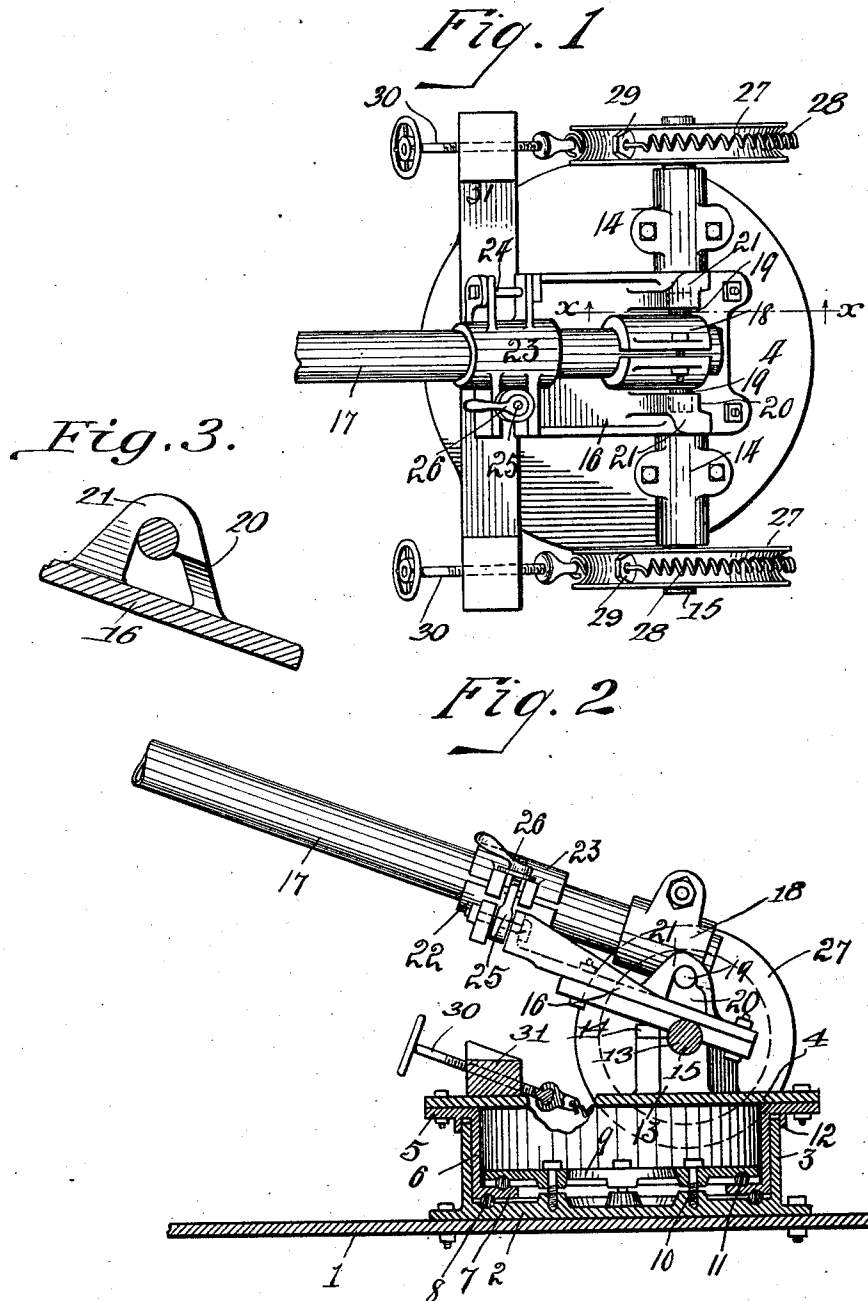


E. U. DOWN.
TROLLEY POLE STAND.
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Patented Dec. 3, 1912.



WITNESSES.
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UNITED STATES PATENT OFFICE.

ERNEST U. DOWN, OF BOWLING GREEN, OHIO.

