

PATENTED DEC. 8, 1903.

F. A. MERRICK.

**TROLLEY.**

APPLICATION FILED MAR. 12, 1902.

NO MODEL.

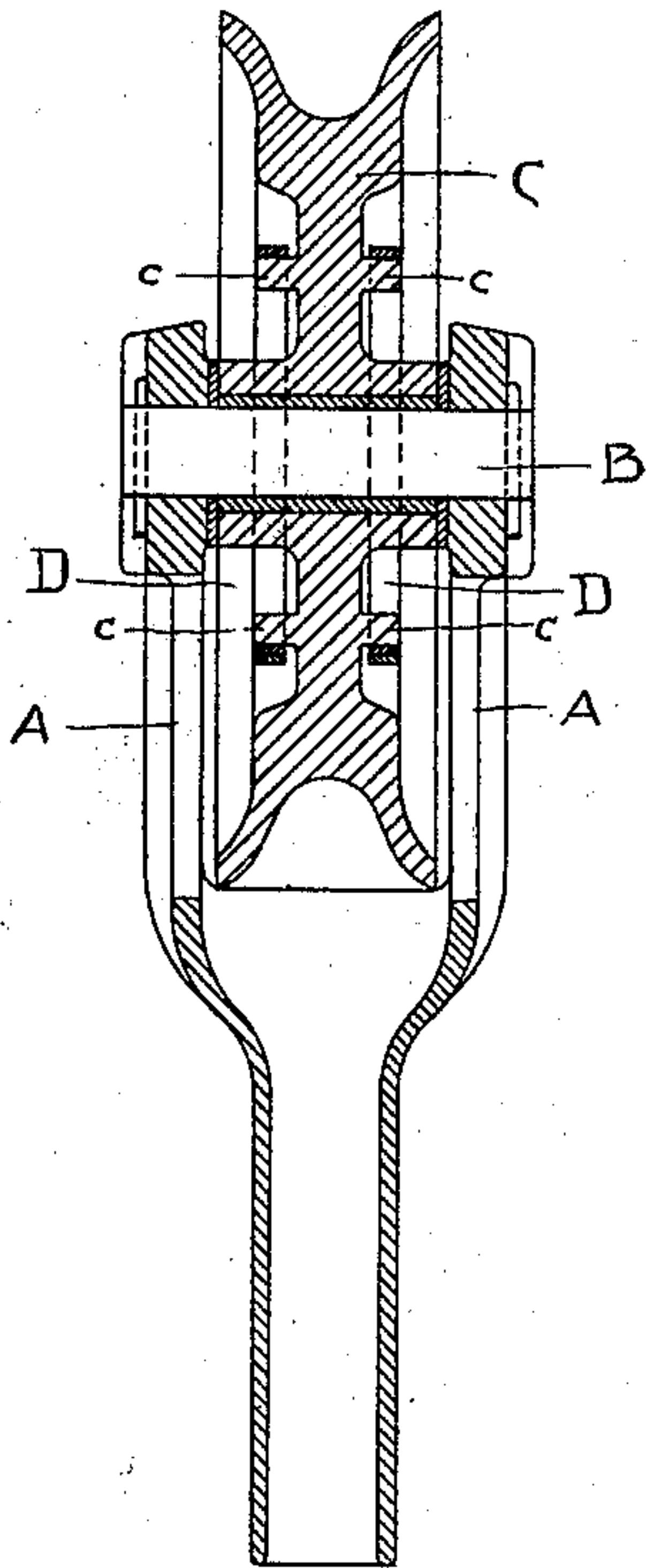


Fig. 2

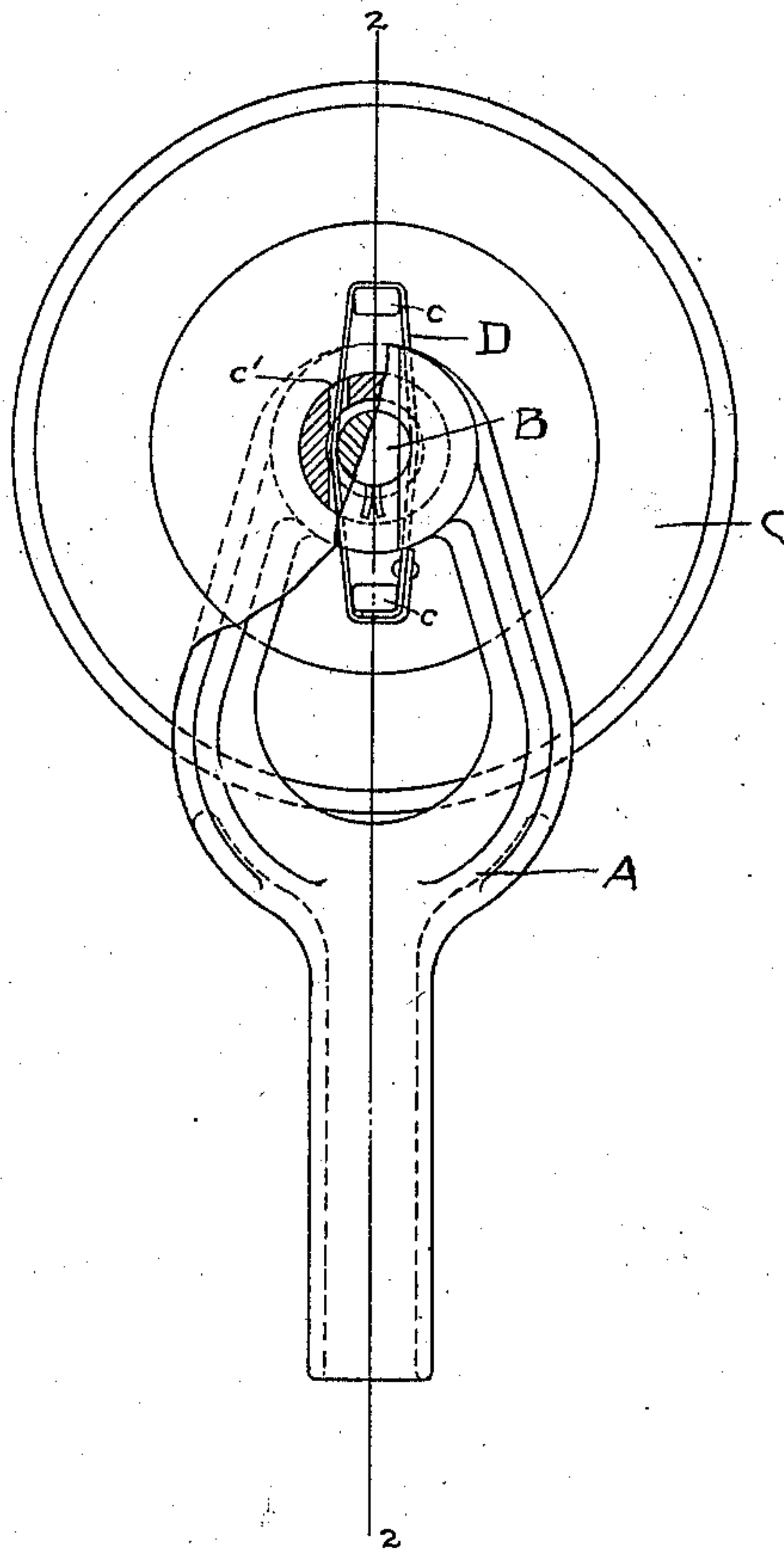


Fig. 1

**WITNESSES:**

A. V. A. B. M. Stanley

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# UNITED STATES PATENT OFFICE.

FRANK A. MERRICK, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR, BY  
MESNE ASSIGNMENTS, TO WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## TROLLEY.

SPECIFICATION forming part of Letters Patent No. 746,351, dated December 8, 1903.

Application filed March 12, 1902. Serial No. 97,840. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK A. MERRICK, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Trolleys, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to certain new and useful improvements in trolleys, and is designed to provide means of novel and efficient character for maintaining electrical contact between the trolley-wheel and the frame or harp at all times.

With this object in view my invention consists in the combination, with a harp or frame, a shaft or spindle fixedly secured therein, and a trolley-wheel loosely mounted on said shaft or spindle, of one or more contact devices secured to and carried by the said wheel and extending through the hub or hubs thereof and making rubbing contact with the said shaft or spindle in the manner hereinafter more fully described.

My invention also consists in the novel construction, combination, and arrangement of parts, all as hereinafter described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a trolley wheel and harp embodying my invention, a portion of the harp being broken away; and Fig. 2, a section on the line 2 2 of Fig. 1.

In the drawings the letter A designates the usual bifurcated harp or frame, in which is fixedly secured a shaft or spindle B.

C is the trolley-wheel, which is loosely mounted on said shaft or spindle. The sides of the wheel are formed with the diametrically opposite lugs or projections *c*, and in the hub are formed slots *c'*, which extend entirely therethrough and intersect at opposite sides the circular bore for the shaft or spindle.

D designates contact devices, which consist each of narrow flexible strips of phosphor-bronze or other material of good conducting

