

(No Model.)

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TROLLEY.

No. 551,168.

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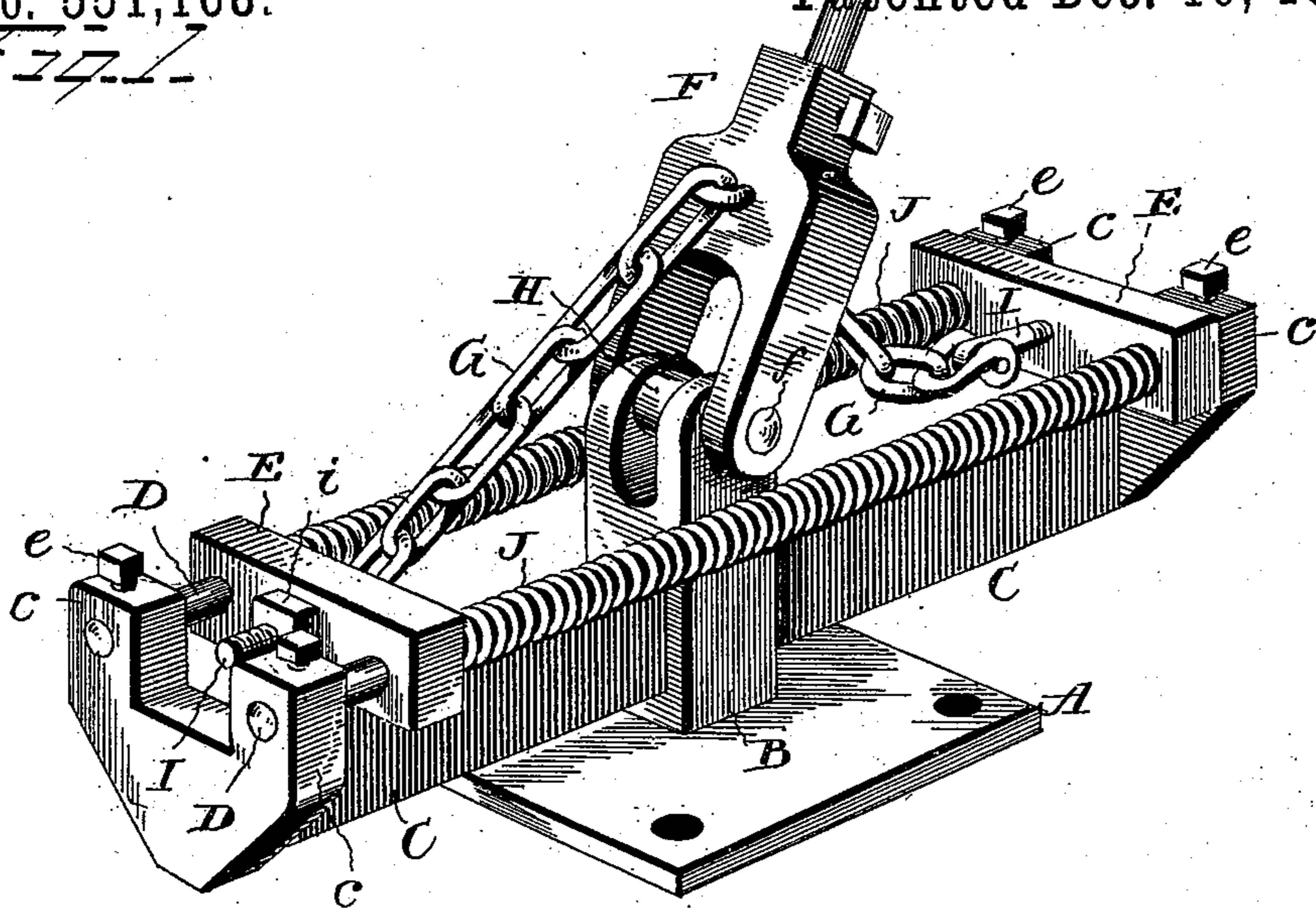
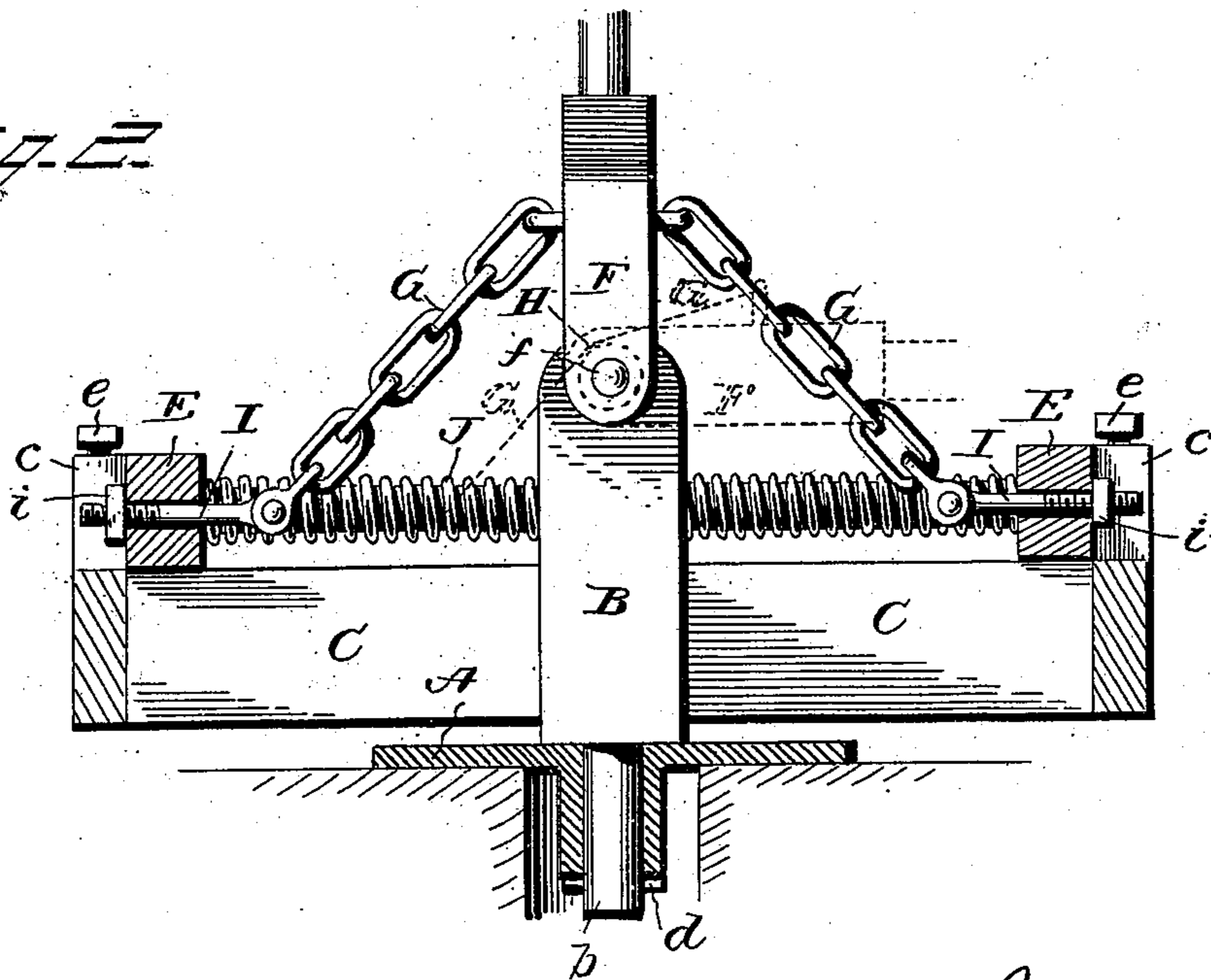


