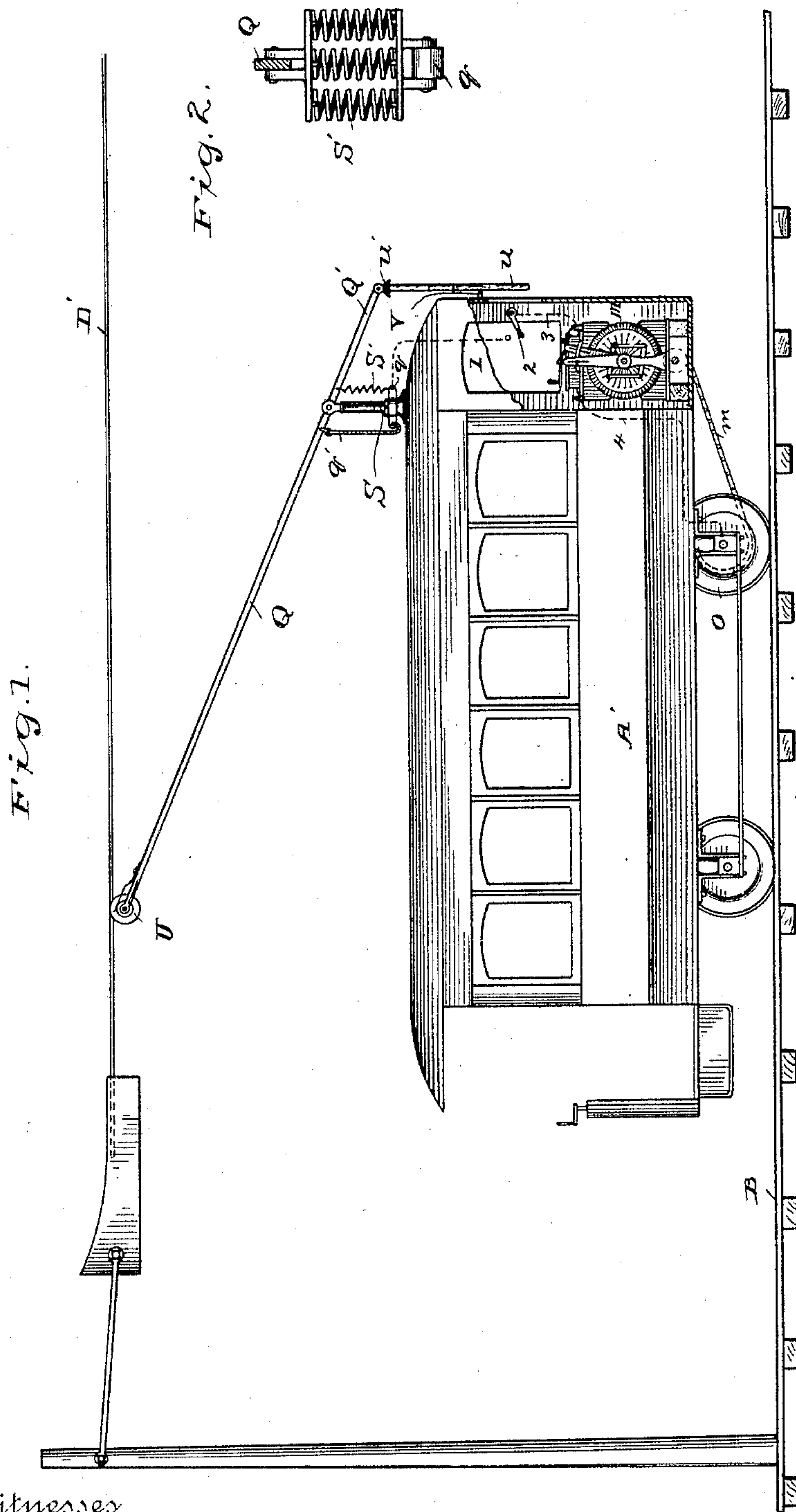


(No Model.)

C. J. VAN DEPOELE.
ELECTRIC RAILWAY TROLLEY.

No. 488,929.

Patented Dec. 27, 1892.



Witnesses

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UNITED STATES PATENT OFFICE.

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ELECTRIC-RAILWAY TROLLEY.

SPECIFICATION forming part of Letters Patent No. 488,929, dated December 27, 1892.

Original application filed June 6, 1888, Serial No. 276,260. Divided and this application filed January 31, 1890. Serial No. 338,736. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. VAN DEPOELE, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Electric Railways, of which the following is a description, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon.

This application is a division of a case filed by me June 6, 1888, Serial No. 276,260.

My invention relates to improvements in upward pressure contact devices for electric railways of the type in which the supply current is carried by a conductor suspended above or along the line of travel, contact being established between the motor-carrying vehicle and the said conductor by means of an arm extending from the upper portion of the vehicle and carrying a contact device at its outer extremity, which contact device is held upward against the underside of the conductor. The contact-carrying arm is provided with means for maintaining an upward pressure contact with the conductor and compensating for variation in height thereof, and the said contact-carrying arm is also provided with an insulated or insulating connection extending downward to some point within reach of the operator whereby the outer end of the arm may be placed or positioned as desired.

The invention also includes various details of construction and arrangement, as will hereinafter appear.

In the drawings—Figure 1 is a view in elevation showing a portion of an electric railway, equipped with an overhead conductor system and provided with contact devices embodying the invention. Fig. 2 is a detail view on an enlarged scale showing the tension spring by which the contact device is held up against the conductor.

In the drawings, A', represents an electric railway motor car.

