No. 816,875. PATENTED APR. 3, 1906.

B. MURPHY.

TROLLEY HARP.

APPLICATION FILED AUG. 24, 1905.

Fig. 1

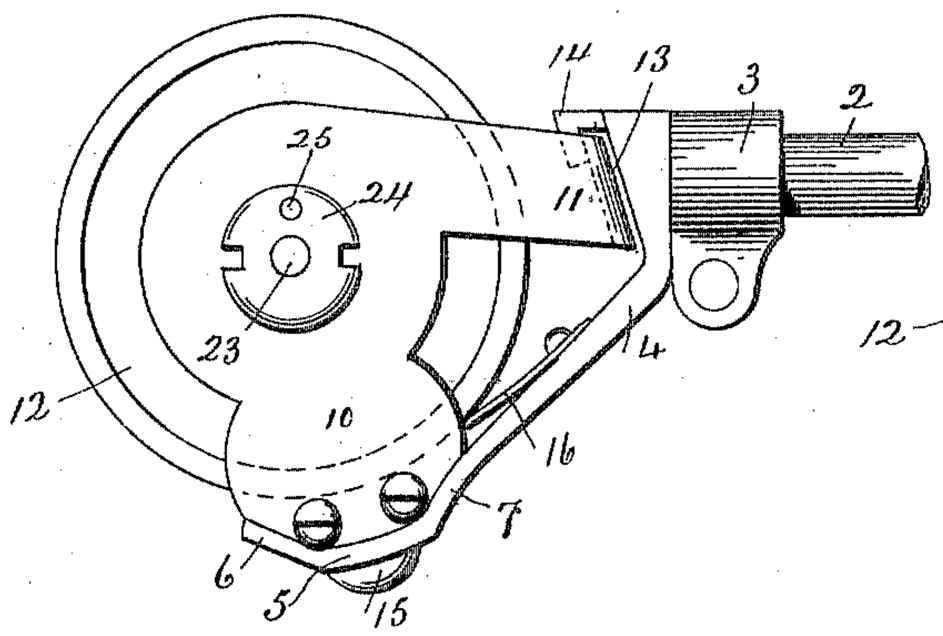

Fig. 2

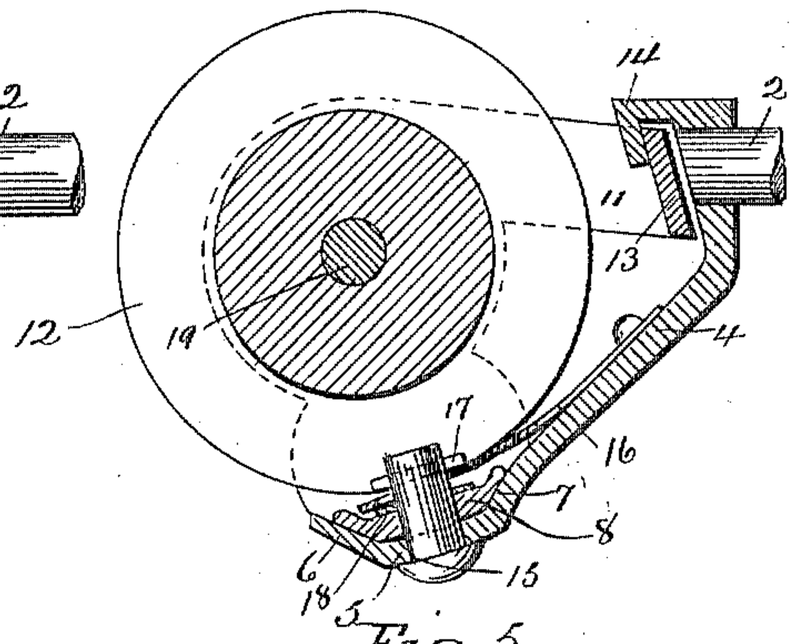

Fig. 5

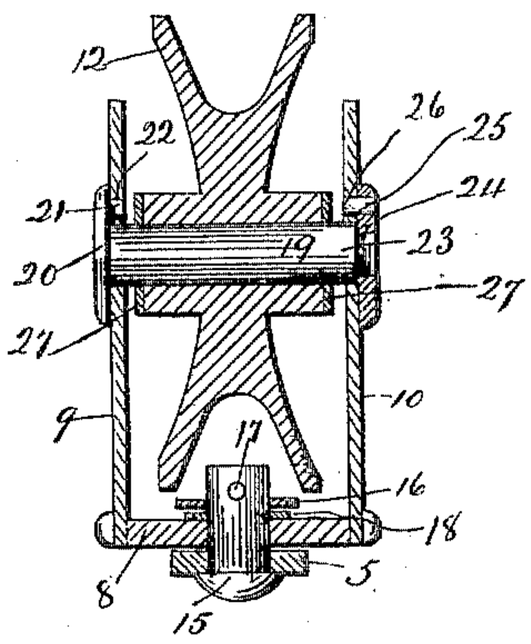

Fig. 3

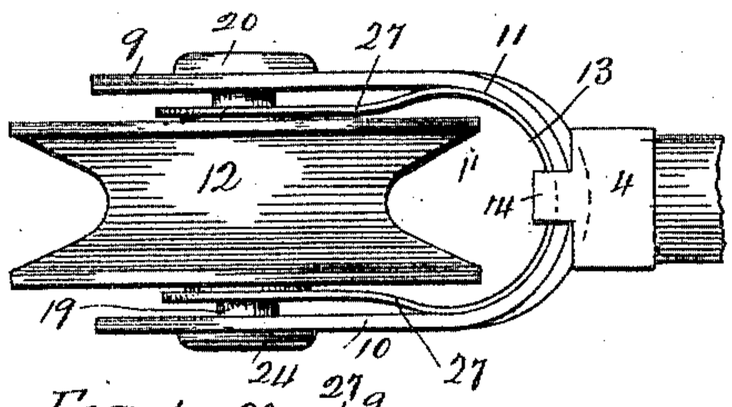

Fig. 4

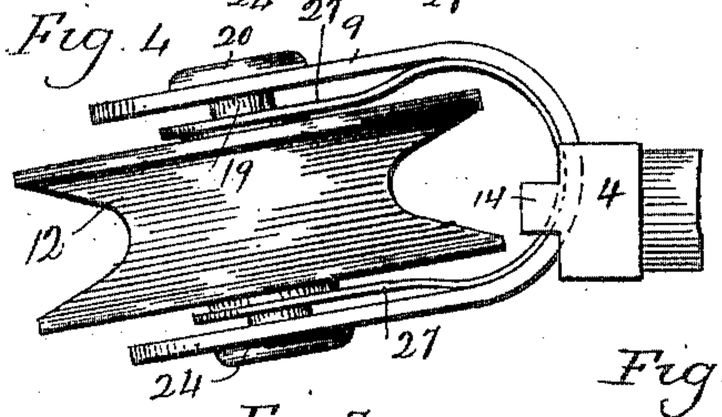

Fig. 6

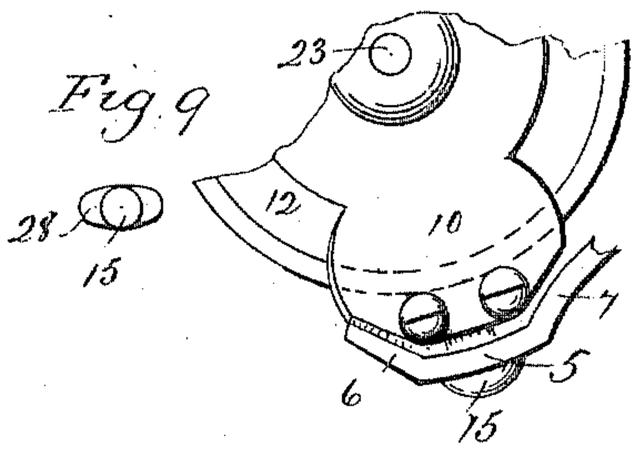

Fig. 7

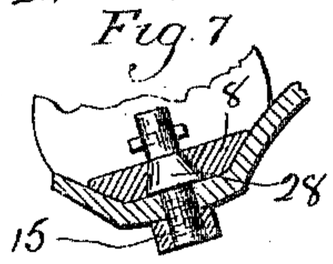

Fig. 8

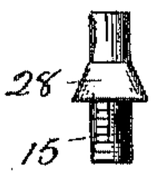

Fig. 9

Witnesses -
J. H. Shumway
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Inventor.
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UNITED STATES PATENT OFFICE.

BARNEY MURPHY, OF NEW HAVEN, CONNECTICUT, ASSIGNOR OF ONE-HALF TO FRED WALLACE, OF NEW HAVEN, CONNECTICUT.

TROLLEY-HARP.

No. 816,875. Specification of Letters Patent. Patented April 3, 1906.

Application filed August 24, 1905. Serial No. 275,628.

To all whom it may concern:

Be it known that I, BARNEY MURPHY, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Trolley-Harps; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of a trolley-harp constructed in accordance with my invention. Fig. 2 is a vertical central section of the same. Fig. 3 is a top or plan view. Fig. 4 is a similar view showing the trolley-wheel turned at an angle to the trolley-pole. Fig. 5 is a transverse sectional view through the trolley-wheel. Fig. 6 is a broken side view showing the trolley-wheel turned in the position shown in Fig. 4. Fig. 7 is a sectional view through the bearing for the trolley-wheel, showing a modified form of pin. Fig. 8 is a side view of the pin shown in Fig. 7. Fig. 9 is a top or plan view of the same, Figs. 7, 8, and 9 being on a reduced scale.

This invention relates to an improvement in trolley-harps, the object being to provide an improved bearing for the trolley-wheel and one which may be readily turned from side to side or out of line with the trolley-pole to facilitate passing curves and also to enable the wheel to be shifted from the wire immediately overhead of the car to one over an adjoining track.

