(No Model.)

2 Sheets—Sheet 1.

D. MASON.

ELECTRIC RAILWAY TROLLEY.

No. 488,022. Patented Dec. 13, 1892.

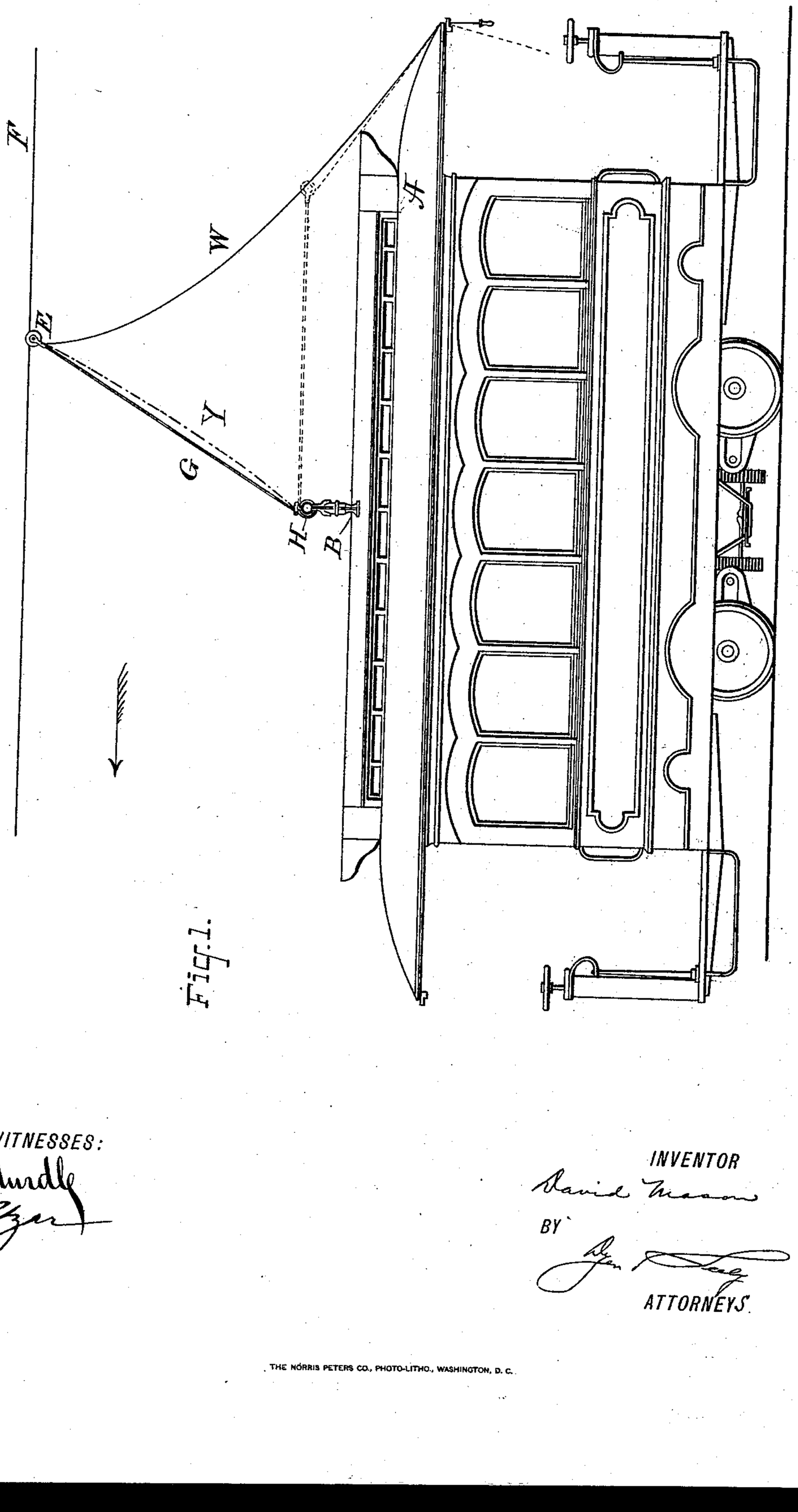


Fig. 1.

WITNESSES:

J. A. Hurdle

INVENTOR

David Mason

BY

Glen Lea

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

D. MASON.

ELECTRIC RAILWAY TROLLEY.

No. 488,022. Patented Dec. 13, 1892.

Fig. 7.

