

J. LEDWINKA.
POLE SYSTEM.
APPLICATION FILED OCT. 27, 1909.

1,069,887.

Patented Aug. 12, 1913.

2 SHEETS-SHEET 1.

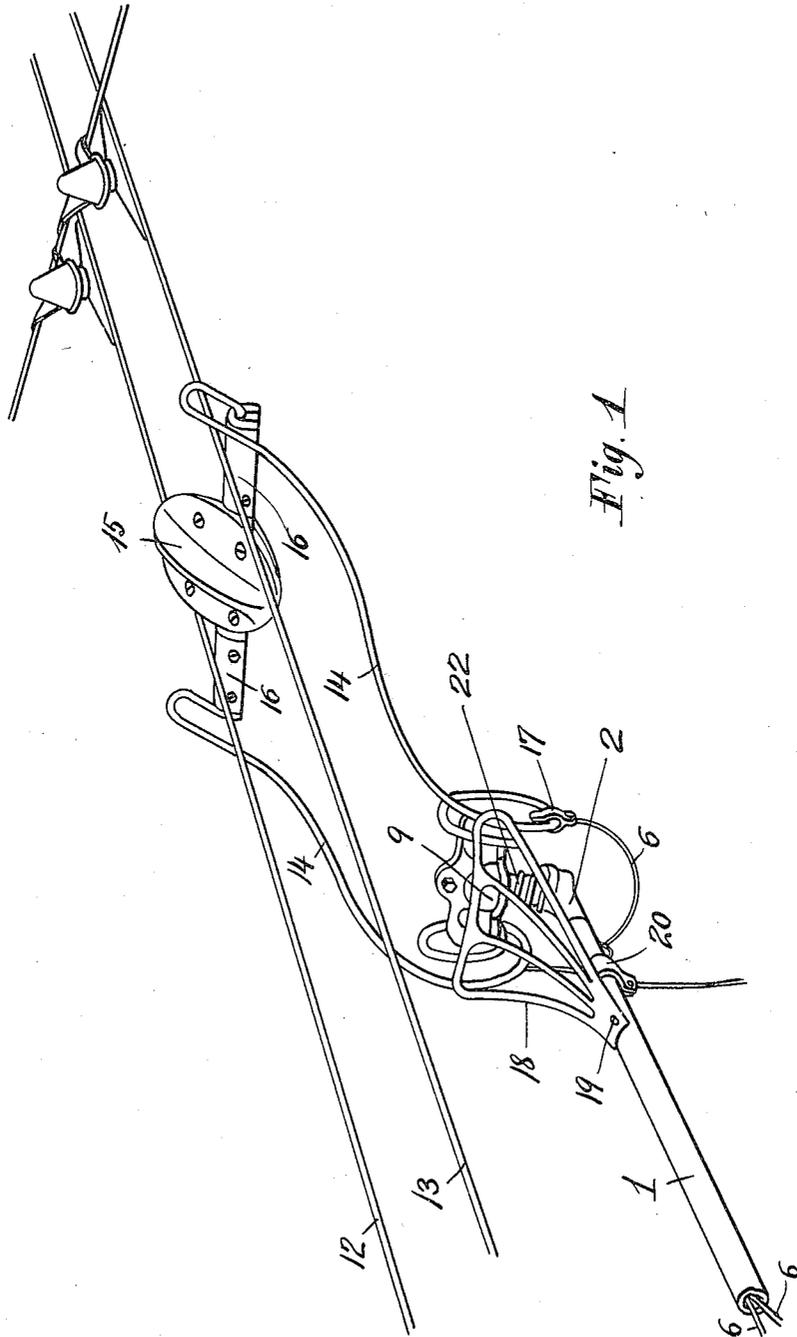


Fig. 1

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W. G. Margeson
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Joseph Ledwinka Inventor
By his Attorneys
Jones, Addington & Ames

