No. 831,509. PATENTED SEPT. 18, 1906.

J. T. HAUDENSHIELD.

TROLLEY.

APPLICATION FILED NOV. 10, 1905.

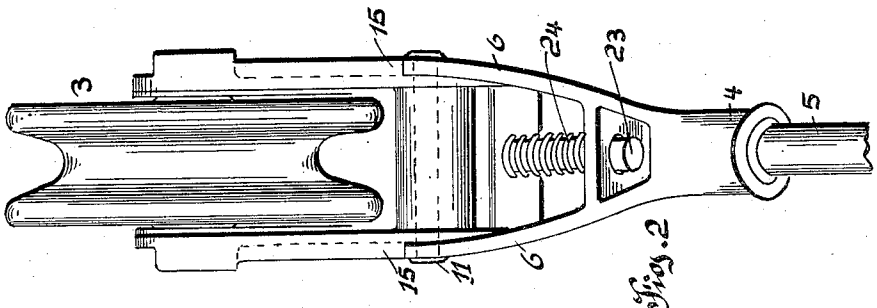


Fig. 2.

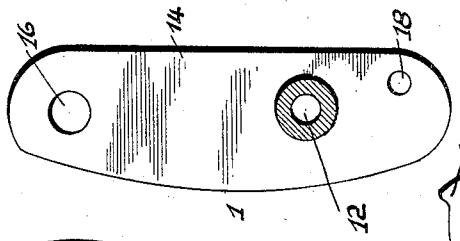


Fig. 3.

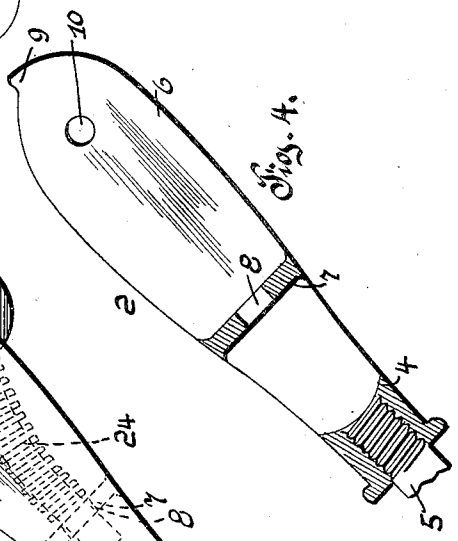


Fig. 4.




Fig. 1.




Fig. 5.

Witnesses:
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# UNITED STATES PATENT OFFICE.

JACOB T. HAUDENSHIELD, OF SCOTT TOWNSHIP, ALLEGHENY COUNTY, PENNSYLVANIA.

## TROLLEY.

No. 831,509. Specification of Letters Patent. Patented Sept. 18, 1906.

Application filed November 10, 1905. Serial No. 286,728.

*To all whom it may concern:*

Be it known that I, JACOB T. HAUDENSHIELD, a citizen of the United States of America, residing in Scott township, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Trolleys, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in trolleys; and the invention relates more particularly to a novel form of harp.

The primary object of the invention is to provide a self-adjusting harp in which a trolley-wheel is journaled. The self-adjustment of the harp permits of the trolley-wheel adjusting itself to the trolley-wire or electrical conduit over which it travels, and should any irregularities be encountered upon the wire or conduit the trolley-wheel will recede when engaging such an irregularity or obstruction and will then again assume its normal position upon a wire. To this end I have constructed a novel two-part harp which is applicable to the present type of trolley-pole in use. The harp, which is extremely simple in construction, is used in connection with the ordinary type of trolley-wheel, and in being able to substitute my improved harp for the ones at present used little or no expense is incurred in using my improved harp in connection with the present type of trolley pole and wheel.

With the above and other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts to be hereinafter more fully described and then specifically pointed out in the claim, and, referring to the drawings accompanying this application, like numerals of reference designate corresponding parts throughout the several views, in which—

Figure 1 is a side elevation of my improved harp, the pole thereof being broken away. Fig. 2 is a front elevation of the same. Fig. 3 is a vertical section of the upper or wheel-carrying member of the harp. Fig. 4 is a similar view of the lower harp member. Fig. 5 is a perspective view of a device for connecting the lower end of the wheel-carrying member with the lower harp member.

To put my invention into practice, I construct my improved harp of two parts 1 and 2, the part 1 being journaled within the part 2, while the conventional form of trolley-wheel 3 is journaled between the upper ends of the part 1.

The part 2 of the harp consists of a socket 4, which is mounted upon the upper end of a conventional form of trolley-pole 5. The socket 4 carries side arms 6 6, which are braced by an intermediate integral strap 7, having a central opening 8 formed therein. The upper ends of the side arms 6 6 are provided with lugs 9 9 and with openings 10 10. Pivotally mounted between the upper ends of the arms 6 6 by a pin 11 is the part 1 of the harp. The pin is adapted to pass through a transverse tubular bridge 12, carried by the side arms 14 14 of the part 1. The interior faces of the side arms 14 14 are provided upon one of their vertical edges with raised portions 15 15, adapted to be engaged by the edges of the side arms 6 6 and the lugs 9 of said arms. The upper end of the side arms 14 14 of the part 1 are provided with openings 16 16, and passing through said openings is a pin 17, upon which is journaled the trolley-wheel 3.

The lower edges of the side arms 14 14 of the part 1 are pierced, as at 18, and between the lower ends of said side arms is mounted a bar 19, having a flat surface 20. The bar is provided with a longitudinally-disposed opening 21, through which passes a pin 22 to retain the bar 19 between said arms. The flat surface 20 of the bar 19 is provided with a rearwardly-extending curved rod 23, which extends downwardly through the central opening 8 of the integral strap 7 of the part 2. Surrounding the curved rod 23 between the strap 7 and the flat surface 20 of the bar 19 is a coiled spring 24, and this spring normally tends to hold the part 1 of the harp in the vertical position shown in Figs. 1 and 2 of the drawings.

From the foregoing description it will be observed that I have devised a harp consisting of two parts, the wheel-carrying part being pivotally mounted in the socket part of the harp, and have employed novel means for adjustably holding the wheel-carrying part of the harp, whereby it may adjust itself to the position of the trolley-wire or electrical conduit upon which it travels. The

springs which I have employed for maintaining the part 1 of the harp in a vertical position normally tend to force the wheel in engagement with the wire, the springs forcing rearwardly, which tends to force the trolley-wheel forward in the direction the car is traveling, and in this manner a pressure is brought to bear upon the trolley-wire or conduit over which it travels.

I preferably construct my improved trolley of strong and durable metal, and such changes in the construction and operation of the trolley as are permissible by the appended claim may be resorted to without departing from the spirit and scope of the invention.

What I claim, and desire to secure by Letters Patent, is—

A trolley-harp comprising a bifurcated member, a second bifurcated member mounted between the furcations of the first-named member, said second-named member having an integral sleeve connecting its furcations, thereby forming means by which said second-named member is mounted in the first-named member, the second-named member being provided with a hole in each of its furcations at a point near their lower extremity, a substantially T-shaped member having a tubular cross portion, a bolt passing through said openings and through the tubular portion of the T-shaped member, the other portion being bent and extending downwardly through a strap integral with the furcations of the first-named member, and a coiled spring surrounding said T-shaped member.

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

JACOB T. HAUDENSHIELD.

Witnesses:

E. E. POTTER,

K. H. BUTLER.