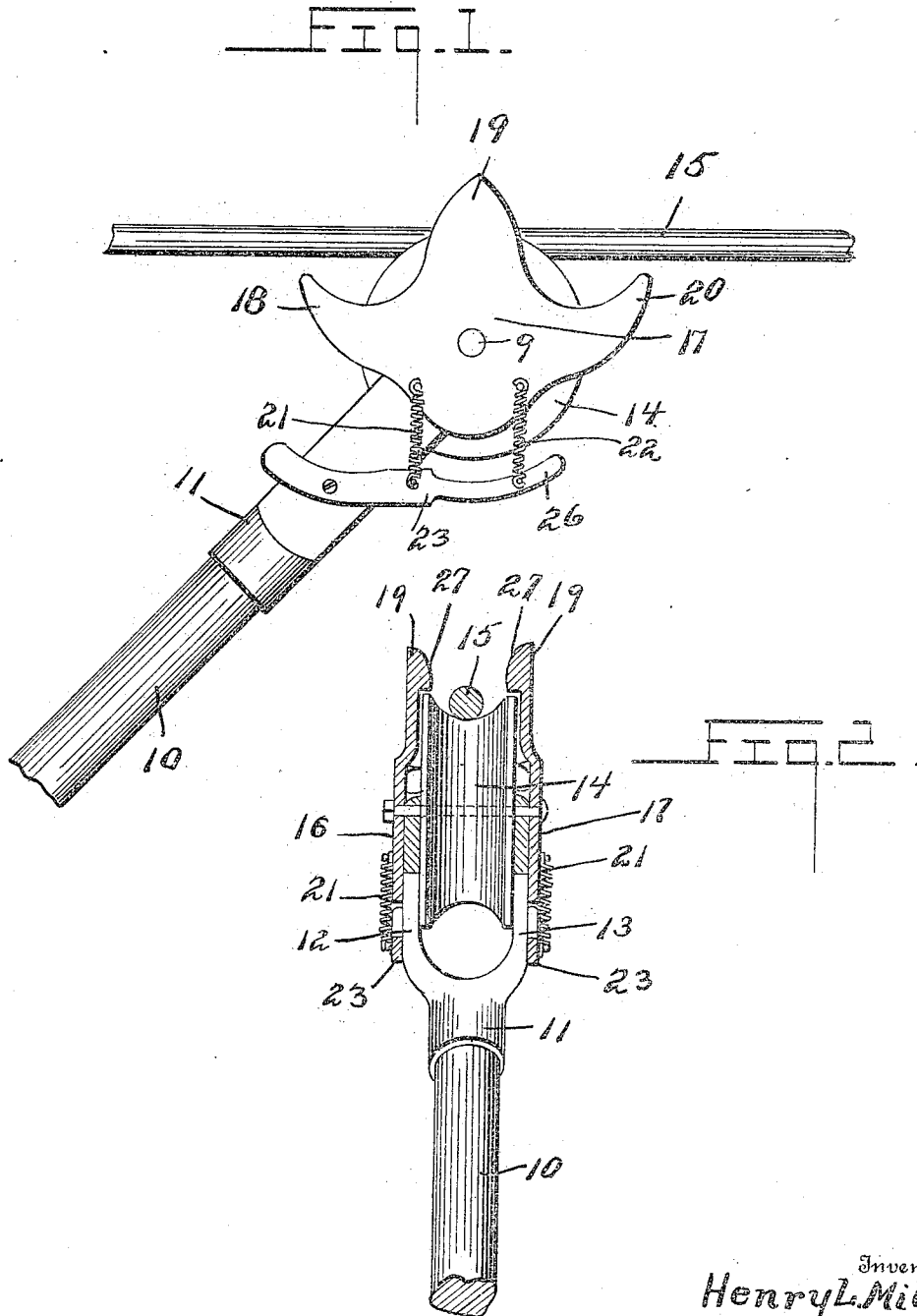


H. L. MILLER.
TROLLEY WHEEL GUARD.
APPLICATION FILED SEPT. 21, 1909.

961,786.

Patented June 21, 1910.