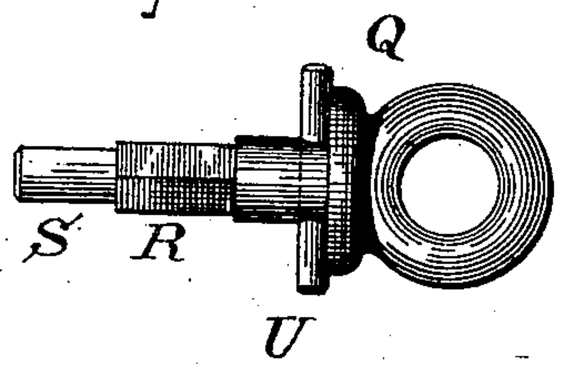


Fig. 6.

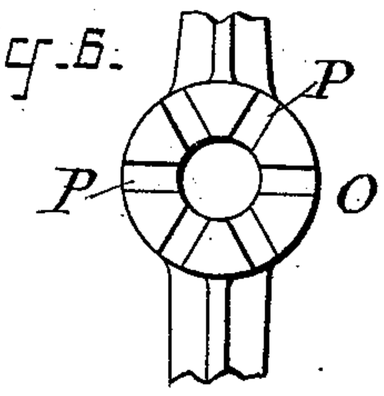


Fig. 5.

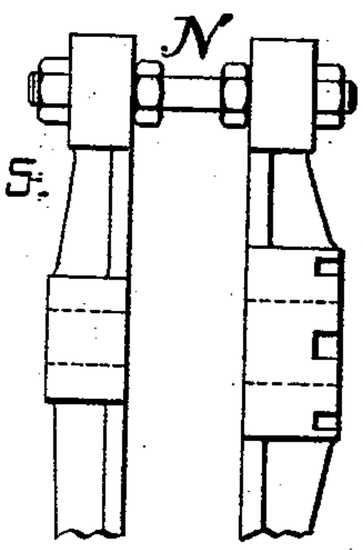


Fig. 2.

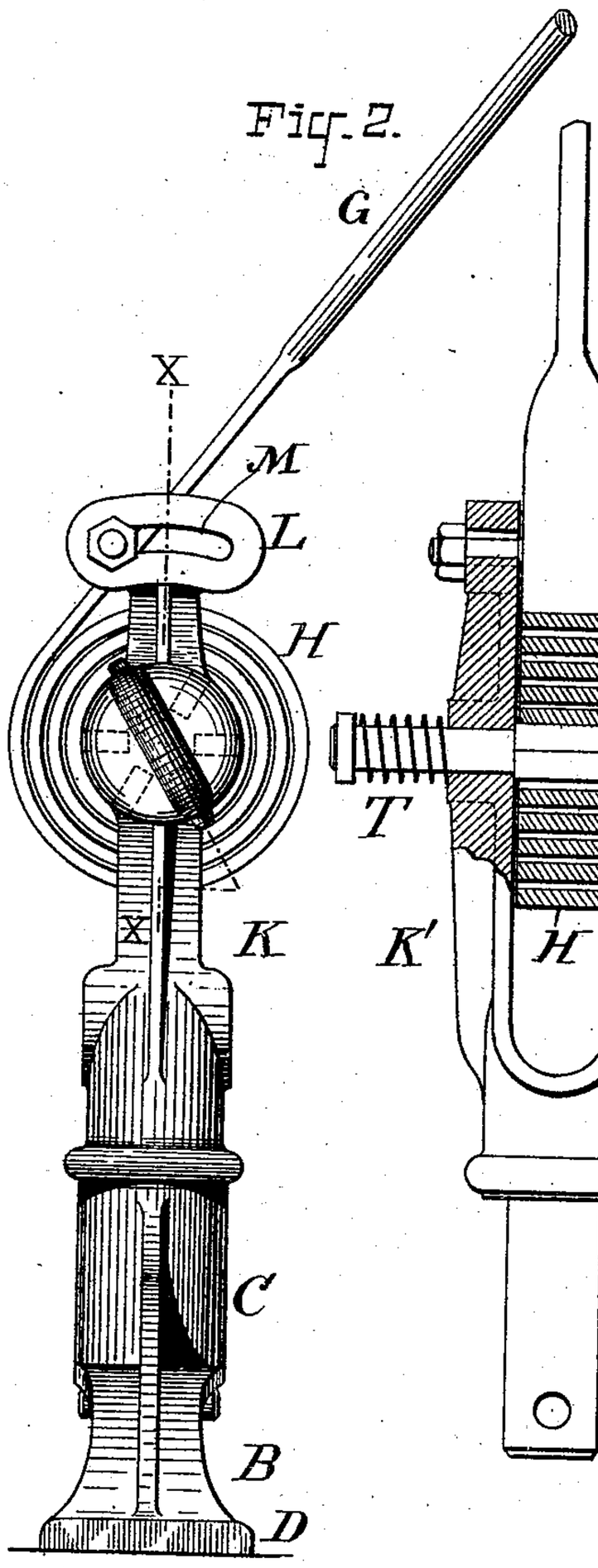


Fig. 3.

