

No. 609,969.

Patented Aug. 30, 1898.

**D. LIPPY.
TROLLEY.**

(Application filed Feb. 23, 1898.)

(No Model.)

Fig. 1.

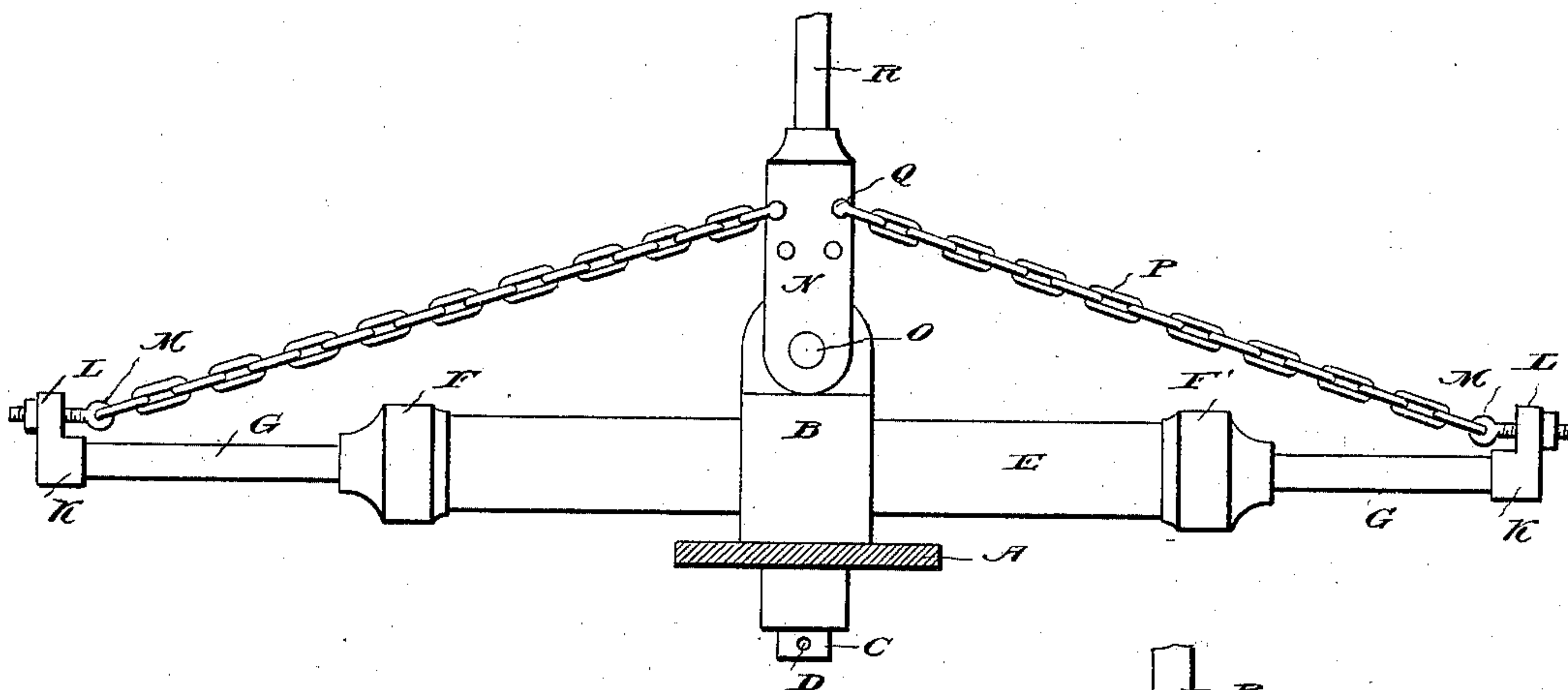


Fig. 3.