quality. These strips are passed up through the apertures or slots *c'* in the wheel-hub in the manner shown in the drawings and are bent around the lugs or projections *c*, their ends being secured by rivets, as shown, or the rivets may be omitted and the ends left in unsecured contact with each other, it being impossible for the strips to get out of place. In this manner each strip makes rubbing contact with the shaft or spindle at diametrically opposite sides thereof, and thus insures at all times a good electrical connection between the wheel and spindle notwithstanding the movement of the wheel due to wear on its bearing-surface. While I have shown one of these contact devices at each side of the wheel, such being the arrangement which I prefer to use, it may be sufficient in many cases to use only one of the devices. I do not, therefore, wish to limit myself in this respect to the arrangement shown, as other changes may be made in the detailed construction and arrangement of the contact device or devices without departing from the spirit and scope of my invention.

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

1. The combination with a trolley harp or frame, a shaft or spindle fixedly secured therein, and a trolley-wheel loosely mounted on said shaft or spindle, of a contact device secured to the side of the wheel and embracing the shaft or spindle through slots or apertures in the wheel-hub.

2. In a trolley, the combination with a fixed shaft or spindle, and a wheel loosely mounted thereon, of a contact device connected to the wheel and extending through the wheel-hub and making rubbing contact with opposite sides of the shaft or spindle.

3. In a trolley, the combination with a fixed shaft or spindle, and a wheel loosely mounted thereon, said wheel having lateral lugs or projections upon opposite sides of its hub, and said hub having a slot extending therethrough at each side of the shaft or spindle, of a contact-strip passed through the said



slots in contact with the axle, and secured around the said lugs or projections.

4. In a trolley, the combination with a fixed shaft or spindle, and a wheel loosely mounted  
5 thereon, of a contact device fastened to the wheel at opposite sides of the shaft or spindle and making rubbing contact therewith through slots or openings in the wheel-hub.

5. In a trolley, the combination of a fixed  
10 shaft or spindle, a wheel loosely mounted thereon and formed with lateral lugs or projections at opposite sides of its hub, and with

slots or apertures extending through the hub, and a contact device passed through said slots or openings and embracing the shaft or  
15 spindle, and secured to said lugs or projections.

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

FRANK A. MERRICK.

Witnesses:

LORETTO O'CONNELL,  
H. W. SMITH.