B, are the rails of the track upon which the car A', is to be propelled, and D', is the main

supply conductor which is suspended at a suitable height above said track and extends parallel therewith. The said conductor is sustained in position by cross wires and poles or other suitable means, the particular method of suspension having no material bearing upon the feature of invention hereinafter claimed.

M, is an electric motor, here shown as being mounted upon the front platform of the car A', and connected by a sprocket chain *m*, and gearing, with the axles of the front wheels O, of the car. A post S, is secured upon and properly insulated from the top of the car A', and in the upper portion of said post is pivotally mounted a contact carrying arm Q, which is provided at its outer extremity with a grooved contact wheel U, adapted to receive the conductor D', in the groove thereof and to pass along the underside of the said conductor, and to maintain electrical contact therewith. The arm or bar Q, is provided at the part below its pivotal support with a spring S', which is secured to the said arm and also to a short arm or bracket *q*, which is carried upon the lower part of the post S. The spring S', may of course be composed of a number of springs connected together so as to coact and may be, for illustration, substantially as indicated in Fig. 2. To the arm *q*, is also secured a check-line *q'*, which may be of any suitable material and is connected at its other end to the arm Q, at a point above its pivot so that, should the contact U, become detached from the conductor, the check *q'* will prevent its rising beyond a pre-determined height. This feature, however, not being essential to the operation of the remaining ones, may be dispensed with, if desired.

The arm Q, may be constructed in a variety of ways without departing from the invention, but I prefer to form it of a bar of resilient metal, for example, steel, said arm being then carried upon a transverse hinge and pivoted upon its support S. Furthermore, the arm Q, has a portion Q', extending downwardly beyond its pivot and to the lower end of the part Q', is connected an operating han-

dle *u*, said handle being preferably of insulating material, as wood, and the same may be additionally insulated from the contact bar by an insulating device *u'*, applied at its point of connection therewith. The insulator *u'*, should be of extended form so as to prevent water running down the bar from dropping upon and establishing electrical connection with the downward extension or operating handle *u*.

By means of the insulating extension *u*, the operator can raise and lower the contact device as desired, either into or out of connection with the suspended conductor. In many instances it is desirable to be able to lower the contact device, as when passing under obstructions, &c., or where the car is being moved into positions where no suspended conductor arrangement is provided. To this end, I provide a pin, projection, or hook *V*, upon the car in such position that the piece *u*, may engage the same. The piece *u*, is formed with holes or other means for engaging the projection *V*, and it will be apparent that by means thereof the contact device may be secured in any desired position, by raising or lowering the piece *u*, and with it the contact arm and then securing the said piece in the desired position, by engagement with the projection *V*. Furthermore, by means of the said insulated connection the motorman can raise or lower the contact device and also turn the same upon its pivot when required. The insulated extension *u*, may of course be made longer or shorter according to the length or position of the contact carrying arm. The current collected from the contact *U*, may be carried downward through the metal of the contact arm and its supports, or other separate conductors carried thereby, if desired, and said current is then conveyed by a conductor 1, to a switch 2. From the switch 2, the current is further conveyed by conductor 3, to one of the binding posts of the motor *M*, and from said motor, as here shown, the current is conveyed by conductor 4, extending from the other binding post to some metallic portion of the running gear, through which it is conveyed to the track and thence back to the generator.

The essential features of the invention may be somewhat modified in accordance with the foregoing without departing from the invention.

This application being a division of a prior pending case, it will be understood that all matters herein shown and described but not claimed, continue to form part of the said prior application.

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

1. In an electric railway, the combination with a suspended conductor having a ground-

ed return, of a vehicle having a contact carrying rod or arm extending to the underside of the suspended conductor, and an insulated operating device for the said contact rod or arm.

2. In an electric railway, the combination of a suspended conductor, a vehicle having upon it a pivoted contact arm, and an operating device for said arm extending down outside of the vehicle.

3. In electric railways, the combination of a moving vehicle, a suspended conductor and a contact arm extending upwardly from the top of the vehicle toward the underside of the conductor and provided with a downwardly extending hand lever at or near its lower extremity whereby said arm can be raised or lowered as desired.

4. In an electric railway, the combination of a suspended conductor, a vehicle having upon it a longitudinally pivoted contact arm, and an operating device for said arm extending down to the end platform of the vehicle.

5. In electric railways, the combination of a moving vehicle, a suspended conductor, a contact arm extending upwardly from the top of the vehicle and provided with a downwardly extending hand lever at or near its lower extremity, and stops arranged to engage the said lever to hold the contact arm in any desired position.

6. In an electric railway, the combination of a suspended conductor, a vehicle adapted to be moved parallel with said conductor and carrying a support, a contact-carrying arm pivotally mounted upon said support, an insulated operating device for said arm extending down outside of the vehicle, a spring for imparting upward movement to the outer end of the arm, and a check for limiting the range of upward movement.

7. In an electric railway, the combination of a suspended conductor, a vehicle provided with suitable support, and a contact arm extending between the support upon the vehicle and the suspended conductor and composed of a flattened bar of resilient material, said bar being supported transversely upon the vehicle, and a spring connected thereto for holding the outer end of the bar upward toward the conductor.

8. In an electric railway, the combination of a suspended conductor, a vehicle provided with a suitable support, and a contact arm extending between the support upon the vehicle and the suspended conductor and composed of a flattened bar of resilient material.

In testimony whereof I hereto affix my signature in presence of two witnesses.

CHARLES J. VAN DEPOELE.

Witnesses:

FRANKLAND JANNUS,
S. G. HOPKINS.