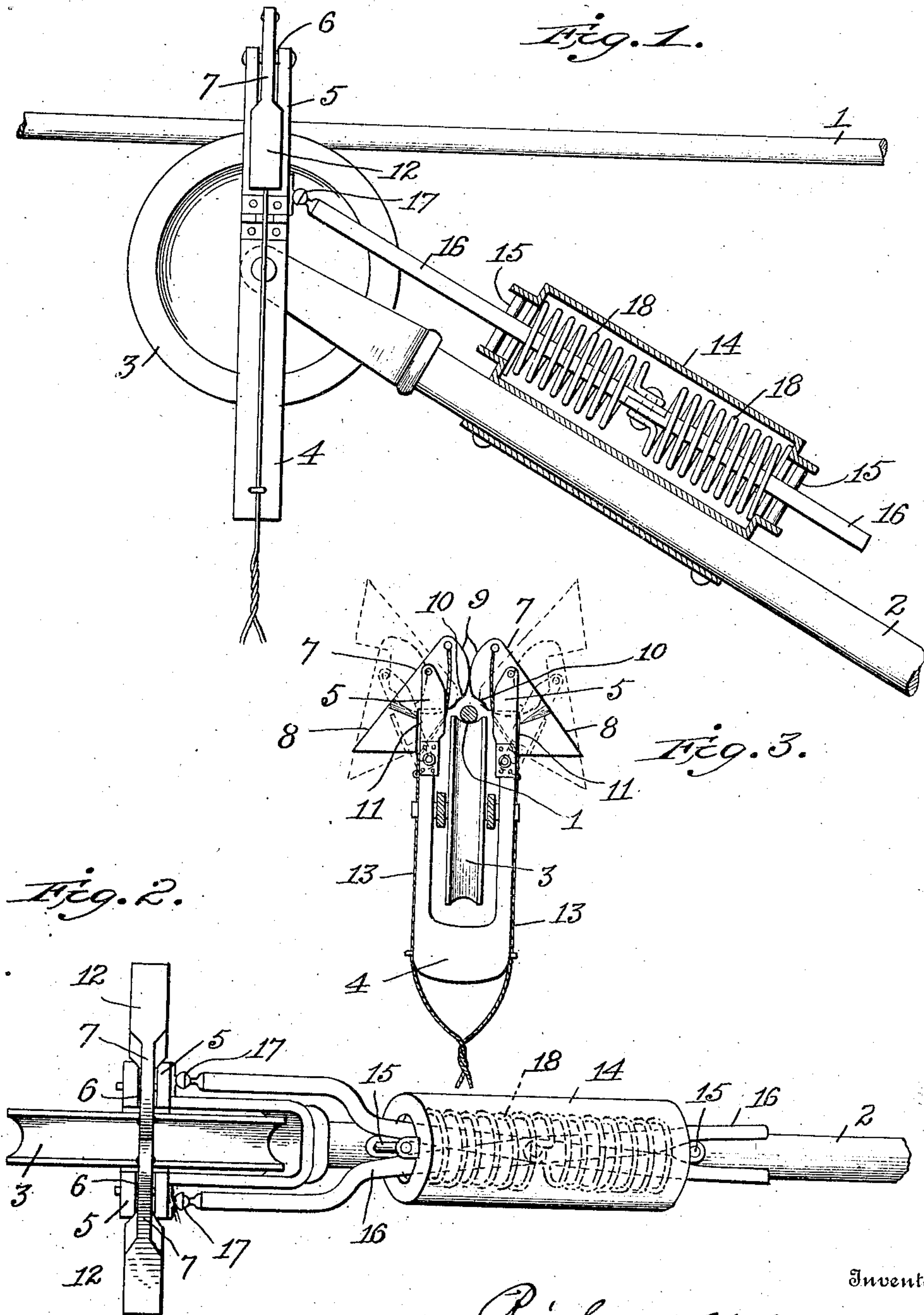


No. 849,871.

PATENTED APR. 9, 1907.

R. W. WALKER.
TROLLEY.

APPLICATION FILED OCT. 15, 1906.



Witnesses
Edwin L. Yewell
Percy B. Holt

Inventor
Richard W. Walker
By
R. M. Bishop
Attorney

UNITED STATES PATENT OFFICE.

RICHARD W. WALKER, OF TOPEKA, KANSAS.

TROLLEY.

No. 849,871.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed October 15, 1906. Serial No. 338,944.

To all whom it may concern:

Be it known that I, RICHARD W. WALKER, a citizen of the United States of America, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Trolleys, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in trolleys, and has for its object the provision of means whereby an obstruction on the wire may be readily passed, the trolley-wheel will be held to the wire during the travel of the car, and will be guided to the wire when being shifted at the end of the line or other places. These objects are attained by the use of the mechanism shown in the accompanying drawings; and the invention consists in certain novel features of the same, as will be hereinafter first fully described and then particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the upper portion of a trolley-pole with its trolley-wheel and having my improvements applied thereto. Fig. 2 is a plan view of the same, and Fig. 3 is a rear elevation thereof.

Referring to the drawings, 1 designates the trolley-wire, 2 the trolley-pole, and 3 the trolley-wheel mounted in the upper end of the pole and in contact with the wire.

