(No Model.)

F. W. CANALES.

TROLLEY.

No. 589,693. Patented Sept. 7, 1897.

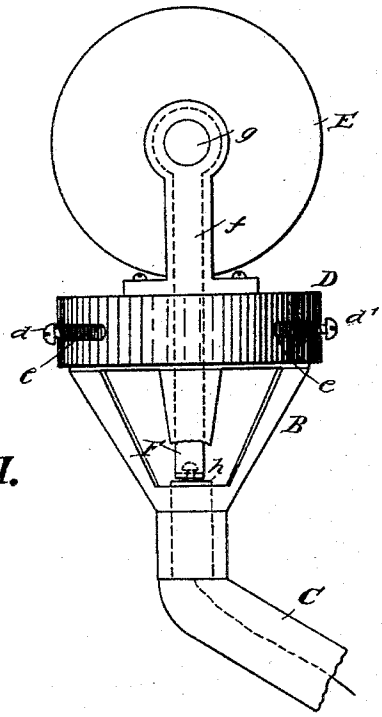


Fig. 1.

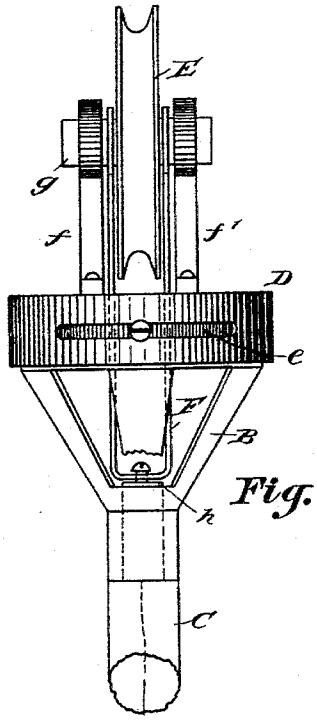


Fig. 2.

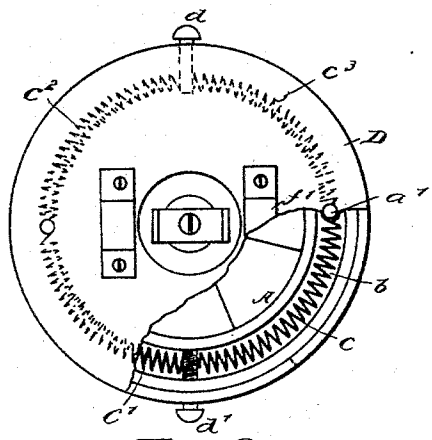


Fig. 3.

Witnesses:

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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TROLLEY.

SPECIFICATION forming part of Letters Patent No. 589,693, dated September 7, 1897.

Application filed May 21, 1895. Serial No. 550,088. (No model.)

To all whom it may concern:

Be it known that I, FRANK WILLIAM CANALES, of Portland, in the county of Cumberland and State of Maine, have invented a new and Improved Trolley, of which the following is a full, clear, and exact description.

The object of my invention is to construct a trolley for electric railways in which the grooved wheel which takes the current from the trolley-wire may, in connection with its support, turn in a plane at right angles to the plane of rotation of the wheel to enable the wheel to accommodate itself to the wire whenever its trend is different from that of the railroad-track.

My invention consists in a skeleton frame provided with a hollow annular top, an annular cap fitted to the annular top and carrying two studs at diametrically opposite points projecting downwardly into the annular top, two pairs of spiral springs placed in the groove of the annular top, the springs being attached by one end to the studs projecting downwardly from the cap, screws inserted into the annular top at diametrically opposite points, serving as abutments for the springs, standards attached to the annular top, a grooved trolley-wheel journaled on a pin passing through the standards, and a forked conductor embracing the stud on which the trolley-wheel revolves and pivotally connected with the conductor in the trolley-pole, all as will be hereinafter fully described, and pointed out in the claims.

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 all the views.

Figure 1 is a side elevation of my improved trolley. Fig. 2 is a front elevation; and Fig. 3 is a plan view, partly in section.

The annular top piece A in the present case is attached to a conical frame B, which is secured to the trolley-pole C at such an angle as to hold the annular top piece in an approximately horizontal position. To the annular top piece A is fitted a cap D, which is provided with two diametrically opposite studs a a', projecting downwardly into the annular groove b of the top piece A. In the annular groove b are placed spiral springs c c' c^2 c^3. One end of the springs c' c^2 is connected with the stud a, and the free ends of these springs abut on screws d d', inserted in diametrically opposite sides of the top piece A and extending through the groove b. In a similar manner one end of each spring c c^3 is attached to the stud a' and the free ends abut on the screws d d'. In the rim of the cap D, on diametrically opposite sides thereof, are formed slots e, through which the screws d d' pass and which permit of the rotative movement of the cap D.

To the cap D are secured standards f f', in the upper ends of which is inserted a pin g, and upon the said pin is placed the grooved trolley-wheel E, which revolves freely thereon. To the end piece h of the trolley-arm C, which is in electrical connection with the trolley-wire extending through the arm, is pivotally attached the fork F, the upper ends of the arms of which are perforated to receive the pin g, the said arms embracing the trolley-wheel E, as shown in Fig. 2. By means of this arrangement the current is taken directly from the trolley-wheel E and pins g to the end piece h of the trolley-wire without the necessity of passing through the joint between the frame B and cap D. The frame B is made conical in form to prevent it from catching on the trolley-wires.

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

1. The combination with a supporting-frame having an annular top plate, of a cap fitting over and turning upon the top plate, a trolley-wheel mounted on the cap, and double-acting springs between the cap and top plate, said springs having one end connected to the cap and their other ends engaging stops on the top plate, substantially as described.

2. The combination with a trolley-pole and a supporting-frame having an annular top plate and carried by the trolley-pole, of a cap fitted to turn on the top plate, standards secured to the cap, a trolley-wheel mounted in the standards, double-acting springs for holding the trolley-wheel normally in a central position relatively to the trolley-pole, and a

fork pivoted to the trolley-pole and apertured to receive the pivot of the trolley-wheel, substantially as described.

3. The combination with a supporting-frame, having an annular grooved top plate, of a cap fitted to turn on the top plate of the frame, a trolley-wheel mounted on the cap, and springs in the groove of the top plate, said springs having one end connected with the cap and their free ends engaging abutments carried by the top plate, substantially as described.

4. In a trolley, the combination of the trolley-arm, the trolley-wheel support formed of the frame having an annular top piece, a cap fitted to the frame and provided with standards, a pin extending through the standards, a grooved trolley-wheel placed loosely on the pin, and a swiveled forked conductor embracing the trolley-wheel and trolley-wheel pin, and connected with the conductor of the trolley-arm, substantially as specified.

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Witnesses:

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