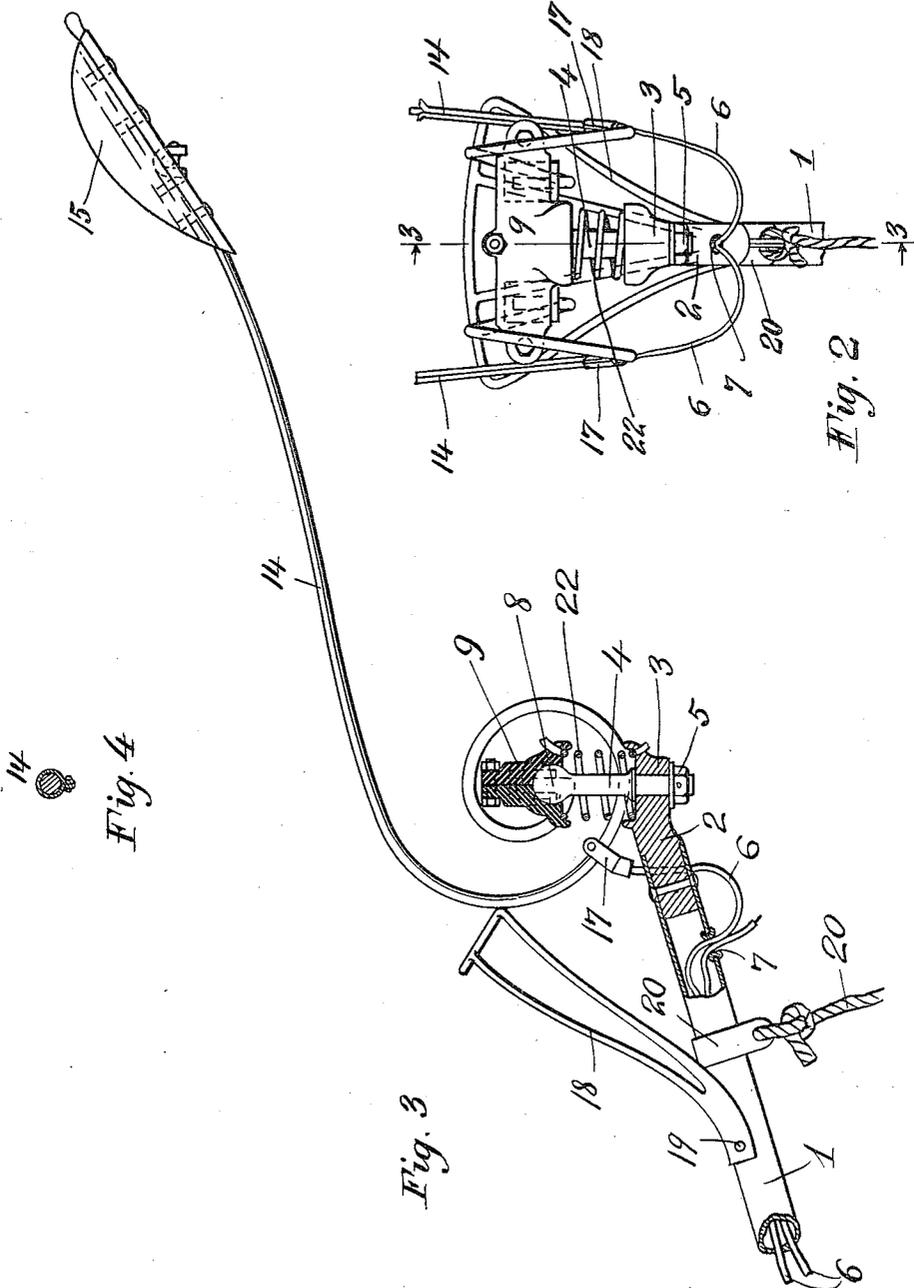
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Witnesses
W. C. Morgan
D. Harold Bush

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By his Attorneys
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UNITED STATES PATENT OFFICE.

JOSEPH LEDWINKA, OF PHILADELPHIA, PENNSYLVANIA.

POLE SYSTEM.

1,069,887.

Specification of Letters Patent.

Patented Aug. 12, 1913.

Application filed October 27, 1909. Serial No. 524,922.

To all whom it may concern:

Be it known that I, JOSEPH LEDWINKA, a subject of the Emperor of Austria-Hungary, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Pole System, of which the following is a specification.

My invention relates to improvements in pole systems particularly adapted to be used in trackless trolley systems.

The objects of my invention are, first, to provide a pole system for taking current from trackless trolley wires; second, to provide a pole system having means to prevent damage to or tearing down the overhead construction should the sliding contacts jump the trolley wires; third, to provide a pole system that is flexible, whereby it will adjust itself to the unevenness in the overhead wires and will permit of the propelled vehicle to turn out on either side of the trolley wires; and fourth, to provide a pole system that will not bridge across the trolley wires so as to form a short circuit.

Further objects will more definitely appear from the detailed description to follow.

The invention is clearly defined and pointed out in the claims.

A construction embodying the feature of my invention is illustrated in the accompanying drawings, forming a part of this application, in which—

Figure 1. is a view in perspective of my improved pole system for trackless trolleys. Fig. 2. is a bottom view of the head of the pole, the upper part of the spring bows and connecting saddle being removed. Fig. 3. is a side view, partly in section, of my pole system, showing one of the spring bows and saddle, taken on line 3—3 of Fig. 2. Fig. 4. is a cross-section of one of the bows.

Similar letters of reference refer to similar parts throughout the several views.

Referring to the drawings, the pole 1 is adapted to be secured at its lower end to the top of the car by a standard trolley base, although any other suitable securing means may be used. The upper end of the pole is provided with the wooden or metallic head 2 suitably formed and shaped so as to provide a seat 3 to receive the bolt 4 secured thereto by the nut 5. The pole 1 is preferably tubular to receive the two wires 6, 6,

which lead out from the pole near its upper end through the opening 7. The head 8 of the bolt 4 is ball-shaped and engages the ball socket in the yoke 9. This yoke carries at each end a bushing or cap 11 preferably formed of insulating material, the purpose of which will more clearly appear hereinafter.

