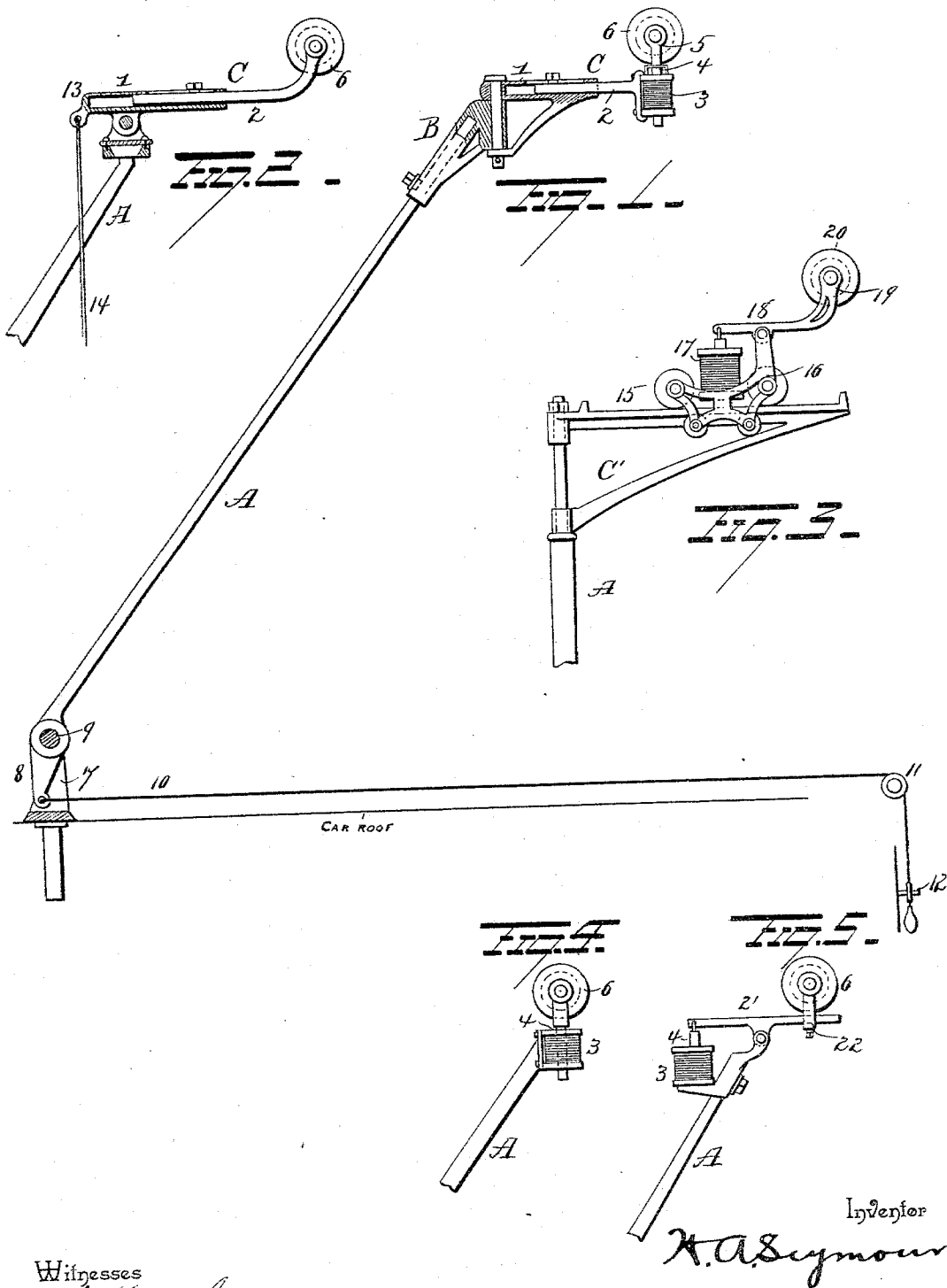


(No Model.)

H. A. SEYMOUR.
TROLLEY FOR ELECTRIC RAILWAYS.

No. 569,889.

Patented Oct. 20, 1896.



Witnesses

E. S. Nottingham.
G. F. Downing.

Inventor

H. A. Seymour

UNITED STATES PATENT OFFICE.

HENRY A. SEYMOUR, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
TO THE GENERAL ELECTRIC COMPANY, OF NEW YORK.

TROLLEY FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 569,889, dated October 20, 1896.

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To all whom it may concern:

Be it known that I, HENRY A. SEYMOUR, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Trolleys for Electric Railways; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in electric railways, and more particularly to trolley devices therefor, the object of the invention being to provide efficient means for insuring the maintenance of the trolley-wheel in contact with the conductor under all conditions of the latter, especially on curved portions of the conductor.

With this object in view the invention consists in the combination, with a trolley-pole, of an electromagnet attached to the free end thereof, and a trolley-wheel connected with said electromagnet in such manner that when the latter is energized it will act to increase the pressure of the trolley-wheel against the conductor, whereby to prevent its escape therefrom.

My invention further consists in the combination, with a trolley-pole, of a movable arm attached to the upper end thereof, a trolley-wheel carried by said arm, and an electromagnetic device also carried by said arm and connected with the trolley-wheel so as to force the latter against the conductor.

My invention further consists in the combination, with a trolley-pole, of a trolley-wheel connected with said pole in such manner as to be capable of movement toward and away from the same, and means for insuring proper contact of the trolley-wheel with the conductor.