In carrying out my invention a yoke 4 is pivotally mounted on the ends of the trolley-wheel spindle and depends below the trolley-wheel, as clearly shown. Arms 5 are hinged to the upper ends of the sides of the said yoke, so as to swing outward therefrom, and the upper extremities of these arms are bifurcated, as shown at 6. Pivoted in the bifurcations 6 are dogs or keepers 7, the upper or outer edges of which present straight oblique faces, as shown at 8, and the inner or under edges of which provide the curved edges 9, adapted to meet over the trolley-wire, and the notches 10 at the lower ends of said curved portions, while below said notches the dogs are shaped to provide recesses 11, adapted to engage the arms 5 in the normal position of the parts, and thereby prevent the lower ends of the dogs dropping so far as to throw the upper ends of the dogs outward from their position over the trolley-wire. The lower ends of the dogs are widened laterally, as shown at 12, to provide greater

weight and cause them to normally assume the position shown in full lines in Fig. 3. Attached to the upper inner ends of the dogs are the ends of the trolley-cable 13, which pass downward through openings in the arms 5 and then through keepers on the yoke, being united below the said yoke and then passed downward to the car in the usual manner. A casing 14 is secured on the trolley-pole near the upper end of the same, and the said casing is provided with open ends and with pins or rollers 15, extending diametrically across said ends. Extending through the casing are bars 16, which are pivoted together at an intermediate point of their length within the casing and have their upper portions bent laterally, so as to clear the trolley-wheel, the extremities of the bars being secured to the arms 5 by universal joints 17. Both ends of both bars project beyond the ends of the casing and pass on opposite sides of the pins or rollers 15. Within the casing are coiled springs 18, which are secured to the pivot at the point of intersection of the bars and have their free ends bearing against the ends of the casing, as clearly shown in Fig. 1.

The operation of the device will be readily understood. The normal position of the parts is shown in Figs. 1 and 2 and in full lines in Fig. 3. Should a cross-wire or other obstruction be met by the trolley in its travel along the line-wire, the front or back of the dogs or the arms 5 will impinge against the obstruction, and the yoke 4 will be thereby swung around the spindle of the trolley-wheel, the direction of the swing being dependent on whether the car is moving forward or backward. As the yoke swings the arms 5, moving therewith, will pull or push on the bars 16, moving them against the tension of the spring 18 through the casing. As the bars are thus moved through and out of the casing they will slide against the pins 15 and be thereby spread, so as to move the arms 5 outward and carry the dogs 7 outward from over the trolley-wire. The trolley will consequently be permitted to ride under the obstruction, and as soon as the obstruction has been passed the spring 18 will expand, so as to draw the bars 16 again within the casing and return the parts to their initial positions. The spring at the base of the trolley-pole will force the same upward as soon as the obstruction is passed, so that the trolley-wheel

will reach the wire before the dogs are again brought together. Until the dogs are again brought together they will act as a finder or guide to prevent the wheel escaping from the plane of the wire, as will be understood on reference to the lower dotted lines in Fig. 3. When the end of the line has been reached and it is desired to reverse the trolley, the cable is drawn downward in the usual manner of releasing the trolley. This action will cause the dogs to swing into the position shown in the upper dotted lines in Fig. 3, when their straight edges will form a large finder to guide the wheel to the wire. When the contact of the wheel and the wire is made, the cable is released and the weighted ends of the dogs will at once fall, so as to bring the dogs into the position shown in full lines in Fig. 3, in which position it is clear they will act as a keeper to prevent the trolley-wheel jumping the wire.

The apparatus is obviously simple and efficient. The spring 18 is sufficiently strong to hold the bars 16 normally within the casing, and consequently maintain the dogs over the wire to prevent the wheel slipping from the wire, while at the same time obstructions may be readily passed. When the car is traveling forward, the meeting of an obstruction will compress the upper spring 18, while if the car is traveling backward the lower spring 18 will be compressed when an obstruction is met. The operation of the device as a keeper is entirely automatic, and its use as a finder is certain.

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

1. In a trolley, the combination with the trolley-spindle, of a yoke pivotally hung thereon, laterally-swinging arms carried by the said yoke, dogs mounted on said arms and adapted to meet over the trolley-wire, and automatic means for swinging said arms as the yoke is vibrated.

2. In a trolley, the combination with the trolley-spindle, of a yoke pivotally hung

thereon, laterally-movable arms carried by the yoke, dogs mounted on the arms, and automatic means for holding said arms normally over the yoke and causing them to move laterally when the yoke is vibrated.

3. In a trolley, the combination with the trolley-spindle, of a yoke pivotally hung thereon, outwardly-swinging arms hinged to the upper ends of the yoke, dogs pivoted in the upper ends of said arms and adapted to meet over the trolley-wire, and automatic means for moving the arms laterally when the yoke is vibrated.

4. The combination with the trolley-spindle, of a yoke pivotally hung thereon, laterally-swinging arms on the yoke, dogs pivoted on said arms and adapted to meet over the trolley-wire and having their lower ends weighted and provided with shoulders to bear against the outer sides of said arms, and means for moving the arms laterally as the yoke is vibrated.

5. In a trolley, the combination with the trolley-spindle of a yoke pivotally hung thereon, arms hinged to the upper ends of the yoke, dogs mounted in the upper ends of said arms, intersecting bars connected to said arms, and means for holding said bars normally together.

6. In a trolley, the combination with the trolley-spindle of a yoke pivotally hung thereon, arms hinged to the upper ends of the yoke, dogs carried by said arms, intersecting bars pivoted together and carried by the trolley-pole and having their upper ends connected to the said arms, a fixed part between the intersecting bars, and a spring around said bars between said fixed part and their pivot.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

RICHARD W. WALKER.

Witnesses:

JOHN V. ABRAHAMS,
LILLIAN R. NATTSSEN.