2 SHEETS—SHEET 1.



Witnesses

E. E. Johansen.
E. L. Chandler

Inventor
Henry L. Miller.

By Woodward & Looney

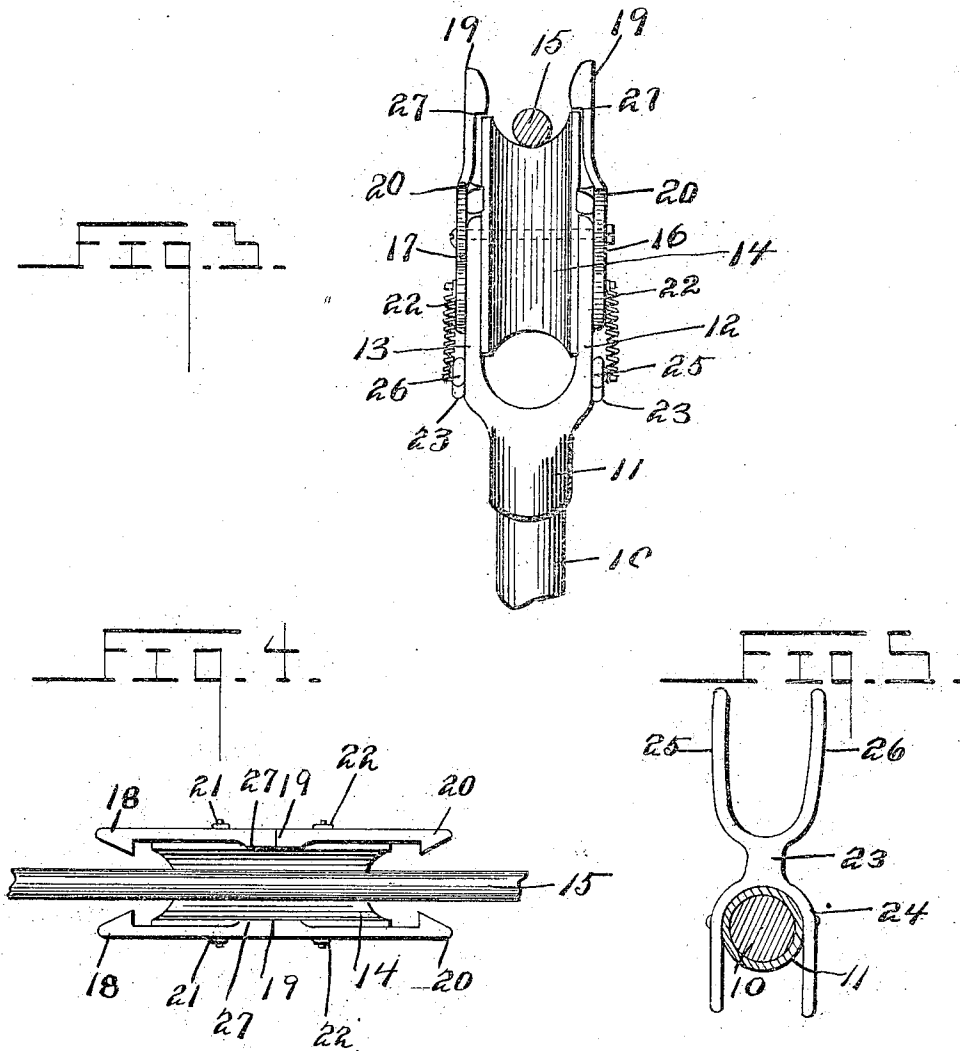
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UNITED STATES PATENT OFFICE.

HENRY L. MILLER, OF ST. LOUIS, MISSOURI.

TROLLEY-WHEEL GUARD.

961,786.

Specification of Letters Patent. Patented June 21, 1910.

Application filed September 21, 1909. Serial No. 518,800.

To all whom it may concern:

Be it known that I, HENRY L. MILLER, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Trolley-Wheel Guards, of which the following is a specification.

This invention relates to electric railways, and has special reference to that class which is known as overhead or trolley.

An object of this invention is to provide a means by which the trolley wheel employed in connection with devices of this character may be prevented from disengagement with the wire when crossing like wires or from vibrations due to the traveling of the vehicle.