Fig. 1.



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UNITED STATES PATENT OFFICE.

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TROLLEY.

SPECIFICATION forming part of Letters Patent No. 551,168, dated December 10, 1895.

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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 a 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 post or standard B, the pivoting means being a pintle *b*, projecting from the under side of the post through an opening in the plate and given an extended bearing by a projection from the bottom of the plate. A pin *d* passing through the pintle below the said projection holds the post to place.

Projecting from opposite sides of the post B are two horizontal arms C and C, each of which, at its outer end, has two upwardly-projecting lugs *c* and *c*, and supported by the two lugs of each arm that are in line with each other is a rod D, each end of the rod being contained in an opening in a lug *c* and there held by a set-screw *e*.

Slidably mounted upon the two rods C at each side of the post B is a bar E, which is connected at its longitudinal center to the adjacent side of a mast-head F by a chain G. The mast-head is slotted or bifurcated at its lower end to straddle the top of the post B,

to which it is pivoted by a pin *f*, and also to avoid interference with the chains G, which are connected to said head above its pivot. For this latter reason the top of the post B is also slotted, and in the slot, upon the pin *f*, is placed a roller H to engage and ease the passage of the chain when the head F is swung to a horizontal position.

The connection between each bar E and its chain consists of a bolt I and nut *i*, such connection being employed as permitting of adjustment, when necessary.

Upon each rod C, with an end engaging the inner side of each bar E, is a coiled spring J that tends normally to thrust the two bars apart and to move and hold the mast or pole in a vertical position, as shown in Fig 2. It will be seen that whether moved to one side or the other on its pivot the mast will slide one bar E or the other upon the two rods C and compress the two springs J, the bar E not moved serving as an abutment against which the springs are compressed. Although the swinging of the mast from a vertical toward a horizontal position results in an increase in the tension of the springs by the movement of a bar E, yet, as the chain G that is pulling upon the bar is at the same time moving toward the pivot of the mast, it will be seen that the effective power of the springs is really diminished and becomes least when a straight line drawn from the point of connection of the chain with the head F to its point of connection with the bar E intersects the pivotal center of the head. The advantage of this construction is that as the greatest power exerted by the springs is when the mast is at 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 diminished when the mast is at a point intermediate the vertical and horizontal danger of cutting the wheel from excessive pressure thereof against the wire is avoided. The power exerted by the springs when the mast is in a horizontal position being slight, 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.

The employment of the two rods C, besides

resulting in the production of a light, strong frame, insures the steady and easy guiding of the bars E, and enables the single chain G on each side the mast-head to extend from
5 the latter to its bar E in a plane directly in line with the transverse center of said head, so that there is an even balanced pull upon the latter by the chains.

Though we prefer the details of construction shown and described, we do not limit the
10 scope of our invention thereto, as changes in such respects may be made which will involve no change in principle.

We claim as our invention—

15 1. The combination of the pivoted mast, the two parallel rods, the two bars slidingly mounted upon the rods, connections between the bars and mast, and coiled springs on the rods engaging the bars, substantially as specified.
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2. The combination of the post, the mast pivoted to the post, oppositely extending

arms on the post, having lugs at their respective ends, two parallel rods supported by said lugs, two bars upon the rods, a coiled spring
25 on each rod engaging both bars, and connections between the mast and the bars, substantially as specified.

3. The combination of the pivoted mast, the spring device for swinging the mast up-
30 ward, a chain connecting such device and the mast, and a roller on the mast pivot, in the path of the chain when the mast is swung down, substantially as specified.

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

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