TROLLEY-POLE STAND.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ERNEST U. DOWN, a citizen of the United States, and a resident of Bowling Green, in the county of Wood and State of Ohio, have invented a certain new and useful Trolley-Pole Stand; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to trolley-stands for use on the cars of electric street or inter-urban railways, and has for its object the provision of a simple and improved device of this character, which is strong and durable in its construction, inexpensive of manufacture, and efficient in its operation, and which is capable of having a trolley-pole easily and quickly attached to or removed therefrom.

The invention is fully described in the following specification, and while, in its broader aspect, it is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is a plan view of a trolley-stand embodying my invention. Fig. 2 is a side elevation thereof with parts broken away and in vertical section, and Fig. 3 is an enlarged section on the line *x, x* in Fig. 1.

Referring to the drawings, 1 designates the top or roof of a car to which is bolted or otherwise suitably secured a base-plate 2 having an annular flange 3 rising therefrom to provide a bearing box for the rotatable parts of the trolley-stand, as shown.

The turn-table of the stand is shown in the present instance as comprising a table-plate 4 having a ring 5 bolted or otherwise suitably secured to the under side thereof from the inner edge of which projects the cylindrical downwardly extending flange 6. This flange fits within the flange 3 of the base for free rotary movements therein, and has an inwardly turned foot-flange 7, which rests upon ball-bearings 8 that work in registering races in said foot-flange and the

base-plate 2. The turn-table is held in engagement with the base bearing 2—3 by a retaining annulus 9, which is secured to the base plate 2 within the foot-flange 7 by screws 10, or in any other suitable manner, and coöperates with a set of ball-bearings 11 to hold said foot-flange in properly adjusted bearing engagement with the ball-bearings 8. A shallow flange 12 projects from the under side of the ring 5 without the flange 6 and coöperates therewith to form an annular socket into which the upper edge of the base flange 3 projects.

It is evident that the base 2 and table 4 with its depending flange 6 form a closed magazine for the reception and retention of a suitable lubricant, which has free access to the bearings 8 and 11 to lubricate the same.

Rising from the table-plate 4 adjacent one side thereof are the two spaced bearing lugs 13 which coöperate with suitable bearing caps 14 to form bearings for the opposite end portions of a shaft 15. Fixed to the shaft 15 intermediate said bearing is a bracket or pole carrying member 16 to which the trolley-pole 17 is removably secured. To facilitate an easy and rapid engagement of a pole with or removal of the same from the bracket 16 with its trolley-wheel in upright or proper wire engaging position the inner end of the pole has a clamp or split ring 18 rigidly secured thereto and from the opposite sides of which project studs or trunnions 19, which engage within the angled or substantially L-shaped bearing recesses 20 in lugs 21 arising from the forward end portion of the bracket 16.

The rear end of the bracket 16 is provided with a pole seat 22 to which the pole is securely clamped by a clamping member 23. This clamping member is hinged to the bracket, as at 24, and is held in clamped position by a hinge clamping bolt 25 and coöperating nut 26, as is apparent. This clamp may be quickly released and swung from pole engaging position by loosening the nut 26 sufficiently to permit the clamping bolt to be swung from between the co-acting forked end of said clamp. The clamping of the pole by the coöperating clamping parts 22—23 holds the trunnions

19 of the pole in the upper angled ends of the slots 20 in which they work, thus adapting the trunnions 19, lugs 21, and clamps 22—23 to cooperate to rigidly hold the pole
 5 against longitudinal movements relative to the bracket 16. Upon a release of the clamp 22—23 the pole can be moved relative to the bracket 16 to lower the trunnions 19 into the lower forwardly opening portions of
 10 the recesses 20 to permit a forward movement of said trunnions from engagement with said recesses, as is apparent.

