Oct. 20, 1925. 1,557,913

A. I. WOODRING

COMBINATION TROLLEY WHEEL AND SHOE

Filed Jan. 3, 1922

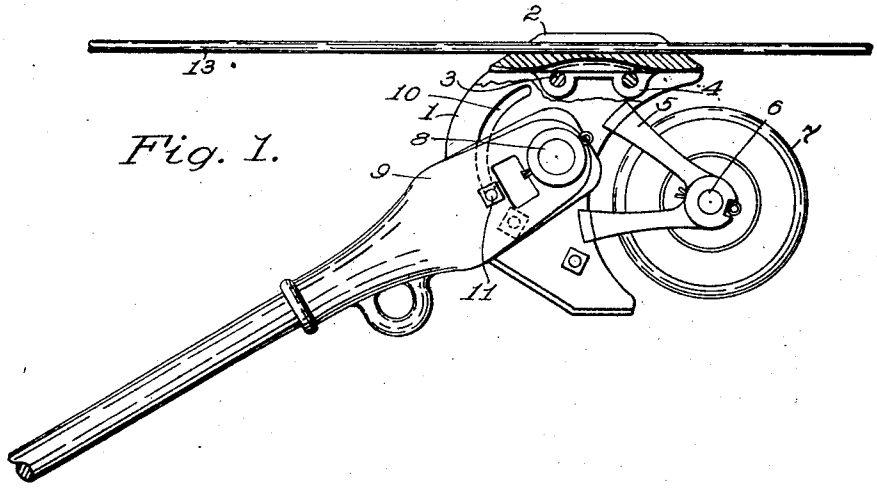


Fig. 1.

Fig. 2.

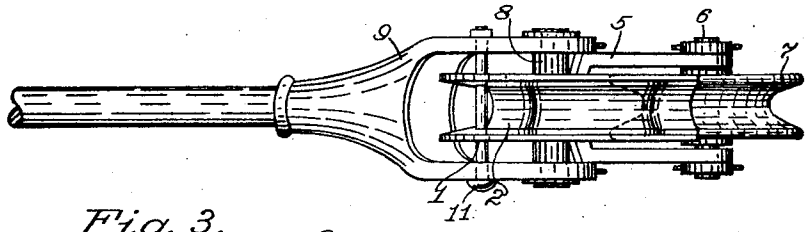


Fig. 3.

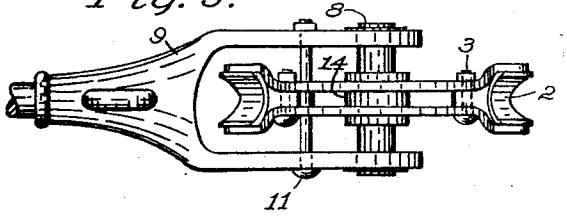


Fig. 4.



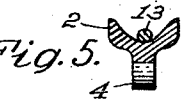


Fig. 5.

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Patented Oct. 20, 1925. 1,557,913

UNITED STATES PATENT OFFICE.

ALBERTO I. WOODRING, OF WATERLOO, IOWA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO NATIONAL SAFETY DEVICES COMPANY, OF WATERLOO, IOWA.

COMBINATION TROLLEY WHEEL AND SHOE.

Application filed January 3, 1922. Serial No. 526,726.

To all whom it may concern:

Be it known that I, ALBERTO I. WOODRING, a citizen of the United States of America, and a resident of Waterloo, Black Hawk County, Iowa, have invented certain new and useful Improvements in Combination Trolley Wheels and Shoes, of which the following is a specification.

My invention relates to improvements in combination trolley-wheels and shoes, and the object of my improvement is to furnish the combination with a trolley-harp of a trolley-head mounted thereon for limited swinging play, a trolley-wheel being rotatably mounted on said head, and one or more removable reversible trolley-shoes also mounted on said head, the trolley-shoes being normally employed for alternate use contactingly on a trolley-wire, and the trolley-wheel being used only at times of backing-up to take the wire then and prevent damage to or tearing down of the wire supports.

Other objects of said improvements will be more particularly adverted to in detail hereinafter and in the appended claims, it being understood that slight modifications in the structures illustrated herein are nevertheless covered by the principles of the invention and that they are within the scope of its protection.