My invention further consists in the combination, with a trolley-pole, of a trolley-wheel connected therewith in such manner as to be capable of movement toward and away from the same, and an electromagnetic device connected with said trolley-wheel and serving to force it in contact with the conductor.

My invention further consists in the combination, with a trolley-pole, of an extensible

arm attached to the upper end thereof, and a trolley-wheel carried by said extensible arm.

My invention further consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view illustrating one embodiment of my invention. Figs. 2, 3, 4, and 5 are views illustrating modifications.

A represents a trolley-pole which may be attached to a car-roof in any approved manner. To the upper end of the pole a bracket B is secured, and to said bracket an extensible arm C is pivotally attached, so as to be normally disposed in a horizontal position and project rearwardly from the trolley-pole. The extensible arm C may be composed of a tubular section 1, pivotally connected to the bracket B, and a telescopic section 2, adapted to enter the tubular section 1.

At the free end of the section 2 of the extensible arm a solenoid 3 is attached, to the core 4 of which a bifurcated bracket 5 is connected (or made integral therewith) for the reception of a trolley-wheel 6, the helix of the solenoid being so wound or its core being normally so disposed within the helix that when a current of electricity passes through said helix the core 4 will be moved upwardly (or outwardly) and the trolley-wheel 6 forced with adequate pressure against the trolley-wire to insure the maintenance of its contact therewith when the car is running. The solenoid will be included in circuit with the motors on the car, so that when the car is at rest the said solenoid will not be energized and the trolley-wheel will be pressed lightly against the conductor by the elasticity of the trolley-pole or by any suitable means at the lower end of the pole.

In Fig. 1 the trolley-pole is shown pivoted to a swiveled post 7 and provided with an arm 8, depending from its pivotal support 9. To the free end of the arm 8 a cord, wire, or similar device 10 is attached and extended over the roof of the car to one end thereof, where it is passed over a pulley 11 and terminates within reach of an operator, the free end of said cord or wire being provided with

a knob and adapted to be normally connected to a stop 12 on the car. By means of these devices the trolley-pole can be maintained in its normal upright position when the car is at rest, with the trolley-wheel bearing lightly against the conductor, and it is immaterial whether the pole be a rigid or a spring pole.

By making the arm C extensible and pivotally connecting it to the pole the trolley-wheel will be permitted to run freely on curved conductors, the increase in the distance between the end of the pole and the curved portion of the conductor being readily compensated for by the outward movement of the section 2 of said extensible arm, the pivotal movement of the arm C permitting the necessary lateral play of the trolley-wheel.

In the form of the invention shown in Fig. 2 the electromagnetic devices are omitted, and the tubular section 1 of the extensible arm is pivotally connected to a swiveled block at the upper end of the pole. In this form the section 1 of arm C is made with an extension 13, to which a cord 14 may be attached for forcing the trolley-wheel against the conductor.

In the form of the invention shown in Fig. 3 the extensible arm C is dispensed with, and in its place a bracket C' is pivotally connected to the upper end of the pole, the horizontal portion of said bracket forming a track 15 for a carriage 16. A solenoid or electromagnet 17 is mounted on the carriage 16 and adapted to actuate a lever 18, pivotally supported on the carriage. To the free end of the lever 18 a bracket 19 is attached for the reception of a trolley-wheel 20, the electromagnet or solenoid serving to press the trolley-wheel against the conductor in the manner above explained.

The devices shown in Fig. 4 are similar to those shown in Fig. 1, except that in the form of the invention shown in Fig. 4 the extensible arm C is dispensed with and the electromagnetic devices for the trolley-wheel are attached directly to the pole.

Instead of the arrangement shown in Fig. 4 an arm 21 may be pivoted between its ends to the upper end of the pole A and one end of said pivoted arm connected to the core 4 of the solenoid 3, the trolley-wheel 6 being mounted in a bracket 22, attached to the other end of said arm 21, as shown in Fig. 5.

Various other slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, and hence I do

not wish to limit myself to the precise details of construction herein set forth.

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

1. The combination with a trolley-pole and a trolley-wheel holder at the upper end of said pole, of an electromagnetic device connected with said holder and constructed to force the trolley-wheel against the conductor, substantially as set forth.

2. The combination with a trolley-pole, of a movable arm attached to the upper end thereof, a trolley-wheel carried by said arm and an electromagnetic device also carried by said arm and connected with the trolley-wheel so as to force the latter against the conductor, substantially as set forth.

3. The combination with a trolley-pole, of an extensible arm pivotally connected thereto, and a trolley-wheel carried by said extensible arm.

4. The combination with a trolley-pole, of an extensible arm attached thereto, an electromagnetic device mounted on said extensible arm and a trolley-wheel connected with said electromagnetic device in such manner as to be forced thereby against the conductor, substantially as set forth.

5. The combination with a trolley-pole, of an extensible arm attached thereto, a solenoid attached to the free end of said extensible arm and adapted, when energized, to force its core outwardly, a bracket at the upper end of said core and a trolley-wheel mounted in said bracket, substantially as set forth.

6. The combination with a pivoted trolley-pole and means under the control of the operator for maintaining the pole normally elevated, of a trolley-wheel supported by the upper end of the pole and an electromagnetic device also supported by the upper end of the pole and adapted to force the trolley-wheel against the wire when the car is running, substantially as set forth.

7. The combination with a trolley-pole, of a trailing extensible arm pivotally connected to the upper end of said pole, and a trolley-wheel carried by said arm, substantially as set forth.

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

HENRY A. SEYMOUR.

Witnesses:

S. G. NOTTINGHAM,
R. S. FERGUSON.