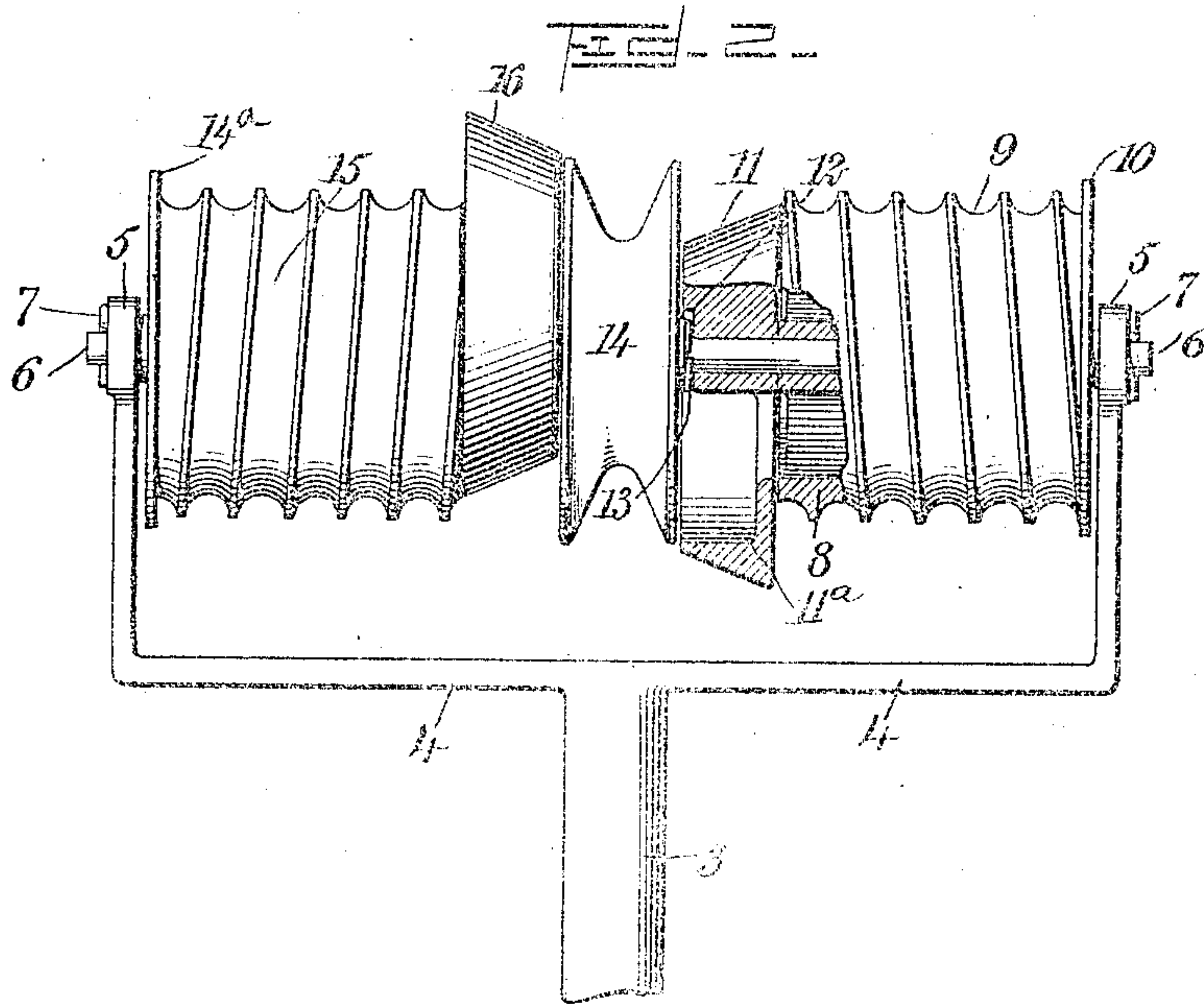