Peripherally grooved disks or sheaves 27 are carried at the outer ends of the shaft 15 without the bearings 13, and these sheaves are partially encircled by coiled tension springs 28. These springs are shown as attaching at one end thereof to lugs 29 provided in the peripheries of the respective
 20 sheaves, and thence extend forward and downward around the sheaves, and are swiveled at their opposite ends in any suitable manner to tension adjusting screws 30. The screws 30 thread through the end portions of a block or cross piece 31 which is
 25 mounted upon the table 4 adjacent its rear edge. It is evident that the springs 28 cooperate with the sheaves 27 to hold the pole 17 yieldingly elevated in position for its
 30 trolley-wheel to engage a trolley-wire.

It is apparent that I have provided a simple and efficient trolley-stand which is strong and inexpensive in its construction and adapted to permit a free horizontal
 35 turning of a pole relative to a car, and also to permit an easy and rapid removal from or engagement of a pole with the pole holding bracket thereof.

I wish it understood that my invention is
 40 not limited to any specific construction or arrangement of the parts except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is—

1. A trolley stand comprising a base plate having an annular flange rising therefrom, a top plate having its marginal edge projected over said base flange and provided
 50 with two annular depending flanges which cooperate to form an annular channel for receiving the upper edge of the base flange, the inner of said depending flanges having its lower edge turned inwardly to form a
 55 foot flange, ball bearings between said foot flange and base plate and a retaining member removably secured to the base plate within said foot flange and having its outer edge projecting over and in ball bearing contact with said foot flange, and pole carrying means oscillatingly mounted on said top
 60 plate.

2. A trolley stand comprising a base plate having an annular flange rising therefrom, a
 65 ring-like member mounted over said flange

and having a pair of spaced annular flanges depending therefrom to provide a socket for the base flange to work in, the inner of said flanges projecting downwardly within the base flange and having its lower edge angled
 70 inwardly to provide a foot flange, ball bearings between said foot flange and base plate, an annular member removably secured to the base plate within said foot flange and having its outer edge projecting over the foot flange to hold it to its seat upon the base plate, a top plate bolted to said annular member to cooperate therewith to form a turn-table, and pole carrying means oscillatingly
 75 mounted on said top plate.

3. In a trolley-stand, a base member having an annular flange rising therefrom, a turn-table having an annular part rotatably fitting within said flange and provided at its base with an intumed foot flange, ball bearings between said foot-flange and base, a member secured to said base member within its flange and having a portion projecting outward over said foot-flange, ball bearings between said member and foot-flange, and pole carrying means mounted for vertical
 80 oscillatory movements on said table.

4. In a trolley-stand, a turn-table, a pole carrying bracket mounted for vertical oscillatory movements on said table, angular recessed lugs provided on the bracket, a pole having trunnions laterally projecting from the inner end thereof for removably engaging with the recesses in said lugs, means for clamping the pole to said bracket to prevent
 90 a disengagement of said lugs and trunnions, and means acting on the bracket to yieldingly hold the pole in elevated position.

5. In a trolley-stand, a horizontally rotatable part, a pole carrying bracket mounted for vertical oscillatory movements on said part and having angular recessed lugs rising therefrom and a pole seat at its rear end, a pole capable of resting in said seat and having its inner end provided with trunnions for removably engaging with said lugs, clamping means cooperating with said bracket seat and said lugs and trunnions to rigidly hold the pole to the bracket, and means for holding the free end of the pole normally elevated.

6. In a trolley-stand, a base member, a turn-table rotatably carried by said base member and having bearings rising therefrom, a shaft mounted in said bearings for vertical rocking movements, a pole carrying bracket secured to said shaft and having angular recessed trunnions rising therefrom over said shaft and provided with a pole seat at its rear end portion, a pole adapted to rest in said seat and having trunnions at its rear end removably engaging the recesses of said lugs, means for removably clamping the pole to its seat and cooperating with the seat to prevent a disengagement of said
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trunnions and lugs, sheaves carried at the ends of said shaft, coiled contraction springs fixed at one end to said sheaves and extending therearound, and adjustable means to
5 which said springs are anchored and coöperating therewith to influence a turning of the sheaves and shaft in one direction.

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

ERNEST U. DOWN.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."