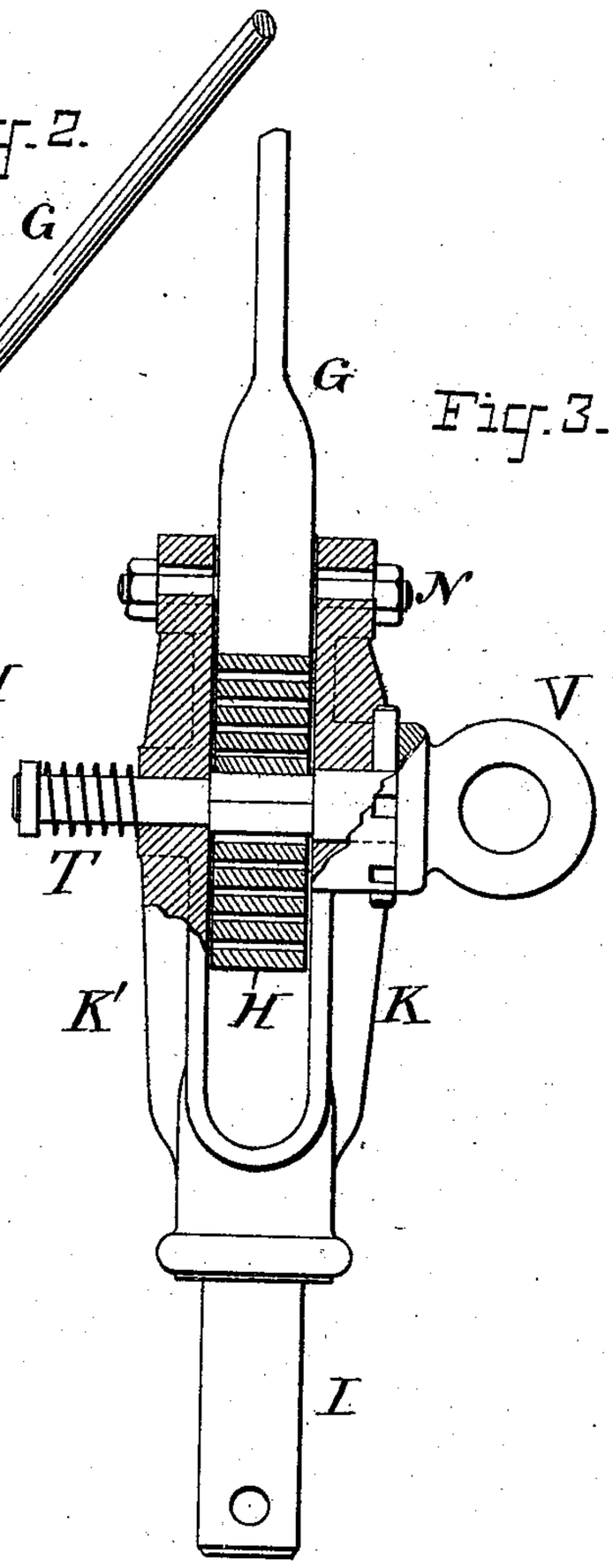
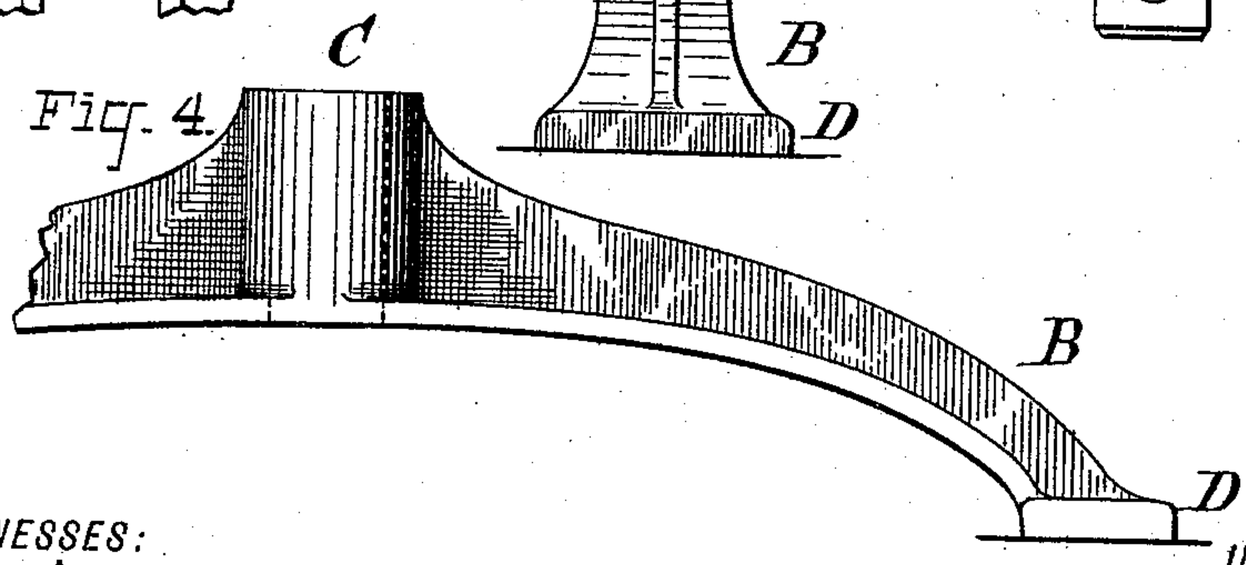