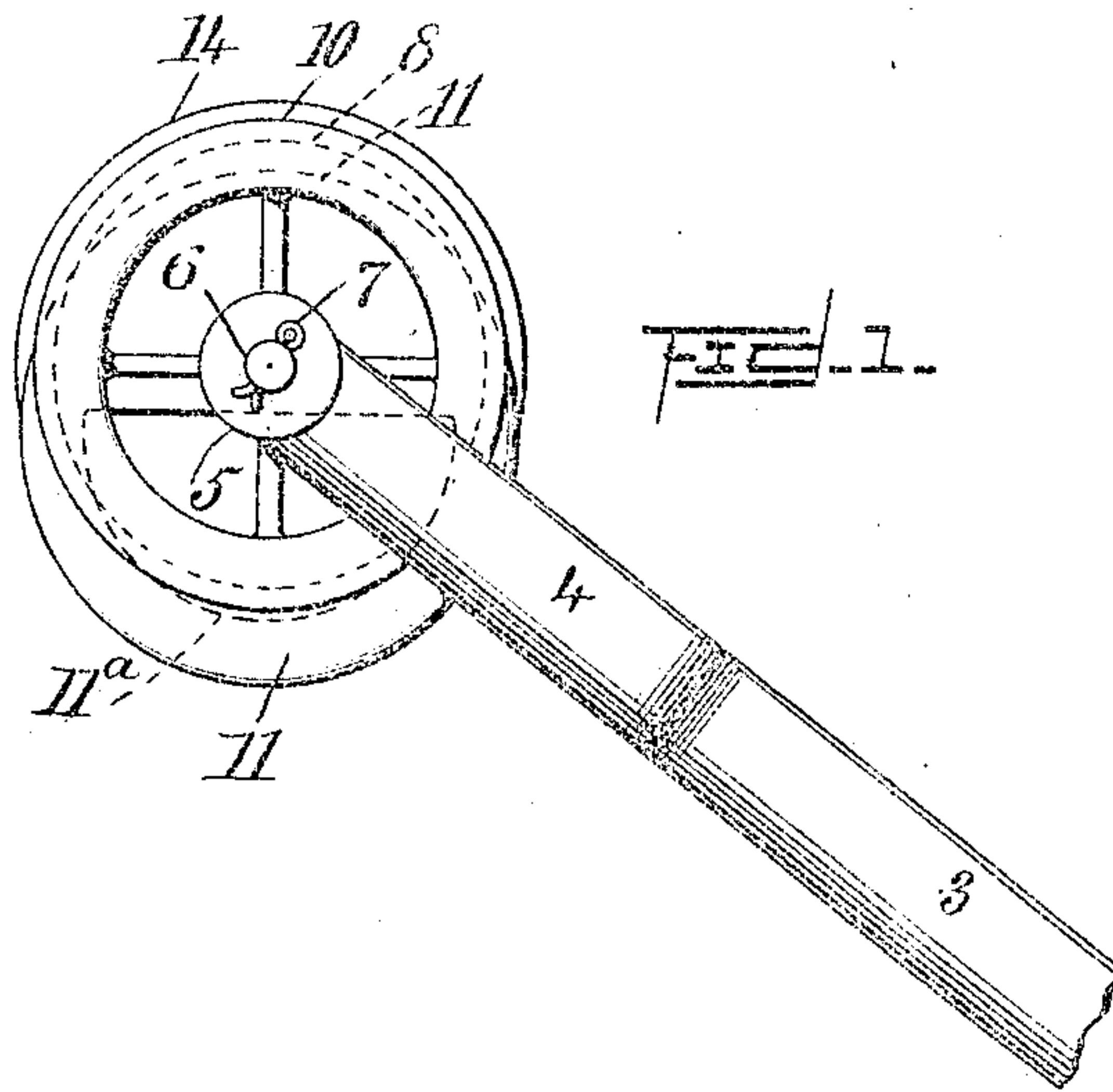


