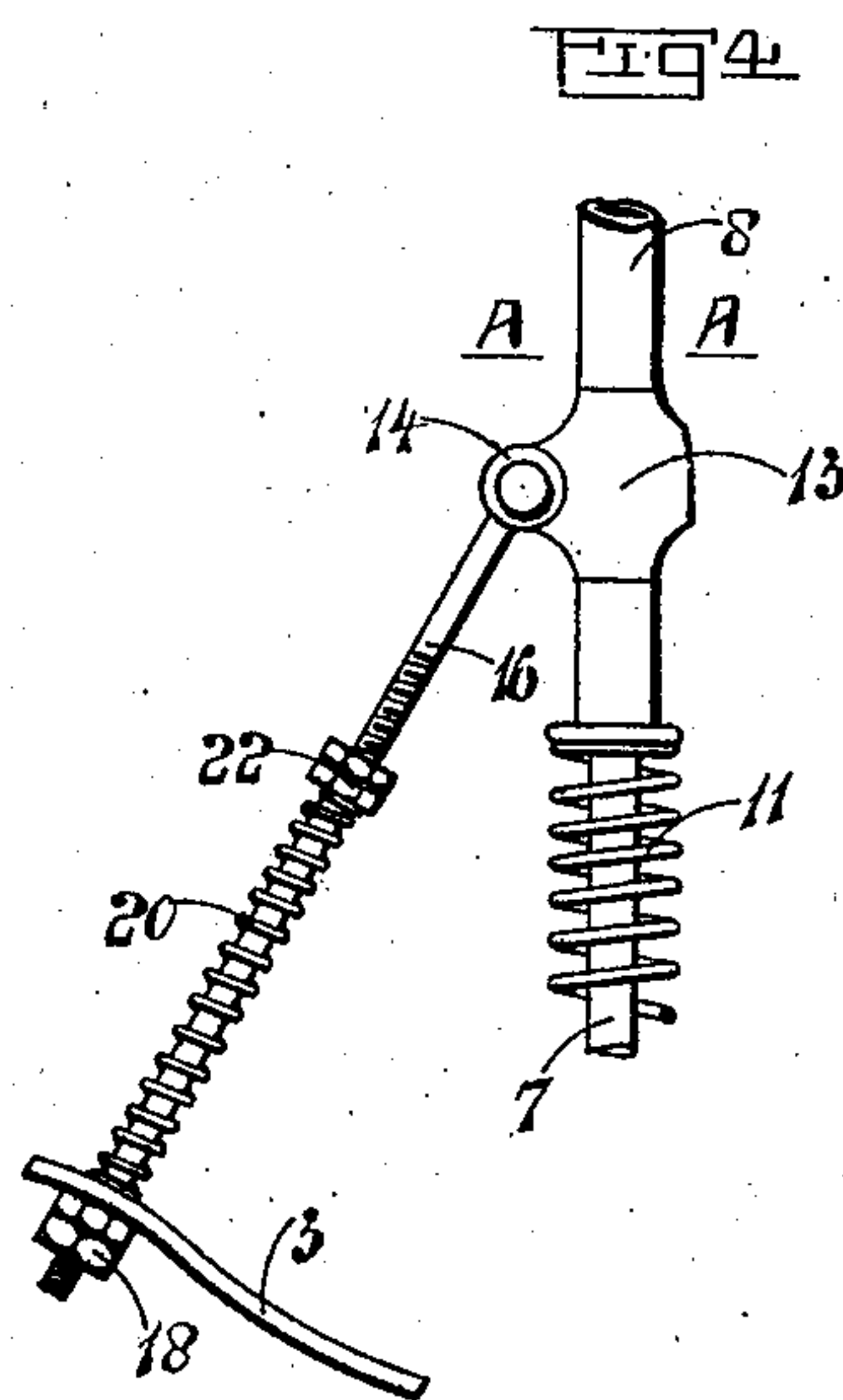