Fig. 4.



WITNESSES:

J. A. Hurdle

E. Ebert

INVENTOR

David Mason

BY

Geo. H. Lee

ATTORNEYS.

UNITED STATES PATENT OFFICE.

DAVID MASON, OF NEW YORK, N. Y, ASSIGNOR TO THE SPRAGUE ELECTRIC RAILWAY AND MOTOR COMPANY, OF SAME PLACE.

ELECTRIC-RAILWAY TROLLEY.

SPECIFICATION forming part of Letters Patent No. 488,022, dated December 13, 1892.

Application filed November 11, 1889. Serial No. 329,892. (No model.)

To all whom it may concern:

Be it known that I, DAVID MASON, a citizen of the United States, residing at New York city, in the county and State of New York, have invented a certain new and useful Improvement in Electric Railways, of which the following is a specification.

My invention relates to that class of electric railways in which an overhead conductor is used and a contact device carried by the car makes an underneath contact with said conductor.

My invention relates more especially to the support for the contact device, my object being to provide a simple and effective construction for such support, whereby the contact device will be permanently held in position against the conductor, and whereby such contact device can be adjusted vertically and laterally, so as to be adapted for changes in the height of the conductor and for variations in the line of the conductor.

My invention is illustrated in the accompanying drawings.

Figure 1 is a view in elevation of a railway-car embodying my invention; Fig. 2, a side view of the lower portion of the trolley-support; Fig. 3, an irregular vertical section on the line X X of Fig. 2; Fig. 4, a front view of a portion of the support attached to the roof of the car; Fig. 5, a front view of the upper portion of the vertical support; Fig. 6, a side view of the ratchet for adjusting the spring, and Fig. 7 a view of the adjusting-key.

A represents an electric-railway car, which, as will be understood, is provided with an electric motor carried upon the car for propelling it.

Upon the roof of the car is placed an arched standard B, which is made of the arched shape in order to conform to the arched roof of the car. At its middle part the standard B is formed into a sleeve C. The standard has feet D, by which it is attached to the roof.

The contact device is a grooved wheel or trolley E, which runs on the under side of the wire F, which is suitably supported overhead. The trolley E is mounted in suitable bearings at the end of a long rod G, preferably made of iron, the lower end of which is formed into or connected with a coiled spring H. A stem I enters the socket C and is adapted to turn therein, and above the stem I there extend two side pieces K, which extend up above the coiled spring H and each of which carries at its upper end a head L, provided with a curved slot M. A bolt N extends across through the slots M and forms a stop for the trolley-rod G. One of the side pieces K has formed upon it or attached to it at the center of the coiled spring a disk O, which has slots P on its face, so that the disk forms a ratchet. A key Q passes through the disk O and through the center of the coiled spring, the inner end of such spring being attached to the squared portion R of the key, and the end S of the key passes through the other side piece K′ and has coiled upon it a spiral spring T, by means of which the cross-pin U of the key is held in the slots P of the disk O. The key has a ring V, through which a suitable tool may be passed for turning the key to tighten the spring.

