

(No Model.)

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TROLLEY.

No. 564,794.

Patented July 28, 1896.

Fig. 1

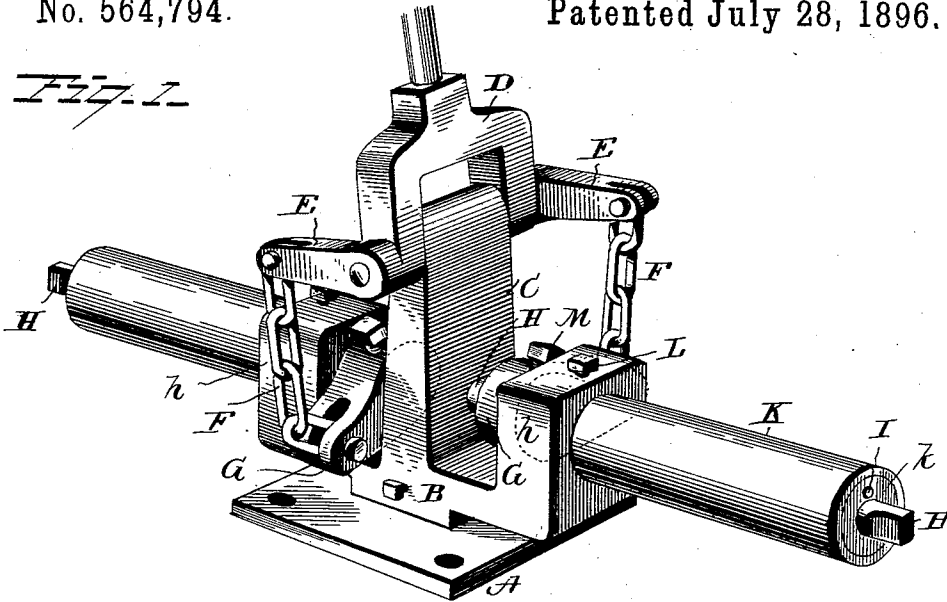
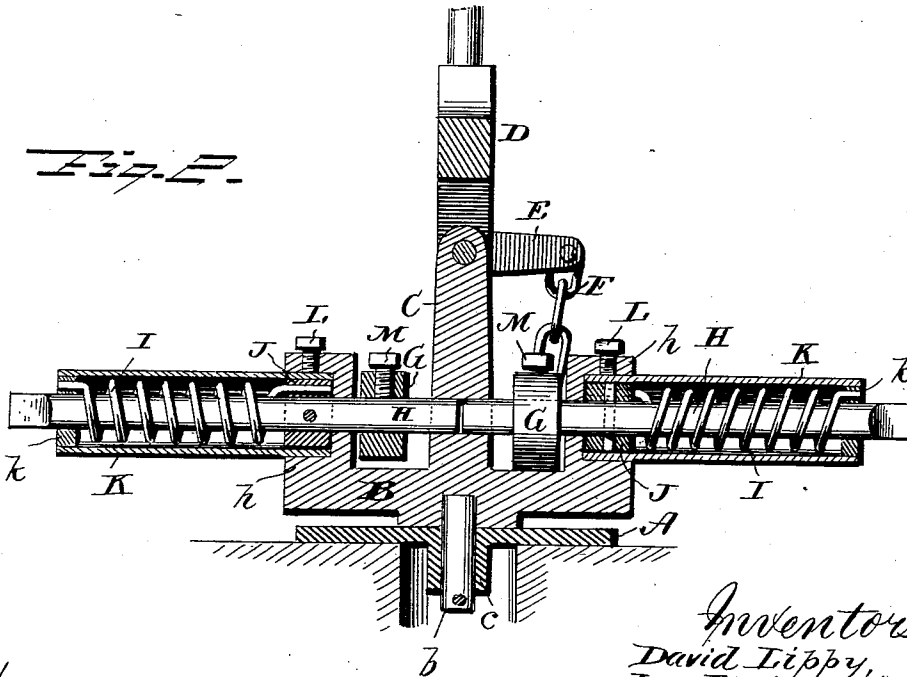


Fig. 2



Witnesses
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UNITED STATES PATENT OFFICE.

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TROLLEY.

SPECIFICATION forming part of Letters Patent No. 564,794, dated July 28, 1896.

