

J. S. McCABE.

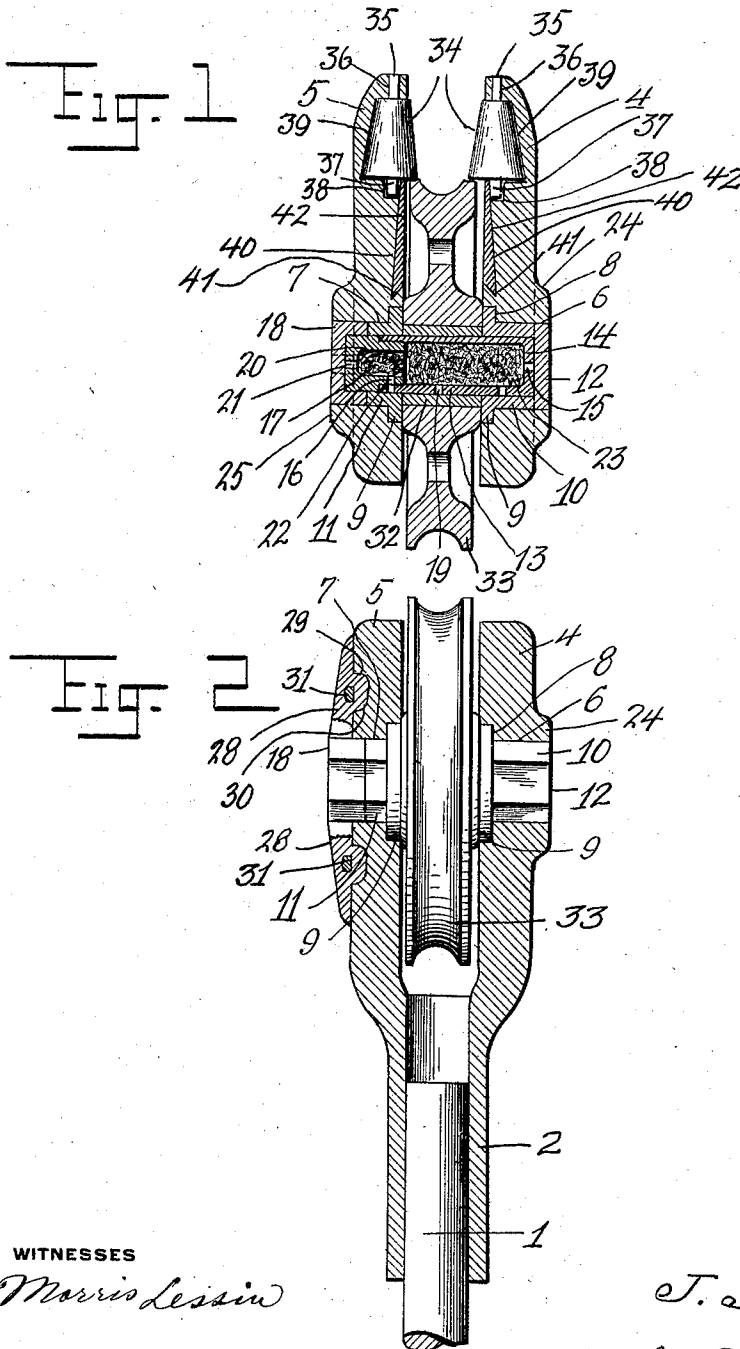
TROLLEY.

APPLICATION FILED JAN. 24, 1910.

986,842.

Patented Mar. 14, 1911.

2 SHEETS—SHEET 1.



WITNESSES

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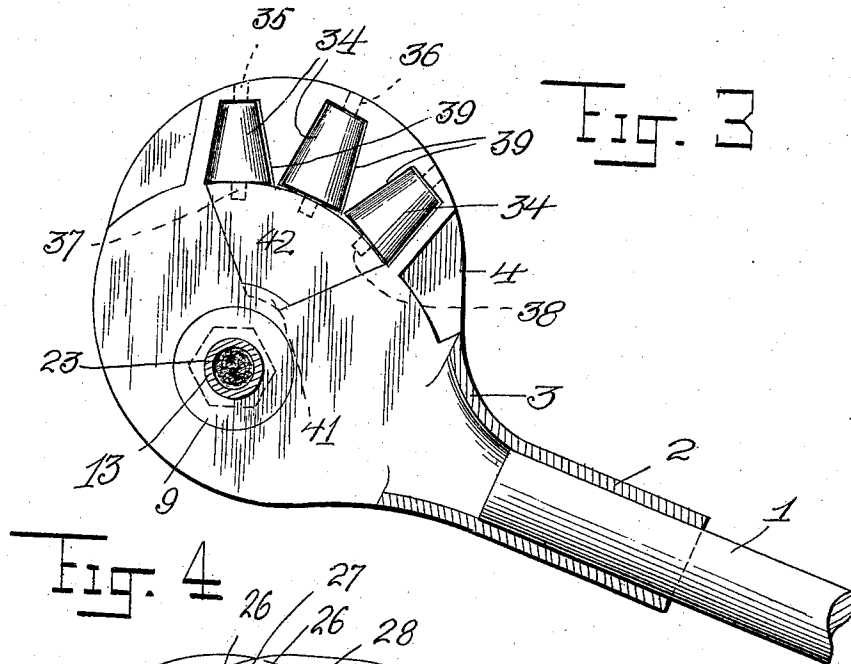


