

H. HABBERT, B. U. NIXDORF & A. RUPSCHEIDT.

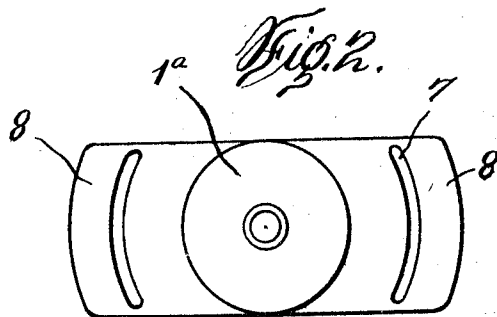
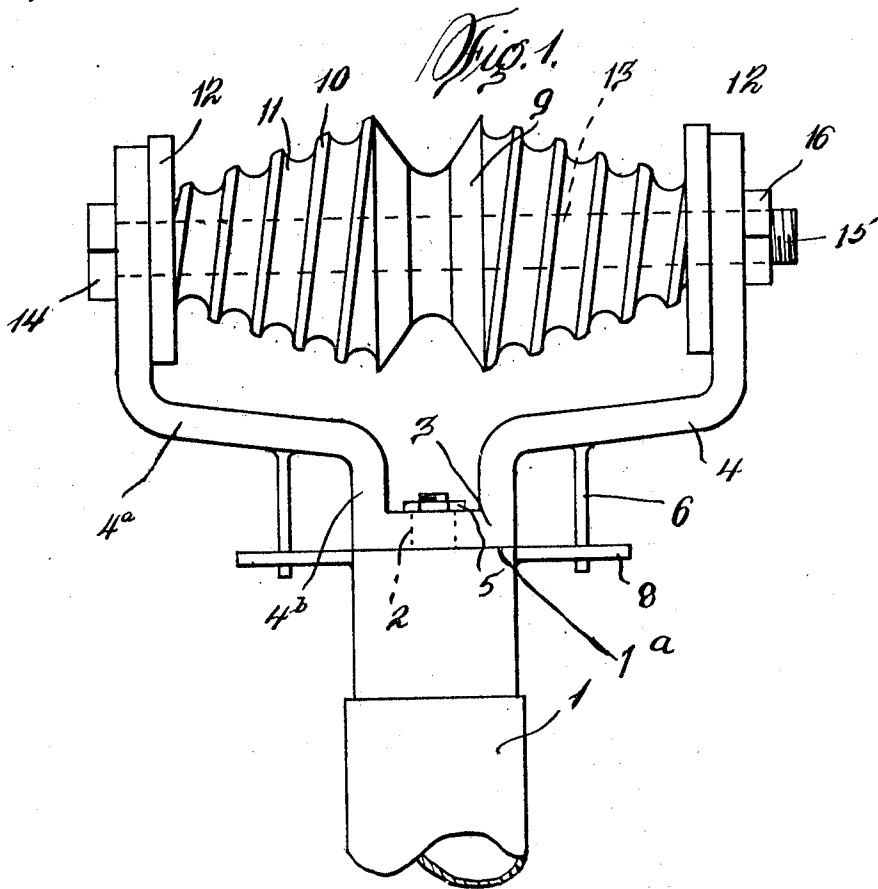
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TROLLEY.

APPLICATION FILED JULY 28, 1910.

Patented Mar. 4, 1913.

1,055,273.



WITNESSES

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UNITED STATES PATENT OFFICE.

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TROLLEY.

1,055,273.

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To all whom it may concern:

Be it known that we, HENRY HABBERT, BURNIE U. NIXDORF, and ALBERT RUPSCHEIDT, citizens of the United States of America, residing at Spring Garden Borough, 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 drawing.

This invention relates to trolleys and has for its object to provide a device of such class with means in a manner as hereinafter set forth for guiding the harp so as to position the trolley wheel upon the conductor in case the wheel has been shifted out of engagement with the conductor.

A further object of the invention is to provide a trolley with means in a manner as hereinafter set forth for limiting the revoluble movement of the harp upon the upper end of the pole.

Further objects of the invention are to provide a trolley which will be comparatively simple in its construction and arrangement, strong, durable, efficient in its use, readily set up in operative position with respect to the pole and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In describing the invention in detail, reference is had to the accompanying drawings, wherein like reference characters denote corresponding parts throughout the several views, and in which:

Figure 1 is a front elevation of the trolley in accordance with this invention, Fig. 2 is a plan view of the bearing cap for the harp.