The invention consists in the details of construction and arrangement of parts, as will be hereinafter described, and particularly recited in the claims.

To the outer end of a trolley-pole 2, which may or may not be provided with an eye 3 for the attachment of a trolley-rope, is an arm 4, which extends downward and forward and at its outer end provides a seat 5, having inclined side walls 6 and 7. Extending transversely across the same is a block 8, having inclined under sides to bear against the side walls 6 and 7 of the seat. To the ends of this block are secured the side walls 9 and 10 of a yoke 11, between which the trolley-wheel 12 is mounted. This yoke is formed from spring metal and includes a bow 13, which extends rearwardly almost to the forward face of the upper portion of the arm 4, and this upper end of the arm has an outwardly and downwardly extending finger 14, which extends down into the said bow, this finger serving to prevent the bow engaging with cross-wires should the trolley-wheel slip off from the trolley-wire. The block 8 is held in its seat by means of a bolt 15, which extends up through the block and through the seat, and to hold the block in its seat I provide a flat spring 16, which is screwed to the forward face of the arm and extends down over the bolt 15, with which it is held in engagement by a cotter-pin 17, the cotter-pin being placed at a point somewhat above the face of the block, so as to allow that block to move vertically on the bolt. Preferably, and as hereinafter shown, a washer 18 will be placed over the bolt between the top of the block and the spring 16.

To hold the trolley-wheel in place, I use a pin 19, having a flat head 20, formed in its inner face with a lug 21, adapted to enter a corresponding hole 22, formed in one of the sides of the yoke. While the other end of the pin is formed with a reduced threaded end 23 to receive a flat nut 24, corresponding in form to head 20, also formed with a lug 25, adapted to enter a hole 26 in the adjacent face of the yoke. The distance between the inner face of the yoke is greater than the length of the hub of the wheel and between the ends of the hub and the sides of the yoke are springs 27, formed integral with each other and secured to the rearwardly-extending bow of the yoke.

To remove the trolley-wheel, the sides of the yoke will be pressed toward each other, and being of spring metal this may be easily done, and when pressed toward each other the lug 25 will be disengaged from the hole 26, allowing the nut 24 to be readily removed, and when the nut is replaced the same operation is performed—namely, the sides of the yoke are pressed together, so that the nut can be turned into place and when properly located the lug 25 will enter the hole 26 and lock the pin in place. It will thus be seen that the bearing for the trolley-wheel is directly below it and the thrust or pressure of the wheel against the wire is taken by the arm 4. In passing around curves the wheel will naturally turn upon the pin or bolt 15,

and in turning will cause the incline surface of the block to ride upon the incline walls 6 and 7, with the result that the block is forced upward against the pressure of the spring 16, and as soon as the tendency to turn the wheel is removed it will immediately drop back into its seat and into line with the trolley-pole.

As an additional means for tending to return the block to its normal position, the bolt 15 may be formed with an oval extension or projection 28 above the seat, which will enter a corresponding formed hole in the block 8, so that when the block is turned upon the bolt or pin it will naturally ride upward, the effect being the same as is caused by having the under face of the block ride upward on the incline walls 6 and 7.

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

1. The combination with a trolley-pole of an arm secured at the outer end thereof and extending downwardly and forwardly therefrom, and formed at its outer end with a seat having inclined transverse walls, a pin mounted in said seat a block having inclined surfaces located in said seat and turning upon the pin, a yoke secured to the ends of said block and extending upwardly therefrom, and a wheel mounted in said yoke, substantially as described.

2. The combination with a trolley-pole of an arm secured at the outer end thereof and extending downwardly and forwardly therefrom and providing a seat with inclined side walls, a block located in said seat upon a pin, a yoke secured to the ends of said block and extending upwardly therefrom, a wheel mounted between the sides of said yoke upon a pin, said pin provided at one end with a head, an inwardly-extending lug and at the other end with threads to receive a nut having an inwardly-extending lug, said lugs adapted to enter holes formed in the sides of said yoke, substantially as described.

3. The combination with a trolley-pole of an arm secured to the forward end thereof, and extending downwardly and forwardly therefrom, and providing a seat having transverse-inclined side walls, a block located in said seat, a pin extending upward through said seat and upon which said block may turn, a yoke secured to the ends of said block and extending forwardly therefrom, the sides of the yoke connected by a rearwardly-extending bow, a wheel mounted between the sides of said yoke, and a finger formed at the upper end of said arm and extending forwardly and downwardly into said bow, substantially as described.

4. The combination with a trolley-pole of an arm secured at the forward end thereof and extending forwardly and downwardly therefrom, and providing a seat having transverse-inclined side walls, a block located in said seats, a pin extending upward through said seat and on which said block may be turned, a yoke secured to the ends of said block and extending forwardly therefrom a wheel mounted upon a pin connected with the sides of said yoke, and the spring secured to said arm and extending downwardly and forwardly and bearing at its forward end upon said block, which it tends to force into said seat, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

BARNEY MURPHY.

Witnesses:
J. H. SHUMWAY
F. C. EARLE.