Fig. 3

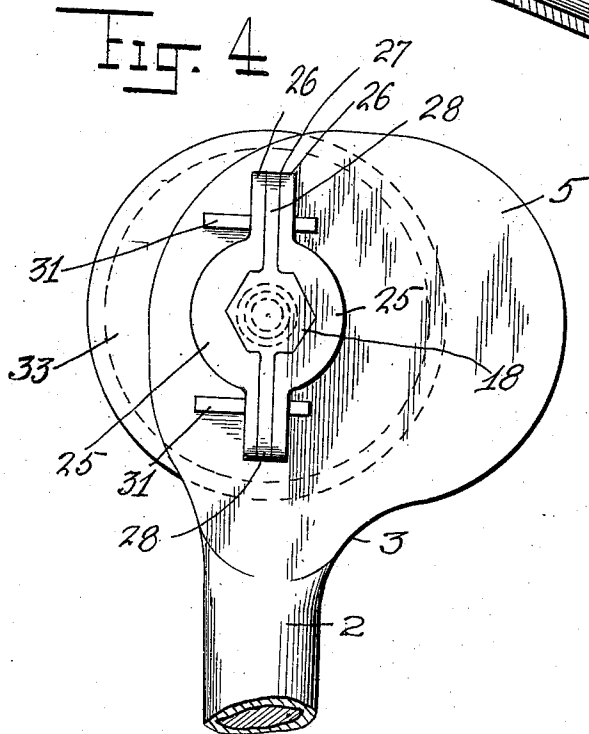
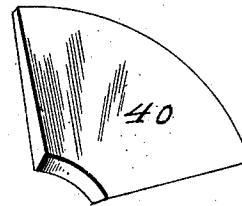


Fig. 4

Fig. 5



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN S. McCABE, OF BRIDGEVILLE, PENNSYLVANIA.

TROLLEY.

986,842.

Specification of Letters Patent. Patented Mar. 14, 1911.

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To all whom it may concern:

Be it known that I, JOHN S. McCABE, a citizen of the United States of America, residing at Bridgeville, 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 more particularly to trolley wheels and the harps thereof.

The primary object of my invention is to provide a trolley harp with positive and reliable means for lubricating the trolley wheels, thus insuring an easy movement of the wheel within the harp and thereby reducing the wear and tear of the wheel spindle or pin to a minimum.

A further object of this invention is to provide a trolley harp with a lubricating reservoir, thereby obviating the necessity of daily lubricating the trolley wheel within the harp.

A still further object of this invention is to accomplish the above results by a trolley that is simple in construction, durable and highly efficient for the purposes for which it is intended.

With these and such other objects in view as may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawings forming part of this specification, wherein there is illustrated a preferred embodiment of the invention, but it is to be understood that the structural elements thereof can be varied or changed, as to the size, shape and manner of assemblage without departing from the spirit of the invention.

In the drawings:—Figure 1 is a vertical sectional view of a trolley constructed in accordance with my invention, Fig. 2 is a similar view showing the trolley wheel in elevation, Fig. 3 is a vertical longitudinal sectional view of a portion of the trolley, Fig. 4 is a side elevation of the same, and Fig. 5 is a perspective view of one of the roller retaining plates.

In the accompanying drawings the reference numeral 1 denotes the upper end of a trolley pole and shrunk or otherwise mounted upon this pole is my improved trolley harp,

comprising a sleeve 2 having the upper end thereof flared, as at 3 and formed integral with oval shaped side plates 4 and 5, these plates being oppositely disposed. The plates 4 and 5 are provided with oppositely disposed hexagonal openings 6 and 7, the axis of said openings being removed from the center of the plates 4 and 5, and the object of this eccentric arrangement of said openings will presently appear. The openings 6 and 7 have the inner ends thereof terminating at annular seats 8 formed by cutting away the material bordering upon the inner ends of said openings, and these seats are adapted to receive the cylindrical heads 9 of bearings 10 and 11 mounted in the openings 6 and 7 respectively. These bearings are hexagonal in cross section to snugly fit within the openings 6 and 7, and the bearing 10 has the outer end thereof closed, as at 12 and said bearing is of a greater width than the bearing 11, the bearing 10 occupying the entire opening 6, while the bearing 11 simply occupies the inner half of the opening 7.

