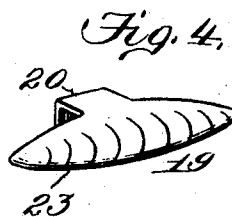
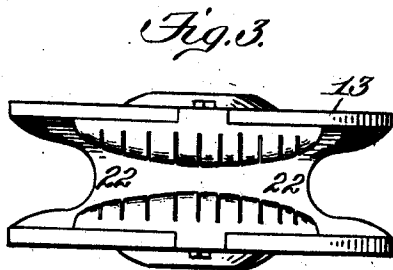
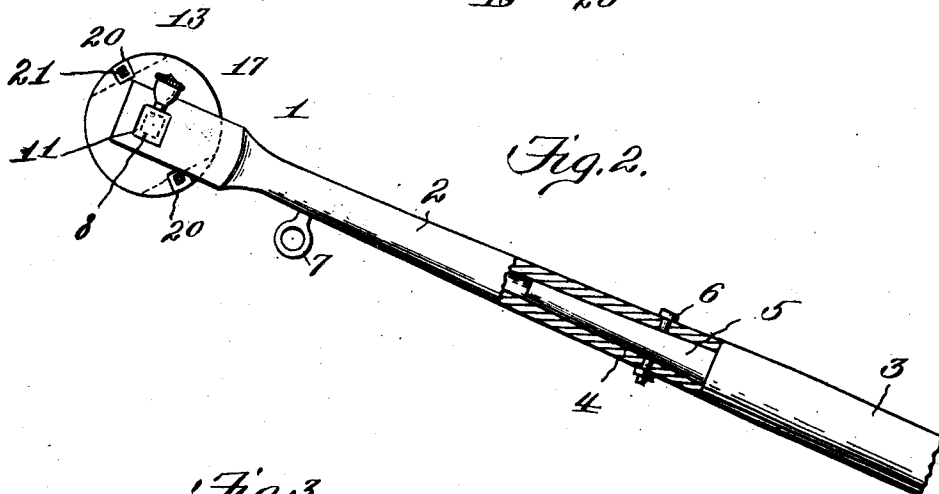
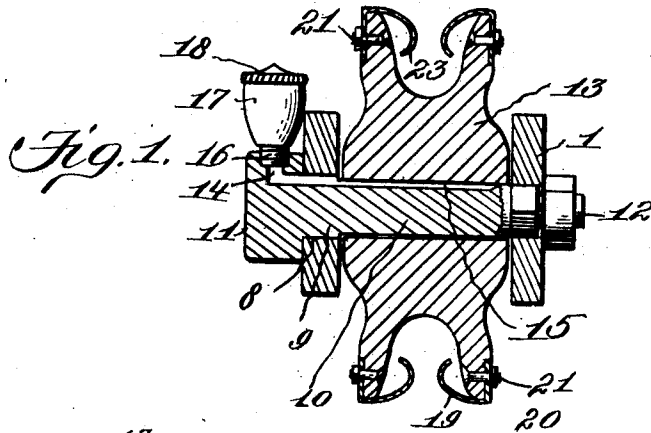


No. 826,439.

PATENTED JULY 17, 1906.

B. McMANAMAN.
TROLLEY.

APPLICATION FILED SEPT. 7, 1905.



Witnesses

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BRYAN McMANAMAN, OF WILKES-BARRE, PENNSYLVANIA.

TROLLEY.

No. 826,439.

Specification of Letters Patent.

Patented July 17, 1906.

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To all whom it may concern:

Be it known that I, BRYAN McMANAMAN, a citizen of the United States, residing at Wilkes-Barre, in the county of Luzerne and State of Pennsylvania, have invented new and useful Improvements in Trolleys, of which the following is a specification.

This invention relates to trolleys, and particularly to a novel construction of harp or fork, trolley-wheel, and pole whereby the trolley-wheel will have a more positive engagement and efficient operation with respect to the feeder or cable and in traversing switches and also by means of which the harp or fork carrying the wheel may be readily separated from the pole without detaching the latter from the car and conveniently carried to a place of repair in the event of breakage or disarrangement of the parts thereof. The journal-bolt for the trolley-wheel is also equipped with lubricating means for the latter and embodies an oil-cup which is easily accessible for replenishing the same with oil or other lubricant without requiring a disconnection of the wheel from the harp or fork. The wheel is provided with diametrically-opposed inwardly-projecting pairs of guards having a particular contour both longitudinally and transversely to render them effective in maintaining the wheel in contact with the feeder or cable and with switches, and thus obviate the inconvenience of ordinary trolley-wheel constructions, which frequently become disengaged from the cables or feeders with which they cooperate.