In trackless trolley systems two conducting wires are used, one to supply current and the other to return the current to the source of supply. To receive current from and return it to the overhead wires 12 and 13, I provide spring bows 14, 14, one end of which is secured to the bushing or cap 11. The bows are each spirally coiled near the lower end and then curve upwardly toward the overhead trolley wires, the upper end of each bow curving inwardly toward each other and secured to the saddle 15. This saddle 15 is preferably made of insulating material so as to separate and insulate from each other the shoes 16, 16, carried by those parts of the bows which bend inwardly toward each other. In the preferred form of my invention these shoes are detachably secured to the spring bows 14, 14 so as to permit of their renewal when worn out, while the upper part of the saddle 15 is preferably made ovate so as not to catch in the overhead construction. This saddle is adapted to pass between the wires 12 and 13 while the shoes 16, 16 form sliding contacts therewith. The wires 6, 6 are electrically connected to the bows 14, 14 by means of the split lugs 17, thereby establishing electrical connection between the trolley wires 12 and 13 and the car motor. The bows are covered from the lug 17 to the sliding shoe 16 with leather or other suitable insulating material so as to prevent short-circuiting should the bow fall across the two wires.

In order that the spring bows and saddle will normally return to a position in alignment with the pole 1, I provide the coiled spring 22, one end of which is secured to the yoke 9 while the other end is secured to the seat 3. This coiled spring 22 tends to keep the yoke 9 under tension and to return the yoke with the spring bows 14, 14, secured thereto, back to central position.

Means are provided to prevent the coiled construction of the bows 14, 14, the yoke 9 and the bolt 4 from catching in the overhead construction, should the shoes 16, 16 jump the trolley wires. In the preferred form of

my invention, these means consist of the triangular-shaped guard 18. This guard is secured at its apex 19 to the pole 1 and then curves upwardly to the coiled part of the bows 14, 14. The pole 1 can be drawn down toward the car by the rope 21 secured to the pole 1 by means of the lug 21.

It is thus apparent from the foregoing description of my improved pole system that current can be taken from the overhead wire 12 through the sliding contact formed by one of the shoes 16, the bow 14 and conducting wire 6 to the car motor, and the current returned through the other conducting wire 6, the spring bow 14, shoe 16, to the trolley wire 13. The saddle 15 being of insulating material will prevent any short circuiting between the shoes 16, 16. The ball and socket joint between the bolt 4 and the yoke 9 permits of the propelled vehicle to turn out on either side of the street from beneath the trolley wires, while the spring feature of the bows will always maintain the shoes 16, 16 in contact with the overhead trolley wires. Should the shoes jump the trolley wires so as to permit the pole to fly upwardly, the overhead construction work would strike the guard 18 and be deflected thereby to the top of the spring bows 14, and thence by the top of the saddle 15, thereby preventing the overhead construction work from being damaged or torn down.

While I have shown and illustrated a pole system adapted particularly for use on trackless trolley systems, it is capable of being constructed for use on trolley systems using sliding shoe contacts, without departing from the spirit of my invention.

What I claim as new and desire to secure by Letters Patent is:

1. In a pole system, the combination of a tubular pole, conducting wires carried therein, a yoke carried by said pole and angularly

adjustable thereon, a spring secured to said yoke and said pole for normally positioning said yoke, resilient members carried by said yoke and electrically connected with said conducting wires, contacts carried by said members to form electrical connections with the trolley wires, a saddle to insulate said contacts from each other, and a triangular guard to deflect any obstruction from the upper end of said pole.

2. In a pole system, in combination, a trolley pole, a bolt having a ball-shaped head secured to the upper end of said trolley pole, a yoke having a socket for receiving the head of said bolt, a spring engaging said yoke and pole for normally positioning said yoke, a pair of resilient members secured to and insulated from said yoke, a pair of sliding contacts carried by the outer ends of said members, an insulated saddle secured to the outer ends of said members between said contacts, and means for deflecting any obstruction from the upper end of said pole.

3. In a pole system, in combination, a trolley pole, a bolt having a ball-shaped head secured to the upper end of said trolley pole, a yoke having a socket for receiving the head of said bolt, a spring engaging said yoke and pole for normally positioning said yoke, a pair of resilient members secured to and insulated from said yoke, a pair of sliding contacts carried by the outer ends of said members, an insulated saddle secured to the outer ends of said members between said contacts, and a triangular guard for deflecting any obstruction from the upper end of said pole.

In testimony whereof, I sign this specification in the presence of two witnesses.

JOSEPH LEDWINKA.

Witnesses:

BERTHA DRYFOOS,
ADOLPH S. VOTTELER.