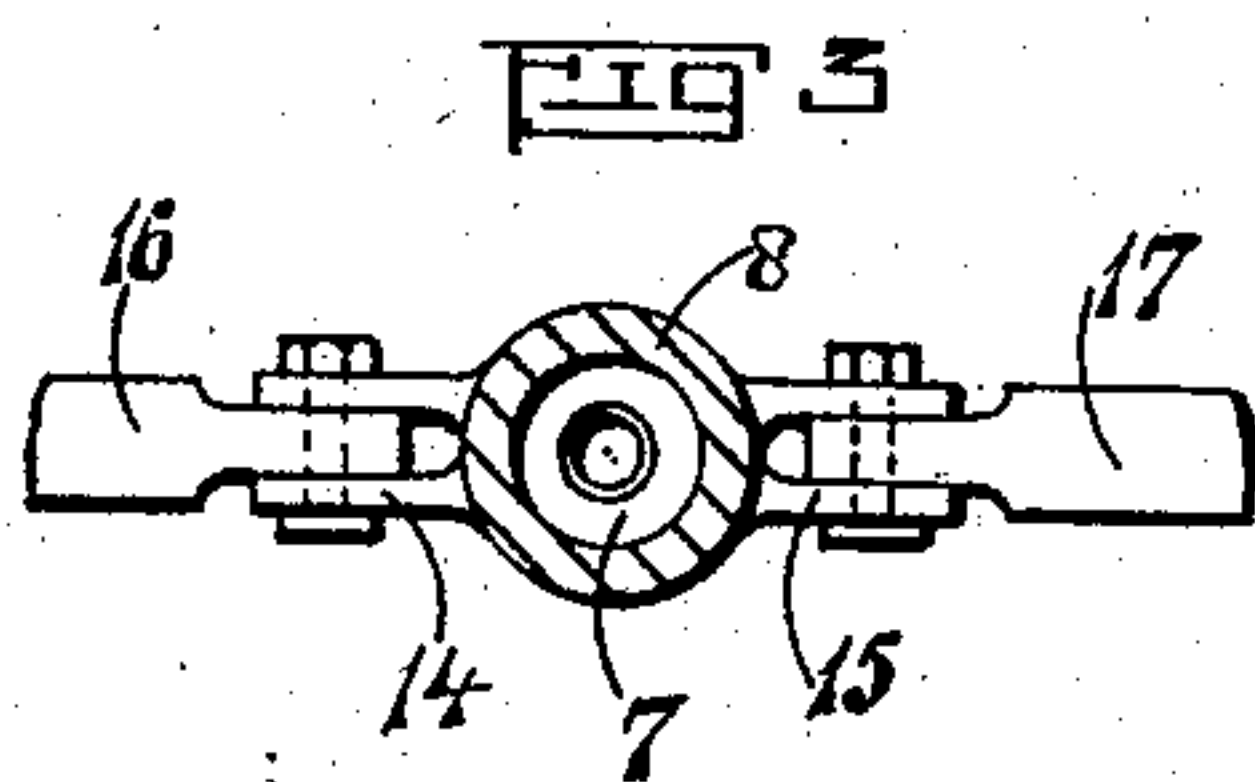
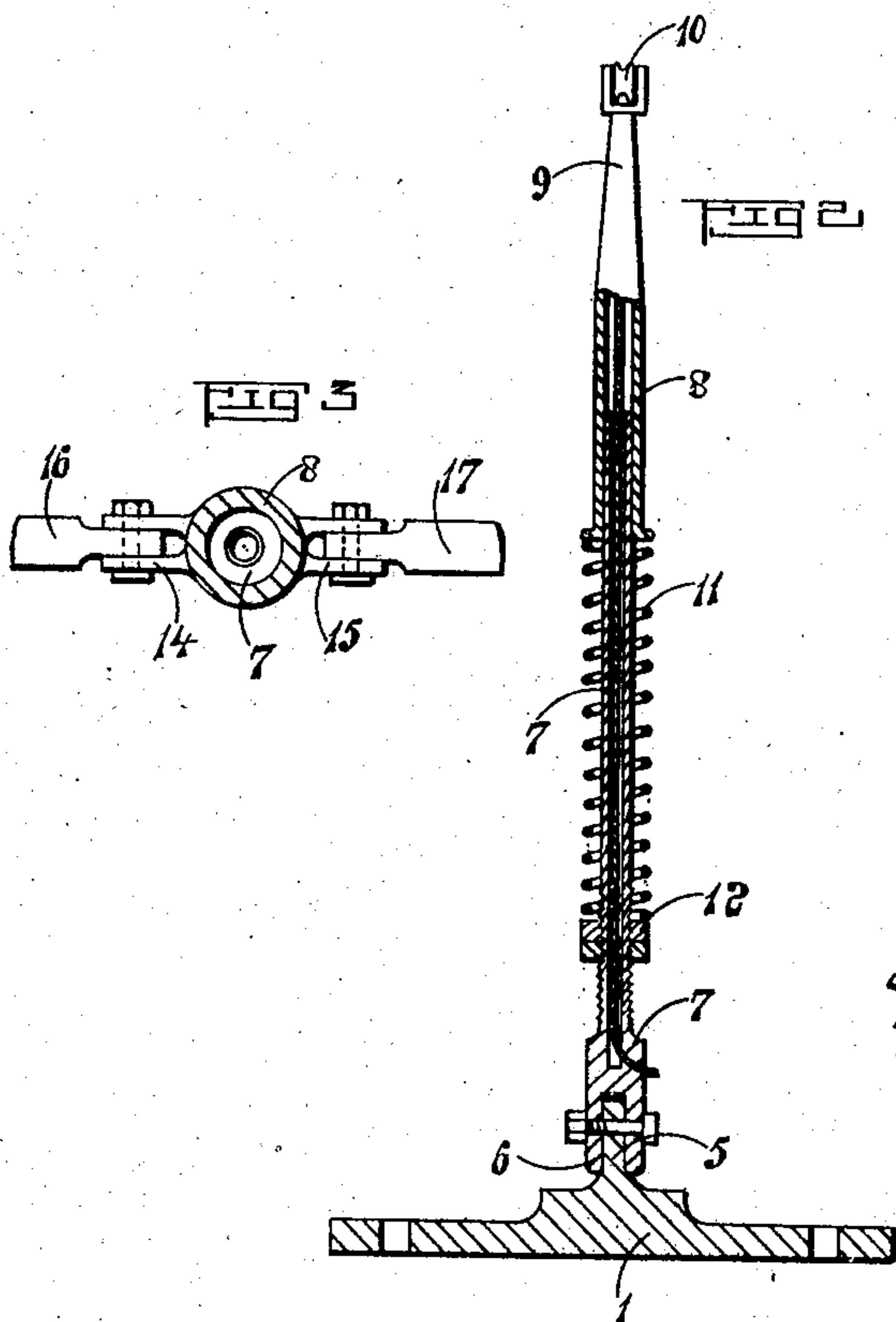