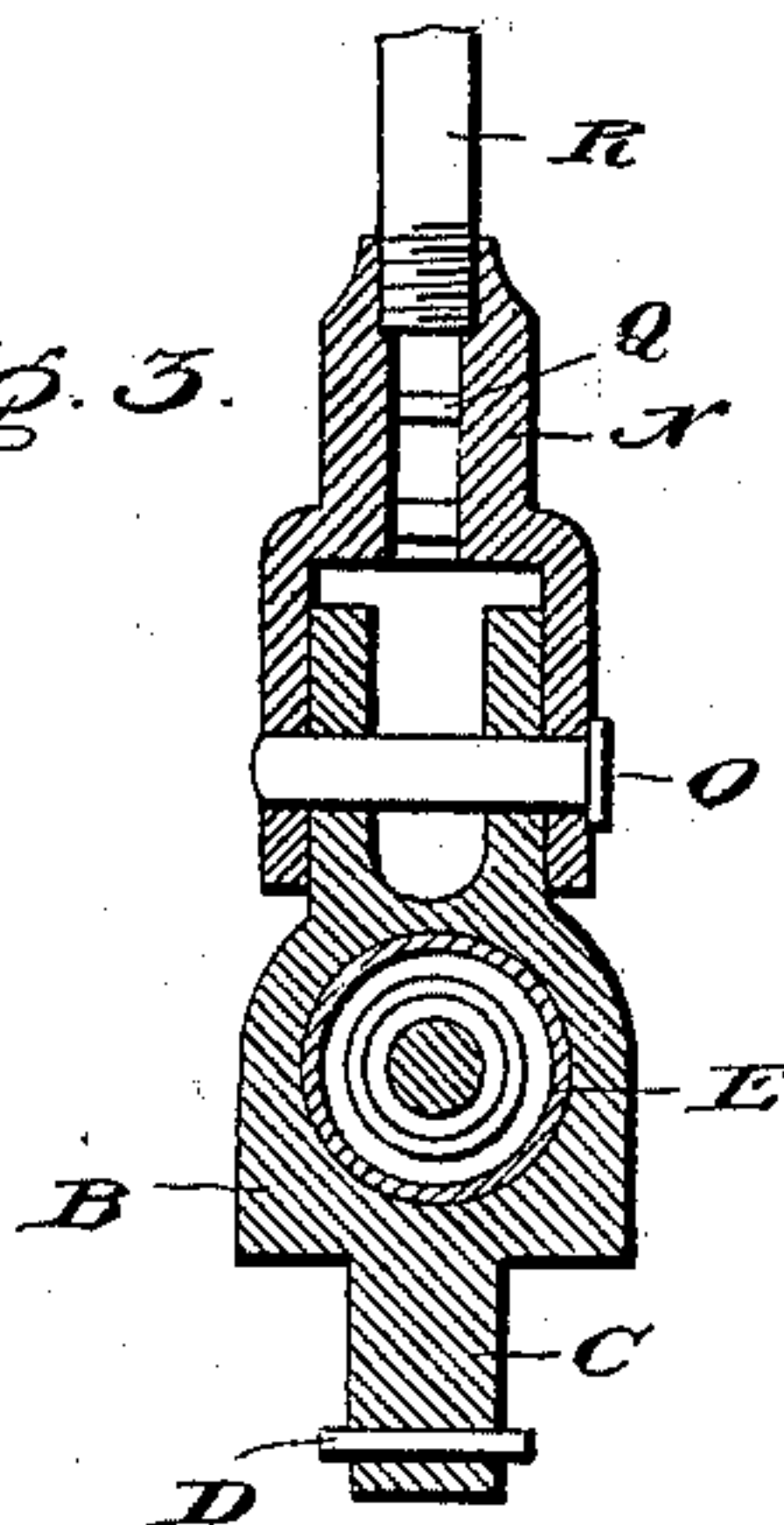