Application filed September 24, 1895. Serial No. 563,537. (No model.)

To all whom it may concern:

Be it known that we, DAVID LIPPY, IRA ELMER FINFROCK, GEORGE ATTIGG RINEHART, and DAVID RAITT FRANCIS, citizens 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 we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention relates to overhead trolleys for electric railways, and has for its object the provision of a more efficient and satisfactory base or support for holding the trolley-wheel against the conductor-wire than has heretofore been devised; and to this end said invention consists in the trolley base or support having the construction and combination of parts substantially as hereinafter specified.

In the annexed drawings, Figure 1 is a perspective view of our invention, and Fig. 2 is a longitudinal vertical section thereof.

In the carrying of our invention into practice we secure upon the top of the car in any suitable way a bearing-plate A, to the center of which is pivoted a base B, the pivoting means being a pintle *b* and socket *c*.

Rising from the center of the base B is a post or standard C, to the upper end of which is pivoted the masthead D, that on opposite sides is provided with two diametrically-extending arms E and E'. Each of the latter is connected by a chain F with a crank-arm G on a horizontal shaft H, that is journaled at its inner end in an opening in the post C and in a block *h* rising from the base B at its end, the arm G being placed between the block and the post. Encircling the portion of the shaft that is outside the block is a coiled spring I, whose inner end is attached to a collar J, pinned to the shaft, and whose outer end is fastened to the head or end *k* of a tube K, that incloses the spring and has its inner end contained within an opening in the outer side of the block *h*, and held from rotation and removal by a set-screw L, tapped through the block. By the construction de-

scribed the spring is adapted to rotate the shaft and its arm G in one direction, such direction being that which swings the mast to and holds it in a vertical position, and of course to effect this result the two springs I, as they pull in opposite directions, are given the same tension. This, however, is not absolutely necessary, as the arms G are arranged to strike and be stopped by the base B when the mast is in a vertical position. Such stoppage is also desirable to prevent needless rotation of a shaft and its arm when its chain is relaxed because of the downward swinging of the mast.

To enable the tension of the spring I to be readily adjusted, the end of the shaft is projected beyond the outer end *k* of the tube K, and is shaped for the application of a tool to rotate it. Of course this necessitates that the arm G should be fastened to the shaft by means that permit its being readily loosened and tightened, and accordingly a set-screw M is employed as the fastening means.

Whether the mast be swung in one direction or the other from a vertical toward a horizontal position, one arm G or the other will be raised and the tension of its spring increased. The effective power of the spring, however, is diminished, as the chain that is raising the arm is at the same time moving toward the pivot of the mast, and of course the nearer it gets to such pivot the less will be the power exerted by the spring. The advantage of this construction is that as the power of the spring is greatest when the mast is in or near a vertical position there is always ample pressure applied to keep the wheel in contact with high wires, and as the power is lessened when the mast is at a point intermediate the vertical and the horizontal danger of cutting the wheel from excessive pressure thereof against the wire is avoided. The power of the spring being slight when the mast is in a horizontal position, manipulation of the mast to shift its position is rendered easy, as is also the holding of the same to the roof of the car when such is required.

Our mechanism is simple and efficient, and the parts thereof are easily accessible for assembling and removal.

While we prefer the details of construction

shown, it is to be understood that the scope of our invention is not limited thereto, as changes in such respects may be made which will involve no change in principle.

5 What we claim is—

1. The combination of the pivoted standard having a suitable base with upwardly-extending blocks at its ends which have openings or sockets on their outer sides, horizontal shafts extending through the blocks, 10 coiled springs encircling the shafts, tubes inclosing the shafts and springs and having their inner ends seated in the openings or sockets of the blocks, a masthead pivotally 15 connected to the standard, and intermediate connections between the shafts, the masthead and springs, substantially as and for the purpose set forth.

2. The combination of a base having a post 20 or upright, a masthead pivoted to the post

and having oppositely-extending arms, two shafts journaled by said post and by blocks on the base, a crank-arm on each shaft connected with a masthead-arm, a coiled spring encircling each shaft and connected at one 25 end therewith, and a tube supported by each block that incloses the spring and to which the other end of the same is secured, substantially as specified.

In testimony that we claim the above we 30 have hereunto subscribed our names in the presence of two witnesses.

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DAVID RAITT FRANCIS.

Witnesses:

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