Referring to the drawings by reference characters, 1 denotes a cylindrical cap having its top closed as at 1^a, the latter constituting a bearing for the harp to be presently

referred to. The top 1^a of the cap 1 is provided centrally with a vertically-disposed pin 2 for the purpose to be presently referred to. The cap 1 is adapted to be fixed to the upper end of the pole and is provided with a pair of diametrically-opposed and laterally-extending plates 8, each of which is provided with a segment-shaped slot 7.

The reference characters 4 and 4^a denote the arms of the harp and each of which is formed with an angularly-disposed portion which at its inner end is bent downwardly as at 4^b and terminates in a disk 3 which is provided with a centrally-disposed aperture through which extends the pin 2. The top 1^a of the cap 1 constitutes a bearing for the lower face of the disk 3 and the harp is shiftably connected to the cap 1 through the medium of a nut 5 engaging the pin 2. The shifting movement of the harp upon the cap 1 is limited in either direction through the medium of the depending pins 6 which project from the arms 4 and 4^a of the harp and extend through the slot 7. The end walls of the slot 7, as is obvious, limit the shifting movement of the harp upon the cap in either direction.

The reference character 9 denotes a trolley wheel which is provided at each side with a conoidal-shaped extension 10, each formed with a spiral groove 11, the larger convolution of which terminating at the wheel 9. Each of the extensions 10 is formed integral at its outer end with a head 12 which is positioned against the inner face of the arms 4 and 4^a. Extending through the arms 4 and 4^a and also through the head 12, extensions 10 and wheel 9 is a bolt 13 having a head 14 at one end and screw-threaded at its other end, as at 15. The head 14 abuts against the arm 4^a and the threaded portion 15 of the bolt 13 is provided with a clamping nut 16 which abuts against the arm 4. The bolt 13 constitutes a journal for the trolley wheel 9, extensions 10 and head 12, these latter being loosely mounted upon the bolt 13 and capable of freely revolving thereon. The spiral grooves in the extensions 10 are provided to guide the harp when the trolley wheel is off the conductor, so as to bring the wheel into engagement with the conductor again.

By the particular construction shown, it

will be seen that we have provided an arrangement of parts which serves several purposes. For instance, by the limitations in pivotal movement of the harp by reason of the contact of the pins or other depending elements with the ends of the slot, we limit an otherwise free pivotal movement of the harp on the pole, with the connection indicated at 2 as the pivot point. By reason, however, of the fact that the slots 7 are entirely closed, said pins or depending elements 6 act practically as extensions of the connection in that they substantially prevent any lateral movement of the harp on its pivot, thereby practically eliminating the effects of wear on the bearing provided by the pivot, since the lateral play that would normally be provided by such wear is prevented by the pins and the slots, so that the particular arrangement acts as a centering device for the harp and renders a tight bearing at the point of pivotal connection unnecessary, at the same time tending to eliminate wear in an obvious manner.

What we claim is:—

1. A trolley comprising a harp having each of its arms formed with an angular portion terminating at its inner end in a downwardly-extending portion merging into a disk, a wheel carried by the harp, a bearing cap adapted to be fixed to a trolley pole, a pair of oppositely-disposed laterally-extending flat plates projecting from the cap at the top thereof and each provided near its outer end with a transversely-extending segment-shaped closed slot, means for pivotally connecting the disks of the harp to the cap, and pins depending from the angular por-

tions of the arms of the harp and extending through said slots and co-acting with the walls of the slots to limit the pivoting movement of the harp in either direction and act as a support for the connecting means to prevent lateral movement of the parts under wear.

2. In combination, a trolley pole having its outer end formed with a seating face and having flange extensions projecting outwardly on opposite sides of the periphery of the pole, each extension having a closed slot without the periphery of the pole, and a trolley harp having a seating face in opposition to the seating face of the pole and having arms projecting laterally to form a support for the trolley wheel, said laterally projecting arms each having a depending element adapted to extend into the slot of a corresponding extension, and means for removably connecting the pole and harp together, the direction of length of said slots corresponding to an arc of which the axis of the connecting means is the center, said elements and slots limiting pivotal movements of the harp and coacting to prevent lateral movement of the harp on the pole, whereby wear of the connecting means will be rendered ineffective.

In testimony whereof we affix our signatures in the presence of two witnesses.

HENRY HABBERT.
BURNIE U. NIXDORF.
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Witnesses:

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