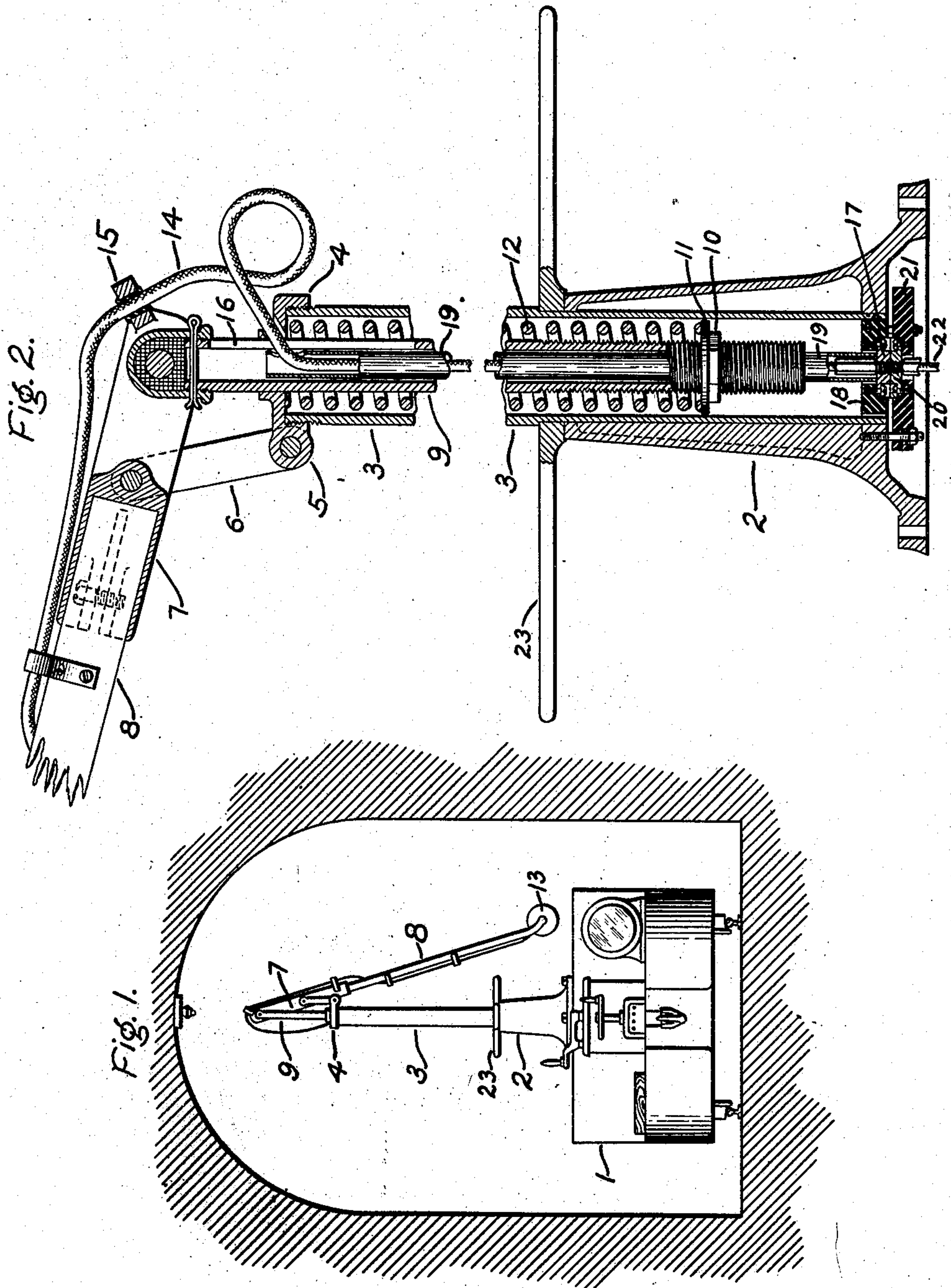


No. 885,063.

PATENTED APR. 21, 1908.

W. A. LOUDON.
TROLLEY STAND.

APPLICATION FILED AUG. 9, 1905.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM A. LOUDON, OF CHICAGO, ILLINOIS, ASSIGNOR TO GENERAL ELECTRIC COMPANY,
A CORPORATION OF NEW YORK.

TROLLEY-STAND.

No. 885,063.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed August 9, 1905. Serial No. 273,373.

To all whom it may concern:

Be it known that I, WILLIAM A. LOUDON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Trolley - Stands, of which the following is a specification.

This invention relates to underrunning trolleys for electric railways, and its object is to enable the trolley pole to be reversed in a confined space.