In the bearings 10 and 11 is mounted a cylindrical reservoir 13 having one end thereof closed, as at 14 and provided with a central opening 15, while the opposite end of the reservoir has the inner walls thereof threaded to receive the reduced exteriorly threaded shank 16 of a plug 17, said plug being exteriorly screw threaded to receive a cap 18 adapted to fit in the outer part of the opening 7 and retain the bearing 11 in the inner part of said opening. The reservoir 13 has the lower walls thereof provided with openings 19, and communicating with the interior of the reservoir is a recess formed in the plug 17. The outer end of the plug 17 is provided with an opening 21 adapted to longitudinally aline with the opening 15 of the reservoir. The reduced end or the shank 16 of the plug is also provided with an opening 22 adapted to register with one of the openings 19 formed in the bottom wall of the reservoir. In the reservoir and the recess 20 of the plug 17 is placed an absorbent material, as felt or waste 23 capable of holding a lubricant within the reservoir when the trolley is inactive to allow the lubricant to pass through the openings 19, 15 and 21 as occasion may require. The reservoir can be filled by removing the cap 18 and injecting the lubricant through the opening 21, or the plug 17

can be removed, particularly when the parts of the wheel are disassembled.

The outer side of the plate 4 has the material bordering upon the opening 6 reinforced by an annular enlargement 24, and the material surrounding the opening 7 at the outer side of the plate 5 is reinforced by oppositely disposed enlargements 25, these enlargements having parallel extensions 26 providing oppositely disposed slots 27 adapted to receive oppositely disposed arms 28, carried by the cap 18. The inner sides of the arms 28 are provided with protuberances 29 adapted to extend into recesses 30 provided therefor in the outer face of the plate 5. The arms 28 are retained within the slots 27 with the protuberances 29 in the recesses 30 by transverse pins 31 extending through alining openings provided therefor in the extensions 26 and the arms 28. With the cap 18 locked in position it is impossible for the bearings 10 and 11 to become accidentally displaced.

The cylindrical reservoir 13 serves functionally as a journal pin and revolvably mounted upon said pin is a bushing 32 fixed within the hub of a trolley wheel 33. This trolley wheel is of a shape similar to wheels at present used, with the exception that the guide flanges thereof are dispensed with. In lieu of the guide flanges, I use a plurality of frusto-conical shaped rollers 34 in connection with each one of the plates 4 and 5. The rollers 34 are carried by the confronting faces of the plates 4 and 5 and are disposed upon an arc having for its center the longitudinal axis of the lubricant reservoir 13. The rollers are furthermore disposed whereby their lower edges will project from the inner sides of the plates 4 and 5 above the peripheral edges of the trolley wheel 33, these rollers serving functionally as guide flanges for a trolley wire between the upper edges of the plates 4 and 5. The reason of eccentrically arranging the trolley wheel relatively to the plates 4 and 5 is now apparent. The rollers 34 have the upper spindles 35 thereof revolvably mounted in openings 36

in the upper edges of the plates 4 and 5, while the lower spindles 37 are revolvably mounted in sockets 38 provided therefor at the lower edges of the recesses 39 that receive the rollers. The recesses 39 within the confronting faces of the plates 4 and 5 are of a shape to receive approximately one-half of each roller, and to retain the lower spindles 37 within the sockets 38, retaining plates 40 are mounted in the inner sides of the plates 4 and 5. The lower edges of the plates 40 are beveled, as at 41 to engage in the lower edges of the recesses 42 provided for said plates, and these beveled edges assist in preventing the plates from becoming accidentally displaced. The plates 40 are sector shaped, as best shown in Figs. 3 and 5 of the drawings.

Having now described my invention what I claim as new, is:—

In combination, a trolley harp having each of its arms provided with a hexagonal opening terminating at one end in a seat, bearings having flanged heads extending in said seats and projecting in said openings, one of said bearings being closed at its outer end and the other of said bearings being open from end to end and of less length than the closed bearing, a cap for closing one end of the shorter bearing, a cylindrical casing constituting a lubricant containing reservoir extending in each of said bearings and having an open end, said reservoir abutting against the closed end of the elongated bearing, said reservoir provided with a plurality of openings, a hollow plug extending in the open end of said reservoir for closing it, said plug open at one end and having its other end provided with an aperture, said plug inclosed by said cap, and a trolley wheel mounted upon said casing and between the arms of the harp.

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

JOHN S. McCABE.

Witnesses:

KARL H. BUTLER,
JOHN STEPHANY.