The invention has for a further object a novel means for resiliently bringing into play a guard by the striking of obstructions upon the guard disposed in operative position.

A further object of the invention is the provision of a device of this character which comprises but few working parts which renders the same simple in construction and operation and economical to manufacture.

Other objects and advantages will be apparent from the following description and it will be understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a part of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a side elevation of a trolley harp having the improvement applied thereto, Fig. 2 is a central sectional view of the same, Fig. 3 is a rear elevation of the device, Fig. 4 is a top plan view of Fig. 1, Fig. 5 is a detailed view of the forked bracket employed in connection with the device.

Referring to the drawings, 10 designates a trolley pole which is of any suitable construction upon the upper extremity of which is secured a sleeve 11 which carries the arms 12 and 13 which form the trolley harp and between which is rotatably disposed a pulley 14 carried upon the pin 9 having a peripheral groove formed therein. The pulley 14 is held between the harp and is adapted to engage against the under side of the trolley wire 15 and is prevented from displacement

from the same by means of the tridentate plates 16 and 17. The plates 16 and 17 are held upon the pin 9 and are concentrically mounted with the pulley 14 but are supported against the outer faces of the arms 12 and 13. The plates 16 and 17 are each provided with three projections 18, 19 and 20 which are disposed in pairs and operate in parallel relation under the tensions of springs 21 and 22 depended from the plates 16 and 17, and engage at their lower extremities with a forked bracket 23. The forked bracket 23 comprises a semicircular clamp 24 which engages the opposite sides of the sleeve 11 and extends rearwardly in a horizontal position therefrom and carries the fork arms 25 and 26 which extend in parallel rearwardly and in alinement with the lower edges of the plates 16 and 17 for the purpose of maintaining the springs 21 and 22 in a vertical position. The prongs 18, 19 and 20 which are carried by the plates 16 and 17 are slightly offset toward the sides of the pulley 14 and carry the angled faced heads 27 which extend over the edges of the pulley 14 and serve to guide the trolley wire 15 to the groove formed in the pulley as the same is placed in position. The points of the projections 18, 19 and 20 are disposed some distance laterally of the respective sides of the wheel 14 for the purpose of insuring a ready engagement of the trolley wire 15 during the manipulation of the device. The springs 21 and 22 are of equal tensions and are disposed in pairs upon the opposite sides of the trolley harp and serve to hold the central prongs 19 in a vertical position and in normal active position.

In use, the pulley 14 occasionally leaves the trolley wire 15, owing to the vibrations of the pole 10, when the projections 19 which extend considerably above the pulley 14 engage the sides of the trolley wire and prevent the movement of the pulley 14 from lateral displacement beneath the trolley wire 15. When the device reaches a cross wire the projections 19 strike against the same and are thereby caused to be thrown backwardly admitting of the passage of the cross wire over the pulley 14 and at the same time raising the projections 18 to engage with the trolley wire 15 and prevent the lateral displacement of the pulley 14 during the passage of the object thereover. If the harp is operated in the opposite direction

the prongs 19 will be deflected oppositely and the prongs 20 will be raised into operative position to engage against the opposite sides of the trolley wire 15 and would
5 thus prevent the lateral displacement of the harp. Owing to the tensions of the springs 21 and 22 the plates 16 and 17 are caused to return to their normal upright positions immediately upon the release of the prongs
10 19 from engagement with the cross wire or other obstructions.

What is claimed is:

A device of the class described comprising a trolley harp, a pair of plates disposed in
15 parallel upon the opposite sides of the harp concentrically and pivotally mounted with the pulley disposed in said harp, upwardly ex-

tended projections disposed in parallel from said plates projected over the edges of the pulley, projections disposed on said plates 20 upon the opposite sides of said upwardly projected projections mounted in parallel and engaged about the edges of the pulley, all of said projections being diverged upwardly and outwardly from the pulley and means 25 for tensionally holding said upwardly extended projections in normal position.

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

HENRY L. MILLER.

Witnesses:

PAUL KASSING,
JOHN KUNZ.