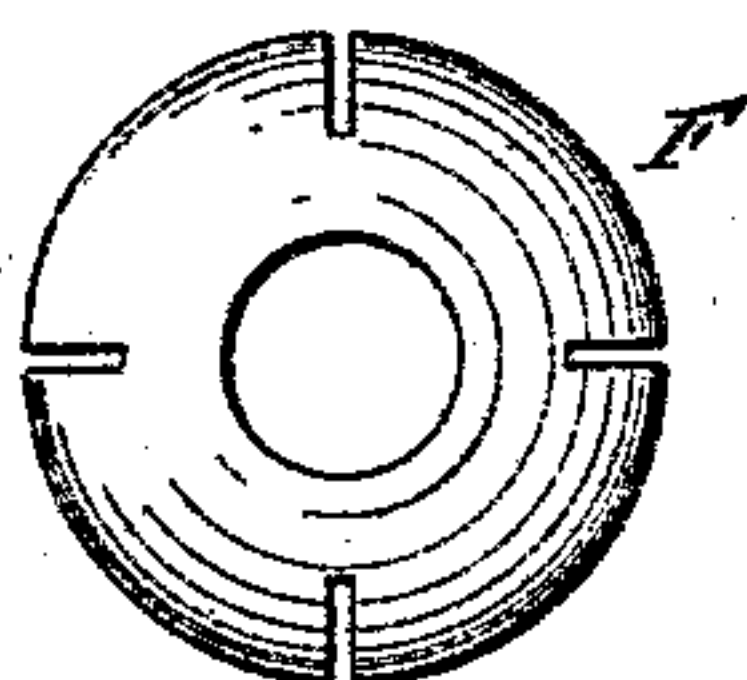
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses:

Richard D. Arner,  
Anthony J. [Signature]

Inventor:

Joseph M. Reams  
by his attorney  
Foster Freeman



# UNITED STATES PATENT OFFICE.

JOSEPH M. REAMS, OF MERIDEN, CONNECTICUT, ASSIGNOR TO THE DAFT  
ELECTRIC LIGHT COMPANY, OF NEW YORK.

## TROLLEY FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 414,583, dated November 5, 1889.

Application filed March 7, 1889. Serial No. 302,313. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH M. REAMS, of Meriden, in the State of Connecticut, have invented a new and useful Improvement in  
5 Trolleys for Electric Railways, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

This invention relates to a trolley or running contact-maker by which a continuous contact is made with two suspended cables, wires, or rods. In a general way such trolleys are well known.

The object of my invention is to form one  
15 which will be more certain to remain upon the conductors than those previously made, and which will be simple and inexpensive.

In my invention I employ generally two rolling-wheel conductors and two spring insulators or wings, as will be readily seen from the drawings.

My invention will be readily understood from the accompanying drawings, in which—

Figure 1 represents a general elevation of  
25 my trolley with one of the rollers partly broken away; Fig. 2, a plan of the same; Fig. 3, an end view, partly in section; Fig. 4, a detail of a pivoted drag-connection, and Fig. 5 a plan view of a washer connected with the  
30 same.

My trolley consists, generally, of two vertical arms B B, generally of metal, pivoted to a wooden or insulating bridge-piece A, to which the connections from the moving  
35 vehicle are carried, and by which bridge-piece A the entire trolley is drawn. Upon each of the arms B B is a roller or equivalent contact-maker E. As shown, a deeply-grooved roller is employed. These rollers  
40 are preferably somewhat loosely pivoted upon the arms P P, so as to allow a certain amount of longitudinal play. They run upon two parallel conductors carrying the current. Opposite each trolley is a resilient wing D. As  
45 shown, such wing is of the general shape shown in Fig. 3, and is held in its outer position by a spring L, being pivoted to the

arm B, as shown. This spring L, though tending to keep the wing in the position shown in Fig. 1, will allow it to bend in  
50 either direction.

The metallic conductors E are connected through their axes to flexible connections J, as shown, and thence to the plates R, provided with openings H and suitable clamp-  
55 ing-screw for maintaining electric connection with conductor J. The trolley itself is drawn by a wire or wires S, attached to the pivoted arm, as shown clearly in Fig. 4, which is in metallic contact with the conductor J. This  
60 arm swings around the pivot or post N, and is held in electrical connection with the plate R by the spring-washer F, which is held down upon the post by a pin or other suitable contrivance. In this way the arm G can swing,  
65 and at the same time maintain electric connection.

The inner sides of the arms B are preferably insulated by insulating-faces T, suitably attached to these arms, so as to prevent their  
70 coming into electrical connection if by accident the arms B should tend to come in contact with each other.

This trolley will accommodate itself to the inequalities of the wire and curves, and in  
75 practice does not run off the wires.

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

1. The combination, in a trolley constructed to run upon two parallel conductors, of a  
80 roller upon an arm and a flexible insulating wing opposite said roller and adapted to bear against the other conductor, substantially as described.

2. The combination, in a trolley, of the arms  
85 B B, bridge-piece A, rollers E E, and insulating flexible resilient wings D D, substantially as described.

3. The combination of the pivoted arms B B, the bridge-piece A, and dragging con-  
90 tact-maker G, connected with the piece A, itself pivoted upon post N and held in electrical connection with plate R by the spring-washer F, substantially as described.

4. The combination of the pivoted arms B B and bridge-piece A and insulating-face T, substantially as described.

5. The combination, in a trolley, of the roller E, mounted upon arm B, and an insulated wing D on the opposite side from the roller E and having its exterior face approximately the arc of a circle, substantially as described.

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

JOSEPH M. REAMS.

Witnesses:

C. L. ROCKWELL,

WALTER B. THOMPSON.