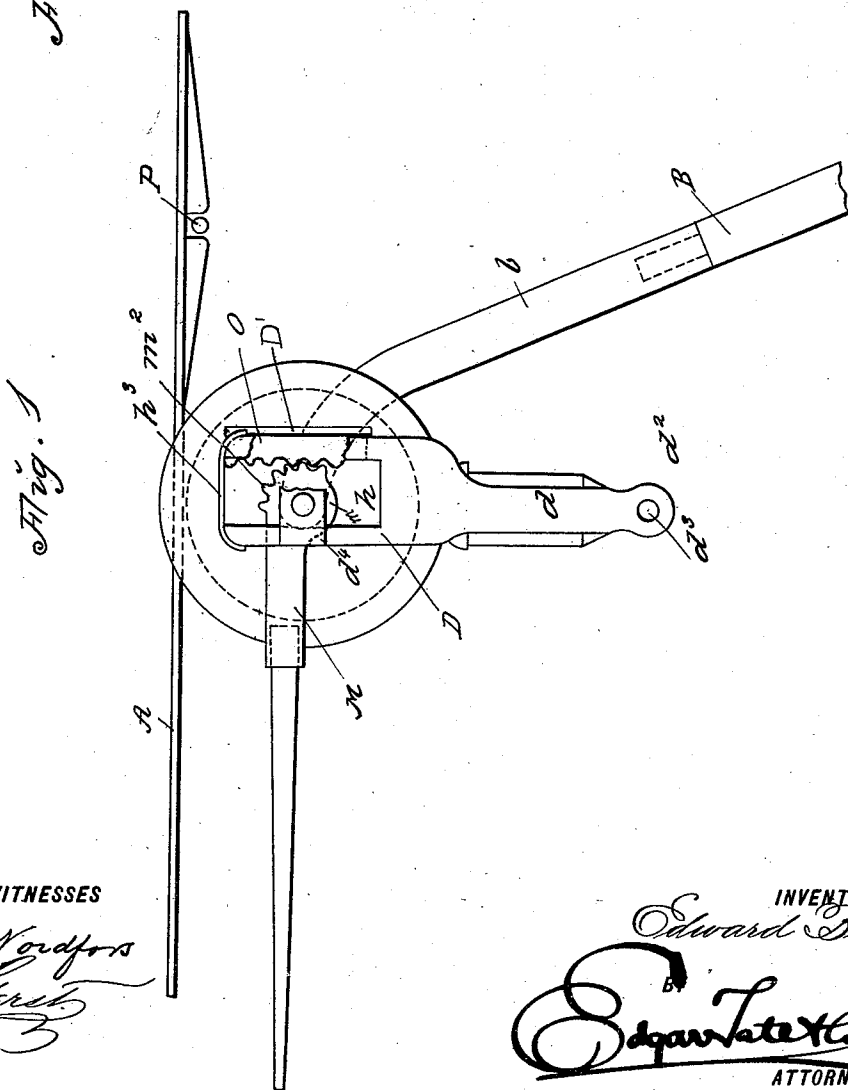
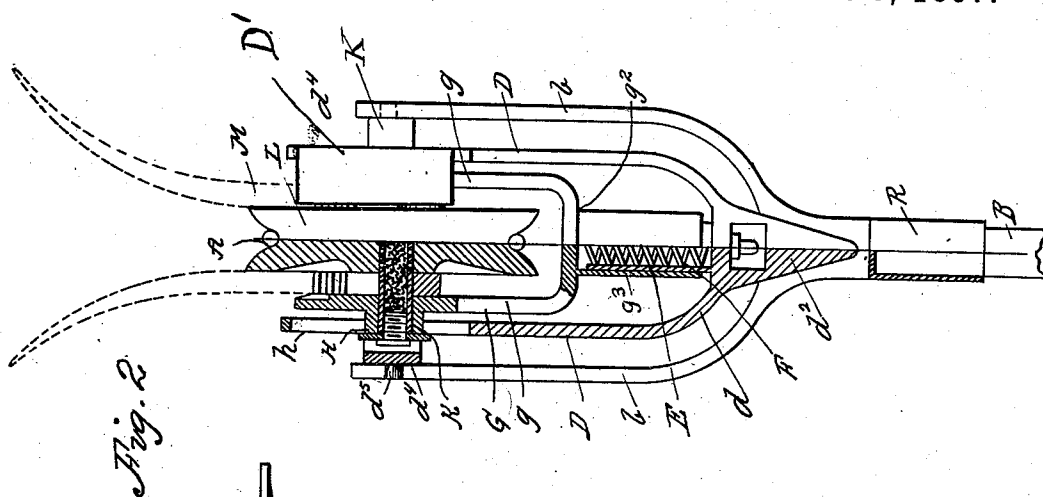


(No Model.)

E. BLAMEY.
TROLLEY SUPPORT.

No. 578,539.