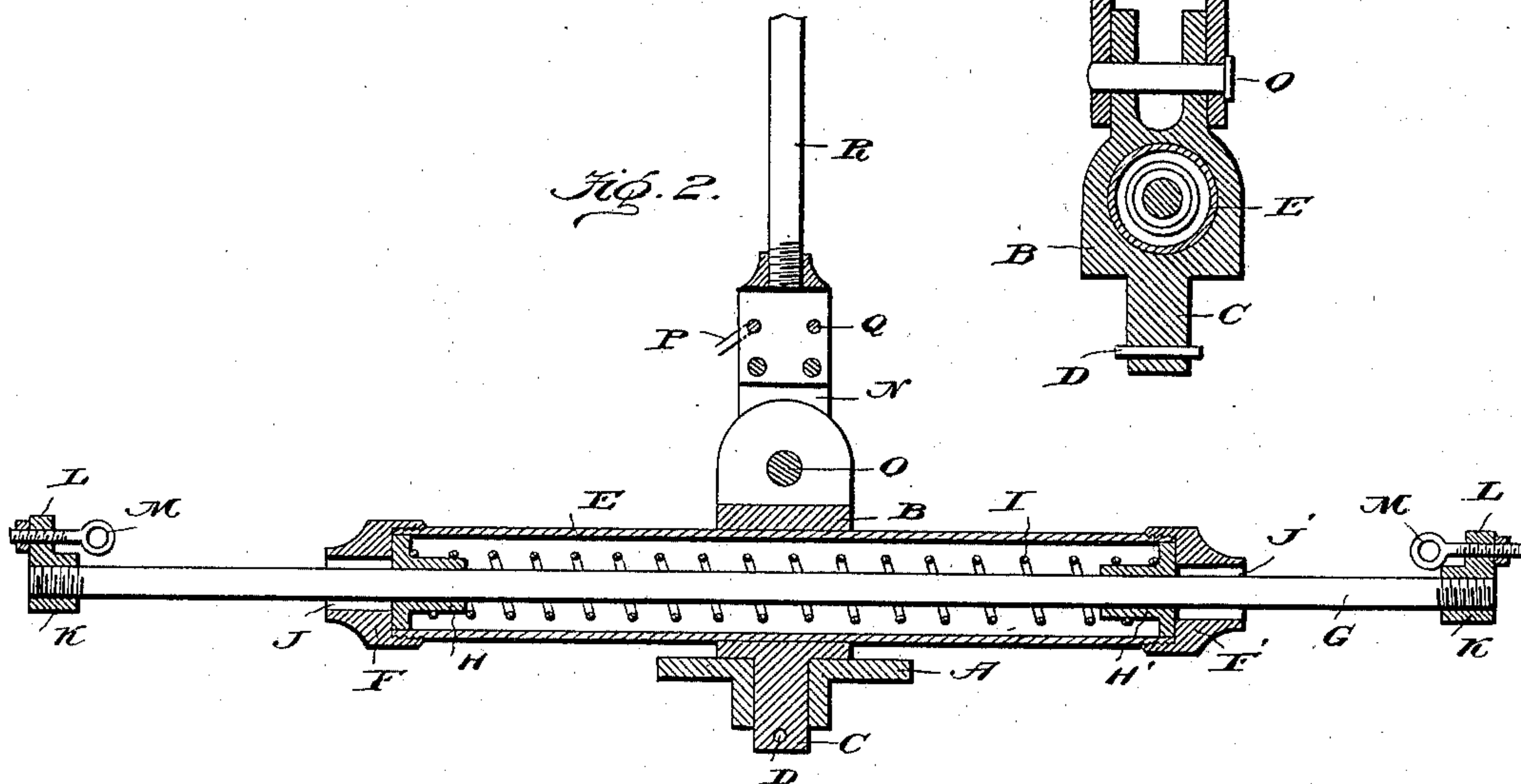