Ordinarily when the trolley stand is rotated to reverse the position of the trolley, the pole swings around in a large circle, requiring a good deal of clear space about the car. But in the case of mining locomotives, or cars running in tunnels, such for instance as those of the Illinois Tunnel Company at Chicago, it is frequently necessary to reverse the trolley in the drifts or tunnels where there is no room laterally to swing the ordinary type of pole.

My invention aims to provide a pole that can be reversed within the width of the car, so that it is of especial advantage in tunnel systems.

The invention consists in a trolley pole having its heel hinged to a spring plunger housed in a suitable standard or column, and fulcrumed on a link which is hinged at one end to said pole near its heel and at its other end to the side of said standard. The height of the standard is such that the pole can be turned down alongside of it, and in this position the standard and pole can be rotated to reverse the pole.

In the accompanying drawing, Figure 1 is an end elevation of an electric mining locomotive equipped with my improved trolley pole and located in a tunnel; and Fig. 2 is a sectional elevation of the standard and a part of the pole, shown on a larger scale.

On the top of the electric locomotive 1 is secured the pedestal 2 which affords an upright cylindrical bearing for the rotatable tubular standard 3. A cap 4 is fastened on the top of said standard, and at one side of said cap are ears 5 to which is hinged a link 6. A socket 7 for the trolley pole 8 is hinged to the upper end of the link, and the heel of the socket is hinged to a tubular plunger 9 which passes down through the cap 4 into the standard 3. The lower end of the plunger is screw-threaded to receive a nut 10 which supports a washer 11 serving as one

abutment for a helical spring 12 which surrounds the plunger in the annular space between said plunger and the standard. The upper end of the spring abuts against the cap 4. The tension of the spring can be adjusted by means of the nut so as to produce the requisite upward pressure of the trolley wheel 13 against the overhead conductor, the upper end of the link 6 being the fulcrum on which the trolley-pole swings.

The trolley pole is preferably made of wood, and an insulated conductor 14 leads from the trolley-wheel through an eye 15 on the heel of the socket and through a hole in the cap 4 and a longitudinal slot 16 in the tubular plunger into and down through the same to a contact plate 17 fixed in a block of insulating material 18 which forms the bottom of the tubular standard. The slot 16 permits the plunger to rise and fall without disturbing the conductor 14 and the conductor is protected inside the plunger by a sheath 19 of insulating material.

A contact plate 20 is fixed in a plate 21 of insulation secured to the lower part of the standard, in rubbing contact with the plate 17. A lead 22 connects the plate 21 with the motor. This construction permits the tubular standard to be rotated to any extent without breaking the motor-circuit. A cross-bar 23 secured to said standard enables the operator to turn it easily.

The standard is of such height, and the trolley pole is of such length that the latter can be drawn down to an almost vertical position without danger of the trolley wheel striking the top of the locomotive, as clearly shown in Fig. 1. In this position the standard and the pole can easily be rotated so as to reverse the trolley and permit the locomotive to run in the opposite direction to that in which it had been previously proceeding. Fig. 1 shows the standard turned ninety degrees from either of its normal running positions. It will be seen that it occupies a position substantially within the width of the locomotive, so that it is in no danger of striking the side of the tunnel.

What I claim as new and desire to secure by Letters Patent of the United States, is,

1. The combination with an electric vehicle, of a standard mounted thereon, a spring plunger in said standard, a trolley pole hinged to said plunger, and a link hinged to said standard and pole.

2. The combination with an electric vehicle, of a pedestal mounted thereon, a standard rotatable in said pedestal, a spring plunger in said standard, a trolley pole hinged to said plunger, and a link connecting said standard and pole.

3. The combination with an electric vehicle, of a rotatable tubular standard mounted thereon, a tubular spring plunger in said standard, a trolley pole hinged to said plunger, a link connecting said standard and pole, whereby the latter may be folded down alongside of the standard, and an insulated conductor secured to said pole and passing down through said tubular plunger.

4. The combination with an electric vehicle, of a rotatable tubular standard mounted thereon, a tubular spring plunger in said standard provided with a longitudinal slot, a trolley pole hinged to said plunger, a link

hinged to said pole and standard whereby the pole may be folded down alongside of the standard, an insulated conductor secured to said pole and passing through the slot in said plunger, and a sheath surrounding said conductor inside of said plunger.

5. The combination with a standard, of a spring pressed plunger in said standard, guides for said plunger, a trolley pole hinged to said plunger, and a fulcrum support for the trolley pole flexibly connected to said standard whereby the pole may be folded down alongside of the standard.

In witness whereof, I have hereunto set my hand this 4th day of August, 1905.

WILLIAM A. LOUDON.

Witnesses:

L. G. CRAWFORD,
H. G. MacLEOD.