Patented Mar. 9, 1897.



WITNESSES

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EDWARD BLAMEY, OF JERSEY CITY, NEW JERSEY, ASSIGNOR OF ONE-HALF
TO EDGAR WHITMORE, OF BROOKLYN, NEW YORK.

TROLLEY-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 578,539, dated March 9, 1897.

Application filed December 4, 1895. Serial No. 571,035. (No model.)

To all whom it may concern:

Be it known that I, EDWARD BLAMEY, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Trolley-Supports, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to trolleys for electric railways, and particularly to that class thereof which employ overhead conductors, in which the liability of the trolley-wheel to be detached therefrom is very great by reason of the oscillation or jolting of the car, which frequently results in throwing the trolley-arm downward, thus disengaging the trolley-wheel from the conductor-wire and causing great inconvenience, especially on dark and stormy nights, when it is impossible to see the conductor-wire; and the object of the invention is to prevent the trolley-wheel from being detached from the conductor-wire or thrown therefrom or to reduce to a minimum the possibility of such disengagement of said parts; and with this and other objects in view the invention consists in the construction, combination, and arrangement of parts hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a side view of my improved trolley-support, parts thereof being shown in section and a part of the conductor-wire being also shown; and Fig. 2 is a sectional front elevation of the trolley-support, showing a portion of the operating mechanism in dotted lines and in a different position from that shown in Fig. 1.

In the drawings forming part of this specification, A represents an ordinary conductor-wire, such as is usually employed in railway systems of the class hereinbefore described, and B the trolley-arm, which is in practice connected with the car in the usual manner, and said trolley-arm is provided with a main supporting frame or yoke *b*, between the upper ends of which is pivoted the supplemental

frame D, comprising a fork the open end of which is directed upward and the closed end of which is directed downward, as shown at *d*, and provided with a downwardly-dependent arm or projection *d*², in which is preferably formed a hole or opening *d*³, and formed within the closed lower end of the frame or yoke D is an upwardly-directed tubular extension E, in which is placed a spring F.

Mounted within the upper end of the supplemental frame or yoke D is a spring-operated frame or yoke G, composed of side arms *g*, the lower ends of which are brought together at *g*², and secured to or formed on the lower end thereof is a tube *g*³, which is adapted to inclose the tube E and to slide freely thereon.

The separate sides of the frame or yoke D are provided near their upper ends with outwardly-directed transverse bows *d*⁴, by means of which the pivotal connection between the frame or yoke D and the main frame or yoke is made through the agency of the pivoting pins *d*⁵, and the inner or supplemental frame or yoke G or the sides *g* thereof are provided near their upper ends with outwardly-directed shoulders or projections H, which move in vertical slots *h*, formed in the sides of the frame or yoke D, and passing transversely through the frame or yoke D and the shoulders or projections H is a tubular shaft K, on which the trolley-wheel L is mounted.

That portion of the tubular shaft K on which the trolley-wheel is mounted is perforated, and said tubular shaft is adapted to be packed or filled with absorbing material of any preferred kind or class, and the ends of said shaft are closed by means of screw caps or plugs, and in operation the tubular shaft is filled with lubricating material which passes into the middle thereof and through the perforations, thus keeping the same properly lubricated at all times.

Mounted on the tubular shaft K at each side of the trolley-wheel L and extending normally therefrom in a rearward direction are arms M, having circular heads provided on their front edges with ratchet-teeth *m*². On the upper portion of the front edge of each arm of the yoke D is attached a plate D' at right angles to said yoke-arm and extending in the

direction of the trolley-wheel. These plates form means of attachment for the rack-bars O, one of which latter is attached to each plate in a position to engage the teeth m^2 of the arms M. The object of these plates D' is to form means for securing the rack-bars to move with the yoke D and at the same time to extend over the side g of the yoke G and bring said rack-bars in their proper positions.

The arms M may be formed in sections, if desired, or of a single piece, and the operation will be readily understood from the foregoing description when taken in connection with the accompanying drawings.

The inner or supplemental yoke or frame G, in which the trolley-wheel is mounted, is supported normally by the spring F, and when the device is not in operation this spring forces said inner frame upwardly, so that the shoulders or projections H will strike against the upper walls h^3 of the vertical slots h , as will be readily understood, and in this position of the inner frame the arms M will be thrown upwardly, as shown in dotted lines in Fig. 2. It will be observed, however, that in said Fig. 2 the inner frame or yoke G is depressed to its lowest position, this being the position of the parts when the trolley is in operation and the trolley-wheel pressing upon the conductor-wire A, and in this position of said parts the arms M will project horizontally at each side of the trolley-wire, as shown in full lines in Fig. 1.