In the drawings, Figure 1 is a transverse vertical section through a trolley harp or fork, wheel, and the upper extremity of a pole embodying the features of the invention. Fig. 2 is an elevation of the parts shown by Fig. 1. Fig. 3 is a plan view of the trolley-wheel, particularly showing the longitudinal contour of one pair of guards carried thereby. Fig. 4 is a detail perspective view of one of the wheel-guards.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a harp or fork having an elongated shank 2, which is gradually increased in diameter from the base of the harp or fork to its lower terminal to form a flush joint with a pole 3. The lower extremity of the shank 2 has an elongated vertically-tapered socket 4 extending longitudinally thereinto to removably receive the

upper reduced end 5 of the pole 3, the latter extremity of the pole being immovably held under normal conditions in the socket 4 by a withdrawable pin or coupling-bolt 6, extending transversely through suitable openings formed in the said extremity 5 and the lower portion of the shank 2. The shank 2, adjacent to the harp or fork 1, also has a rope-attaching eye 7 secured thereto. The opposite members of the harp or fork 1 at the center near their upper ends have alined squared openings 8 formed therein to receive the squared portions 9 of an axle or journal bolt 10, the intermediate portion of said bolt being rounded or circular in cross-section and the one end formed with an angular head 11 and the opposite extremity with screw-threads 12 to receive a suitable securing-nut. The intermediate portion of the axle or journal bolt 10 passes through the center of a wheel 13, the latter having sufficient wobbling movement or lateral play to compensate for travel of the said wheel around curved arrangements of cables or feeders. It will be understood that the squared portions 9 of the axle or journal bolt 10 prevent the latter from turning in the harp or fork.

The head 11 of the axle or journal bolt 10 is bored to form a transverse duct 14, which communicates at its inner terminal with a longitudinal groove or lubricant-feeding channel 15, leading to the intermediate portion of the said bolt. The duct 14 has its outer extremity, at least, screw-threaded to removably receive the screw-threaded stem 16 of a lubricating-cup 17, having a removable cap 18. The cup and cap 18 are disposed uppermost with respect to the head 11, and the cup is adapted to be filled with oil or other lubricant, which is fed downwardly through the stem 16 and duct 14 to the channel 15 and from the latter passes to the bore of the wheel and the intermediate portion of the journal-bolt 10. This form of lubricating attachment is especially advantageous in view of the fact that the wheel 13 does not require the application thereto at frequent intervals of a lubricant by the usual methods.

The wheel 13 has at diametrically opposite points pairs of inwardly-projecting resilient guards 19, having central angularly-disposed securing-lips, one on each, as at 20. The lips 20 are secured to the flanges of the wheel 13 by suitable bolts and nuts 21, the heads of the bolts being disposed inwardly. Other fastening means can be employed for attaching

these guards, if desired. Each guard, as shown by Fig. 3, has a semi-elliptical longitudinal contour, so as to form throats 22 between the opposite extremities thereof to permit the feeder or cable to easily pass therebetween; but at the center the guards are close enough to cause the feeder to press them apart when entering the groove of the wheel, and thus hold the wheel in continual engagement with the said feeder. The inner edges of the opposing pairs of guards are curved outwardly, as at 23, to permit the feeder to ride easily therebetween and reduce the wear as much as possible on the feeder. By having the guards arranged in diametrically-opposed pairs, as set forth, each revolution of the wheel insures two engagements of the feeder or cable with the guards, and the interval between the guards where the cable or feeder has bearing without restriction in the groove of the wheel being so small or of such limited duration will result in preventing the wheel from becoming disengaged from the cable or feeder, with obvious advantages in trolley structures. These guards are also effective in holding the trolley-wheel in engagement with switches or bridges, particularly when a car is rounding a curve or passing from a main to a side track.

One of the most important structural features of the improved trolley is the elongated shank 2 of the harp or fork 1 and the particular means for separably connecting the said shank to the pole. The socket 4 and reduced extremity 5 are elongated to strengthen the coupling between the pole and shank. In the event of breakage or disarrangement of any of the parts of the harp or fork and wheel the latter may be readily removed or detached from the pole and manually transported to a shop or other place for repair without requiring a separation of the pole from the car. In view of the use of the guards 19 the trolley-rope will be used only at such times when it is necessary to reverse the trolley-pole.

The guards have an inward inclination and are located within the planes of the peripheral edges of the wheel-flanges provided by forming the cable or feeder groove to reliably hold the cable or feeder in said groove. If the guards become worn or broken, they may be readily removed and replaced by others of a like structure.

Changes in the proportions, dimensions,

and minor details may be resorted to without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is—

1. In a trolley, the combination of a fork, a wheel rotatably disposed in the fork, and a pair of resilient guards extending inwardly with respect to the groove of the wheel and rotatable with the latter.

2. In a trolley, the combination of a fork, a wheel rotatably disposed in the fork, and pairs of diametrically-opposed resilient guards curved inwardly with respect to the axis of the wheel and spaced to form a passage therebetween, the greatest width of the passage being at opposite ends of the guards.

3. In a trolley, the combination of a fork, a wheel rotatably disposed in the fork, and a pair of resilient guards carried by the wheel and having their inner terminals lying within the groove of the wheel and curved outwardly under the guards.

4. In a trolley, the combination of a fork, a wheel rotatably disposed in the fork, and a pair of resilient guards carried by the wheel and having their inner edges curved outwardly and transversely slitted.

5. In a trolley, the combination of a fork, a wheel rotatably disposed in the fork, and a pair of resilient guards carried by the wheel, the said guards having a semi-elliptical longitudinal contour, and a passage between the inner edges increased in width at opposite extremities of the guards.

6. In a trolley, the combination of a fork, a wheel rotatably disposed in the fork, and a pair of resilient guards carried by the wheel and having a semi-elliptical longitudinal contour, the inner edges of the guards being curved outwardly under the latter and spaced to form a passage, the said inner edges also being transversely slitted.

7. In a trolley, the combination with a fork, a grooved wheel rotatably disposed in the fork, and a pair of resilient guards removably secured to the opposite side portions of the wheel and projecting inwardly into the wheel-groove.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

BRYAN McMANAMAN.

Witnesses:

JAMES M. BOLAND,

AUSTIN REILLY.