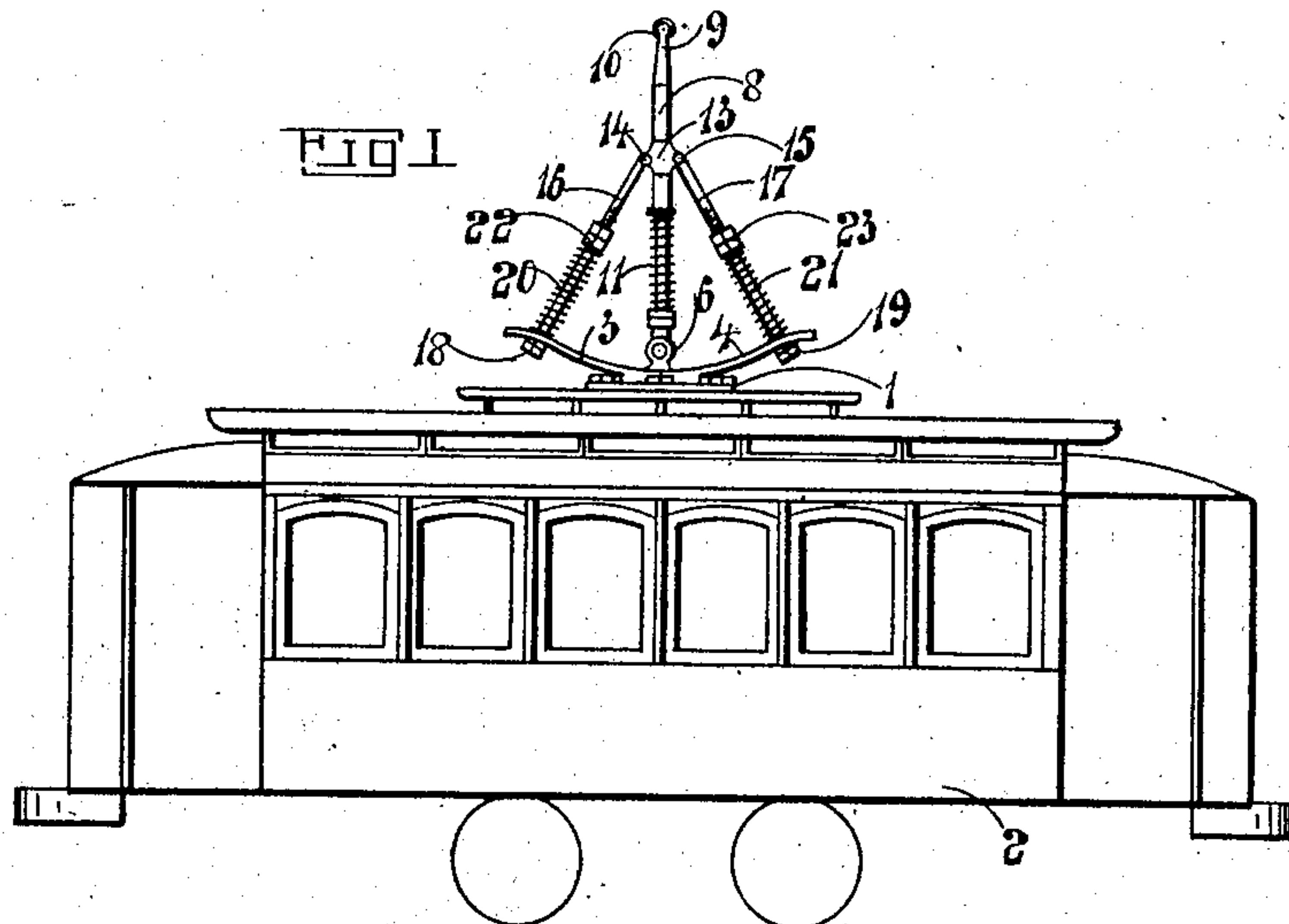