If during the operation of the device and by reason of the jolting or oscillation of the car caused by the passage of the same over a rough or uneven track the arm B should be suddenly depressed, the tendency would be to throw down the trolley-wheel and disconnect the same from the conductor-wire; but with my improvement this result would be prevented by means of the spring-operated inner frame or yoke which carries the trolley-wheel and the arms M, said frame being thrown upward at such times by the spring F, and the arms M being also thrown upward into the position shown in dotted lines in Fig. 2, in which position they would inclose the wire A, as clearly shown in said figure, and hold the same in line with the trolley-wheel or the trolley-wheel in line therewith, and the latter would be returned to its proper position in contact with the conductor-wire by means of the arm B and the spring F.

In the operation of the device the yoke or frame D hangs in the position shown in Fig. 2, and this is the proper position thereof, and I may also connect with the lower end thereof at d^2 a weight which would assist in holding said frame in said position.

The space between the guide arms or rods M and the frame thereof is such as to guide the trolley-wheel to the proper position on the conductor-wire, although the trolley-wheel may have been thrown sidewise therefrom or out of a direct line therewith, and the effect of the use of these guide arms or rods is such

as to retain the trolley-wheel in proper contact with the conductor-wire at all times regardless of the condition of the road or track or the movement of the car thereon. It will also be observed that when the trolley-wheel is in its lowest position, as shown in Fig. 2, it projects a suitable distance above the top of the frames by which it is supported, and by this arrangement I provide means whereby the trolley-wheel is enabled to cross switches or cross-lines of conductor-wires, as shown at P in Fig. 1, and I also connect the main outer yoke or frame with the trolley-arm by means of a swivel joint or coupling, as shown at R, which permits of the turning of the trolley-support on the trolley-arm, so that said device may be operated in any direction, and, as will be seen on referring to the drawings, the trolley-frame is supported in such a manner that it maintains at all times the same relative position without regard to the angle of the trolley-arm, which in practice is variable, thus keeping the guide rods or arms M entirely out the way of any obstruction caused by cross-connections or otherwise.

It is evident that changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages, and I therefore reserve the right to make all such alterations therein and modifications thereof as fairly come within the scope of the invention.

Having fully described my invention, its construction and operation, I claim as new and desire to secure by Letters Patent—

1. The combination with a trolley-arm, of a main frame or yoke connected therewith, the sides of which are directed upwardly, a supplemental frame or yoke pivotally connected with the upper end thereof, the sides of which are directed upwardly, and a spring-supported frame or yoke mounted and free to slide therein, in the upper end of which is mounted a trolley-wheel, substantially as shown and described.

2. The combination with a trolley-arm, of a main frame or yoke connected therewith, the sides of which are directed upwardly, a supplemental frame or yoke pivotally connected with the upper end thereof, the sides of which are directed upwardly, and a spring-supported frame or yoke mounted and free to slide therein, in the upper end of which is mounted a trolley-wheel, and guide arms or rods mounted on the shaft on which the trolley-wheel is mounted and means whereby they may be automatically raised or lowered, substantially as shown and described.

3. The combination with a trolley-arm, of a main frame or yoke connected therewith, the sides of which are directed upwardly, a supplemental frame or yoke pivotally connected with the upper end thereof, the sides of which are directed upwardly, and a spring-supported frame or yoke mounted and free to slide therein, in the upper end of which is

mounted a trolley-wheel, and guide arms or rods mounted on the shaft on which the trolley-wheel is mounted, and means whereby they may be automatically raised or lowered, 5 and the shaft on which the trolley-wheel is mounted being perforated and provided with a packing or filling of absorbing material, substantially as shown and described.

4. In a trolley-support, the combination 10 with a trolley-arm, of a main frame or yoke connected therewith by means of a swivel joint or coupling, a supplemental frame or yoke pivotally suspended therein, a spring-supported frame or yoke mounted in said supplemental frame or yoke, and provided at its 15 upper end with shoulders or projections which are free to slide in vertical slots formed therein, a trolley-wheel mounted on a shaft which extends through said spring-supported frame 20 or yoke, and guide arms or rods provided with heads which are mounted on said shaft each side of said trolley-wheel, and means whereby the same may be automatically raised or lowered, substantially as shown and described.

25 5. The combination with a trolley-arm, of a frame or yoke which is connected therewith

by means of a swivel joint or coupling, and in which is mounted a supplemental frame or yoke, within which is mounted a spring-supported sliding or depressible frame or yoke, 30 in which is mounted a trolley-wheel, substantially as shown and described.

6. The combination with a trolley-arm, of a frame or yoke which is connected therewith 35 by means of a swivel joint or coupling, and in which is mounted a supplemental frame or yoke, within which is mounted a spring-supported sliding or depressible frame or yoke, in which is mounted a trolley-wheel, and 40 guide arms or rods mounted at each side of said trolley-wheel, and means for raising and lowering the same, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 45 day of November, 1895.

EDWARD BLAMEY.

Witnesses:

C. GERST,

M. A. KNOWLES.