It will be seen that the trolley-pole is carried by a flexible resilient support, which presses it constantly against the wire F, it being prevented by the bolt N from swinging past the vertical position. A line W is attached to the top of the pole, and by means of this line the pole may be drawn down to the position shown in dotted lines in Fig. 1 or to any intermediate position, so that it can be brought down as close to the roof of the car as may be necessary, where by reason of passing under bridges or tunnels or other obstructions the height of the overhead wire is changed. The spring itself permits the trolley to adapt itself to slight variations in the height of the line or to slight irregularities in its direction. In addition the rod may be swung entirely around in the socket C by means of the line W, whereby its inclination may be reversed when desired. The current may be conveyed from the trolley E to the car by the wire Y, or the current may, if desired, be conveyed by the pole itself.

What I claim is—

1. The combination, with an electric-railway car and an overhead conductor, of a contact device making underneath contact with

said conductor, a pole carrying said contact device, and a flexible resilient support for said pole, substantially as set forth.

2. The combination, with an electric-railway car and an overhead conductor, of a contact device making underneath contact with said conductor, a pole carrying said contact device, and a flexible resilient support for said pole adapted to turn around a vertical axis, substantially as set forth.

3. The combination, with an electric-railway car and an overhead conductor, of a contact device making an underneath contact with said conductor, a pole carrying said contact device, and a spring carrying said pole and supported from the roof of the car, substantially as set forth.

4. The combination, with an electric-railway car and an overhead conductor, of a contact device making an underneath contact with said conductor, a pole carrying said contact device, and a coiled spring supporting said pole and connected with the car, substantially as set forth.

5. The combination, with an electric-railway car and an overhead conductor, of a contact device making an underneath contact with said conductor, a pole carrying said contact device, and a spring coiled on a horizontal axis and connected with the car and exerting an upward pressure upon said pole, substantially as set forth.

6. The combination, with an electric-railway car and an overhead conductor, of a contact device making an underneath contact with said conductor, a pole carrying said contact device, and a spring coiled on a horizontal axis, supporting said pole, and connected with the car, substantially as set forth.

7. The combination, with an electric-railway car and an overhead conductor, of a contact device making underneath contact with said conductor, a pole carrying said contact device, and a spring coiled on a vertical plane, supported from the roof of the car, and exerting an upward pressure upon said pole, substantially as set forth.

8. The combination, with an electric-railway car and an overhead conductor, of a contact device making underneath contact with said conductor, a pole carrying said contact device, and a spring coiled in a vertical plane, carrying said pole, and supported from the roof of the car, substantially as set forth.

9. The combination, with an electric-railway car and an overhead conductor, of a contact device making underneath contact with said conductor, a pole carrying said contact device, a flexible resilient support for said pole, and a stop for said pole, substantially as set forth.

10. The combination, with an electric-railway car and an overhead conductor, of a contact device making underneath contact with said conductor, a pole carrying said contact device, a coiled spring carrying said pole, and a vertical support rising from the roof of the car and carrying said spring, substantially as set forth.

11. The combination, with an electric-railway car and an overhead conductor, of a contact device making underneath contact with said conductor, a coiled spring carrying said contact device, and means for altering the tension of said spring, substantially as set forth.

12. The combination, with an electric-railway car and an overhead conductor, of a contact device making underneath contact with said conductor, a spring coiled on a horizontal axis and exerting upward pressure on said contact device, and means for altering the tension of said spring, substantially as set forth.

13. The combination, with an electric-railway car and an overhead conductor, of a contact device making underneath contact with said conductor, a coiled spring carrying said contact device, and a key and ratchet for altering the tension of said spring, substantially as set forth.

14. The combination, with an electric-railway car having an arched roof, of an arched standard on said roof and a trolley-support carried by said standard, substantially as set forth.

15. The combination, with an electric-railway car and an overhead conductor, of a contact device making an underneath contact with said conductor, a pole carrying said contact device, and a coiled spring carrying said pole and connected by a swiveling connection with the car, substantially as set forth.

16. The combination, with an electric-railway car and an overhead conductor, of a contact device making an underneath contact with said conductor, a pole carrying said contact device, and a spring coiled on a horizontal axis carrying said pole and connected by a swiveling connection with the car, substantially as set forth.

17. The combination, with an electric-railway car and an overhead conductor, of a contact device making an underneath contact with said conductor, a pole carrying said contact device, and a spring coiled on a horizontal axis, exerting an upward pressure on said pole, and connected by a swiveling connection with the car, substantially as set forth.

This specification signed and witnessed this 7th day of November, 1889.

DAVID MASON.

Witnesses:
A. W. SEELY,
WILLIAM PELZER.