The objects referred to have been accomplished by the means which are hereinafter described and claimed, and which are illustrated in the accompanying drawings, in which Fig. 1 is a side elevation of my improved combination device, with parts broken away. Fig. 2 is a top plan of the device, and Fig. 3 is a front elevation of the device. Fig. 4 is a side elevation of one of the trolley-shoes of said device, and Fig. 5 is a cross-section of said trolley-shoe.

Similar numerals of reference denote similar parts throughout the several views.

The numeral 9 denotes a trolley-harp of usual form mounted on a trolley-pole, the forks thereof being connected by a pintle 8, the latter mounted at its ends rockingly in orificed bearing-seats in said forks. Made rigid with said pintle is a trolley-head 1 positioned between said forks and spaced therefrom, the head 1 being in shape crescental with spaced plates outwardly concave united medially rigidly or integrally at 14, to have their opposite parts above and below spaced apart to receive and seat removable reversible like trolley-shoes 2.

Each shoe 2 presents outwardly a longitudinal valley or trough to receive and electrically contact with an overhead conductor 13, and the transverse curvature of this trough in the median longitudinal line thereof may be arcuate to fit or contact with an arc of the circumferential surface of said conductor, thus insuring effective electrical contact with a much more certain and complete character than would be the contact of a trolley-wheel 7 such as the one which has its pintle 6 rotatably mounted in forks 5 extending rearwardly medially from the head 1. The shoe 2 has a pair of longitudinally spaced basal lugs 4 having bolt holes 12 to receive bolts 3, the latter traversing opposite spaced parts of the head 1 and secured by nuts thereto.

The medial forward part of the head 1 is provided with arcuate slots 10 which are concentric with said pintle 8. The harp 9 has bolt holes in its forks to receive the bolt 11 secured by a nut, said bolt also traversing said slot 10. By this means, the rocking movements of the head 1 in said harp are limited.

The uppermost shoe 2 is always used for ordinary traveling contact with the conductor 13, but when worn out, the harp 9 may be turned to place the undermost shoe 2 above, being thus held in reserve until needed. Because ordinarily one end part of the shoe wears away before the other end, the shoe may be removed and reversed, thus doubling its length of usefulness. As these shoes are relatively inexpensive, substitutions are relatively cheaper to make than when trolley wheels are employed.

When it becomes necessary to move the car backwardly and especially in certain locations, the trolley-head 1 rocks longitudinally relative to the conductor 13 to be disassociated from the shoe 2, the trolley wheel 7 then receiving the conductor so that there is no disengagement of the trolley from the conductor which might cause wrecking of the overhead supporting means for the conductor. Forward movement of the car causes the head to rock back, placing the shoe 2 again in contact with the conductor.

Having described my invention, what I

claim as new and desire to secure by Letters Patent, is:

1. In combination, a trolley-harp, a slide-contact device tiltably mounted thereon reversibly, and a rolling-contact device mounted on said slide-contact device out of alinement with the slide surface thereof.

2. In combination, a trolley-harp, a trolley-head pivotally mounted thereon, a trolley-wheel mounted rotatably on said head, and a trolley slide-shoe mounted reversibly on said head.

3. In combination, a trolley-harp, a trolley-head pivotally mounted thereon, a trolley-wheel mounted rotatably medially on said head, and like trolley slide-shoes mounted removably on opposite ends of said head.

4. In combination, a trolley-harp, a trolley-head mounted pivotally thereon and composed of spaced connected housing-elements, a trolley-wheel mounted rotatably and medially on said head between projecting parts thereof, and like reversible slide-shoes removably mounted between opposite end parts of said housing-elements.

5. In combination, a trolley-harp, a trolley-head mounted pivotally thereon and composed of spaced connected housing-elements, a trolley-wheel mounted rotatably and medially on said head between projecting parts thereof, like reversible slide-shoes removably mounted between opposite end parts of said housing-elements, and means for limiting the scope of swinging movements of said trolley-head.

Signed at Waterloo, Iowa, this 6th day of December, 1921.

ALBERTO I. WOODRING.