No. 827,325.

PATENTED JULY 31, 1906.

H. QUERTIER.  
NON-REVERSING TWO WAY RUNNING TROLLEY POLE.  
APPLICATION FILED OCT. 9, 1905.



Witnesses  
S. Baldwin  
E. P. O'Donnell

Inventor  
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# UNITED STATES PATENT OFFICE.

HILARY QUERTIER, OF DUNEDIN, NEW ZEALAND.

## NON-REVERSING TWO-WAY-RUNNING TROLLEY-POLE.

No. 827,325.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed October 9, 1905. Serial No. 282,059.

*To all whom it may concern:*

Be it known that I, HILARY QUERTIER, a subject of His Majesty the King of Great Britain and Ireland, residing at Woods Hotel, Dunedin, in the Provincial District of Otago, in the Colony of New Zealand, have invented certain new and useful Improvements in Non-Reversing Two-Way-Running Trolley-Poles for Electrical Traction, of which the following is a specification.

This invention relates to trolley-poles for employment in connection with overhead systems of electrical traction.

The object of this invention is to provide improved means whereby the trolley-wheel which collects the current from the overhead cable is kept in constant contact with said cable and the vehicle is capable of running in either direction without the overhead gear being reversed.

The drawings illustrate the invention.

Figure 1 is a side elevation of a car fitted with my invention. Fig. 2 is an end elevation, partly in section, of the trolley-pole. Fig. 3 is a sectional plan on line A A, Fig. 4; and Fig. 4 is a side elevation.

Referring to the drawings, a bracket 1, fixed upon the roof of the vehicle 2, has spring-horns 3 and 4 extending in opposite directions parallel with the overhead wire, and a lug 5 has pivoted upon it the jaw 6 of a vertical stem 7, fitted telescopically within a tubular rod 8, upon the upper end 9 of which is journaled a trolley-wheel 10. A spring 11 is threaded upon the vertical stem 7 between the under side of the tubular rod 8 and lock-nuts 12, screwed upon the stem, whereby the tubular rod is projected upwardly under pressure, which may be readily adjusted.

The tubular rod has a bracket 13 upon it, with opposing jaws 14 and 15, to which are pivotally connected stay-rods 16 and 17, passing through the spring-horns 3 and 4 and having adjusting-nuts 18 and 19 upon their ends.

The stay-rods have threaded upon them

spiral springs 20 and 21, arranged between the top of the spring-horns and the under side of adjusting-nuts 22 and 23, carried upon screw-threaded portions of the stay-rods, by means of which the pressure of the said springs may be regulated.

By adjusting the stay-rods, which is effected by adjusting the compression of the springs 20 and 21, the tubular rod which carries the trolley-wheel 10 is maintained in an exactly vertical position.

The spring 11 upon the stem 7 assists to keep the trolley-wheel in contact with the overhead cable, while all the three springs 11, 20, and 21 yield to prevent undue shock.

A line or wire may be employed to draw down the trolley-wheel from the cable in case of emergency.

What I claim, and desire to secure by Letters Patent of the United States, is—

Apparatus for the purpose indicated, comprising in combination, a bracket fixed to the top of the vehicle, a lug integral with the bracket, a vertical stem having a jaw at its lower end, spring-horns extending in opposite directions from the bracket, a tubular rod telescoping upon the stem, lock-nuts screwed upon the stem, a spring threaded upon the stem between the lock-nuts and the tubular rod, a trolley-wheel mounted on the top of the tubular rod, a bracket fixed to the tubular rod and having opposing jaws, stay-rods pivoted in the jaws of the said bracket and having their other ends passed through the spring-horns, nuts screwed upon the ends of the stay-bars, springs threaded upon the stay-bars, and nuts above the springs screwed upon the stay-bars substantially as set forth.

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

HILARY QUERTIER.

Witnesses:

D. W. MACKISAD,  
SAMUEL PHILIP MERAMS