No. 837,771.

PATENTED DEC. 4, 1906.

J. T. ANDREW.  
SELF RESTORING TROLLEY.  
APPLICATION FILED SEPT. 7, 1905.



WITNESSES:

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B.

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# UNITED STATES PATENT OFFICE.

JAMES T. ANDREW, OF MONTGOMERY, ALABAMA.

## SELF-RESTORING TROLLEY.

No. 837,771.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed September 7, 1905. Serial No. 277,324.

*To all whom it may concern:*

Be it known that I, JAMES T. ANDREW, a citizen of the United States, and a resident of Montgomery, in the county of Montgomery and State of Alabama, have invented a new and Improved Self-Restoring Trolley, of which the following is a full, clear, and exact description.

My invention relates to trolleys, my more particular object being to enable the trolley-wheel or other analogous member to be readily replaced upon the conductor when dislodged therefrom.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation of a trolley embodying my invention; and Fig. 2 is a fragmentary elevation of the same, viewed as from the right of Fig. 1.

The trolley-pole is shown at 3, the harp at 4, and the bearings at 5. Mounted within these bearings, which are of annular form, is the shaft 6, the latter being retained in position by spring-pins 7 in the usual manner. A revoluble cylinder 8 is mounted loosely upon the shaft 6 and is provided with a screw or spiral portion 9, terminating in a disk 10. Mounted also upon this shaft 6 and separate from the portion 8 is a cone-shaped eccentric cam 11, having a smooth peripheral surface. This cam is provided with an annular recess 12, into which is fitted a spring-washer 13 of conducting material, such as brass. The trolley-wheel is shown at 14 and may be of substantially the usual construction. Another cylinder 15 and eccentric cam 16, similar in construction to the cylinder 8 and cam 11, are mounted on the shaft 6 on the other side of the trolley-wheel. The cams 11 and 16 are so arranged on the shaft 6 that their peripheral faces incline downwardly and inwardly toward the trolley-wheel. The spring-washer 13, by pressing the wheel 14 and the cam 11 in opposite directions, maintains the same in a predetermined fixed working relation without spacing them any perceptible distance apart. This is easily accomplished, for the reason that the annular recess 12 is of substantially the same depth as the spring-washer 13, so that the trolley-wheel 14 and the cam 11 are almost in contact and yet are spring-tensioned in relation to each other.

The cams 11 and 16 move independently of each other and of the wheel 14.

My invention is used as follows: It being desired to replace the trolley upon the conductor, the trolley-pole 3 is brought under the conductor and allowed to rise toward the same in the usual manner. Either of the spiral portions 9 or 15 being brought into engagement with the conductor and the trolley being moved along the trolley-conductor the spiral portion in question rolls against the under side of the conductor until the latter is brought into engagement with the one or the other of the eccentric cams 11 and 16. A single rotation of either cam thus engaged by the conductor forces the trolley-harp to move laterally a sufficient distance to bring the wheel 14 directly under and in contact with the conductor, as will be readily understood from Fig. 2. Hence the operator, by merely pulling the trolley-pole downwardly so as to place the trolley-harp beneath the conductor and then releasing the trolley-pole, is enabled to start the car under conditions where he need pay no further attention to the trolley. The several parts are in electrical communication with each other, so that current can be supplied for the purpose of moving the car, even when the wheel 14 is out of engagement with the conductor. The spring-washer, in addition to the office above described, serves as a conducting member as well as a spring.

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

1. In a trolley, the combination of a trolley-harp, a longitudinal member mounted thereupon, a revoluble member mounted upon said longitudinal member and provided with a portion having the conformity of an eccentric cam, another revoluble member mounted upon said trolley-harp and having the conformity of a screw, said revoluble members being adapted to move independently of each other, a trolley-wheel mounted upon said longitudinal member, and a spring-washer for positioning said trolley-wheel relatively to said first-mentioned revoluble member employed as an eccentric cam.

2. In a trolley, the combination of a trolley-harp, a trolley-wheel supported thereby, a revoluble member carried by said trolley-harp and provided with a spiral portion, and an eccentric cam separate from the revoluble



member and trolley-wheel and free to revolve independent of the said member and wheel for the purpose of guiding a conductor upon the trolley-wheel.

5 3. In a trolley, the combination of a trolley-wheel for engaging a conductor, an eccentric cam revoluble independently of the trolley-wheel for engaging said conductor and guiding it upon the trolley-wheel, and a  
10 revoluble cylinder separate from said eccentric cam and provided with a spiral groove for guiding said conductor to said cam.

4. In a trolley, the combination of a trolley-wheel a cylindrical member provided  
15 upon its periphery with a spiral groove, an eccentric cam separate from said cylindrical member and revoluble independently there-

of, and a contact member disposed between the trolley-wheel and eccentric cam.

5. In a trolley, the combination of a trolley-wheel, a revoluble cone-shaped eccentric cam independent of the trolley-wheel and having a smooth peripheral surface inclined toward the trolley-wheel, and a revoluble  
25 cylinder independent of the cam and having a peripheral spiral groove.

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

JAMES T. ANDREW.

Witnesses:

C. E. HUILS,  
H. ELMO.