Fig. 2.



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DAVID LIPPY, OF MANSFIELD, OHIO.

TROLLEY.

SPECIFICATION forming part of Letters Patent No. 609,969, dated August 30, 1898.

Application filed February 23, 1898. Serial No. 671,343. (No model.)

To all whom it may concern:

Be it known that I, DAVID LIPPY, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Trolleys; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in overhead trolleys for electric railways, and has for its objects, first, to provide a more efficient and satisfactory base or support for holding the trolley-wheel against the conductor-wire; second, to so construct and arrange the trolley-base that when the mast or pole is raised near a vertical position the trolley-wheel bears against the conductor-wire with a greater tension than when the mast is nearer a horizontal position, obviating all danger of the trolley-wheel jumping the conductor-wire.

In the accompanying drawings, Figure 1 is a side view of my invention. Fig. 2 is a longitudinal sectional view of same, showing the general construction and arrangement of the parts constituting my invention. Fig. 3 is a transverse sectional view taken in line $x x$, Fig. 1.

In the carrying of my invention into practice I secure upon the top of the car a bearing-plate A. To the center is pivoted a post or standard B, the pivoting means being a pintle C, projecting from the under side of the post through an opening in the plate, giving an extended bearing. A pin D passes through the pintle below the plate which holds the post in place.

Secured in the post B and projecting an equal distance upon both sides of the same is the horizontal tubular case E. Each end is provided with the reducer-caps F and F'. The caps are screwed upon the ends of the tubular case. A tension-rod G is placed centrally within the tubular case, the same having bearings in the caps F and F'.

Two flanged sleeves H and H' are placed loose upon the tension-rod; also a coil-spring

I. The spring is placed between the two flanged sleeves and forces the same against the inside of the caps. Collars J and J' are secured upon the tension-rod within the reduced ends of the caps. The outer ends of the tension-rod are provided with the collars K, having an upwardly-projecting lug L. The said lugs are provided with the tension-screws M.

N indicates the mast-head. The said head is bifurcated at its lower end to straddle the top of the post B, to which it is pivoted by the pin O, and also to avoid interference with the chains P, which are connected to the said head above the pivot. The top of the post B is also slotted to allow the passage of the chain when the mast and head N are in a horizontal position.

The connection between the tension-rod G and the head N are the chains P. One end of each is secured to the tension-rod M; the other ends to the head N. Two or more sets of holes Q may be made through the head to give greater or less leverage to the mast to counteract the tension of the spring I. When the mast R is moved from a vertical toward a horizontal position, the tension-rod G has a sliding movement within the tubular case E in the same direction of the mast, the collar J bearing against the flanged sleeve H, compressing the spring I, and allowing the tension-rod G to slide through the flanged sleeve H'. Although the swinging of the mast from a vertical toward a horizontal position results in an increase in the tension of the spring by the movement of the tension-rod G, yet as the chain P is pulling upon the rod it is at the same time moving toward the pivot of the mast, and it will be seen that the effective power of the spring is diminished and becomes least when a straight line is drawn from the pivot of connection with the tension-rod G.

The advantage derived from this construction is that the greatest power of the spring is exerted when the mast is at or near a vertical, always providing ample pressure to keep the trolley-wheel in contact with high wires. The power exerted upon the spring when the mast is in a horizontal position is slight, obviating all danger of cutting the wheels when in contact with low wires.

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

- 5 1. The combination of the pivoted mast a horizontal rod, provided with suitable bearings secured in a post connections between the mast and rod, a coil-spring surrounding the rod to hold the mast in a vertical position the said rod adapted to have a longitudinal movement in the bearings, the mast-head provided with a series of holes radiating from the pivot center to increase or diminish the leverage upon the spring substantially as specified.
- 15 2. The combination of the post, the mast pivoted to the post, a tubular case secured within the post and projecting upon both

sides of the same, caps secured upon the ends of the tubular case, the outer ends having reduced openings, a horizontal rod placed in 20 the center of the tubular case, the said rod provided with collars to fit the reduced openings, flanged sleeves placed loose upon the rod between the collars, a coil-spring surrounding the rod between the flanged sleeves, 25 and suitable connections from each end of the rod to the pivoted mast-head substantially as shown and described.

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

DAVID LIPPY.

Witnesses:

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