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PATENTED MAR. 15, 1904.

E. A. ROOT & C. M. WALLACE.

SELF ADJUSTING WHEEL.

APPLICATION FILED MAY 23, 1903.

NO MODEL.

Fig. 1.

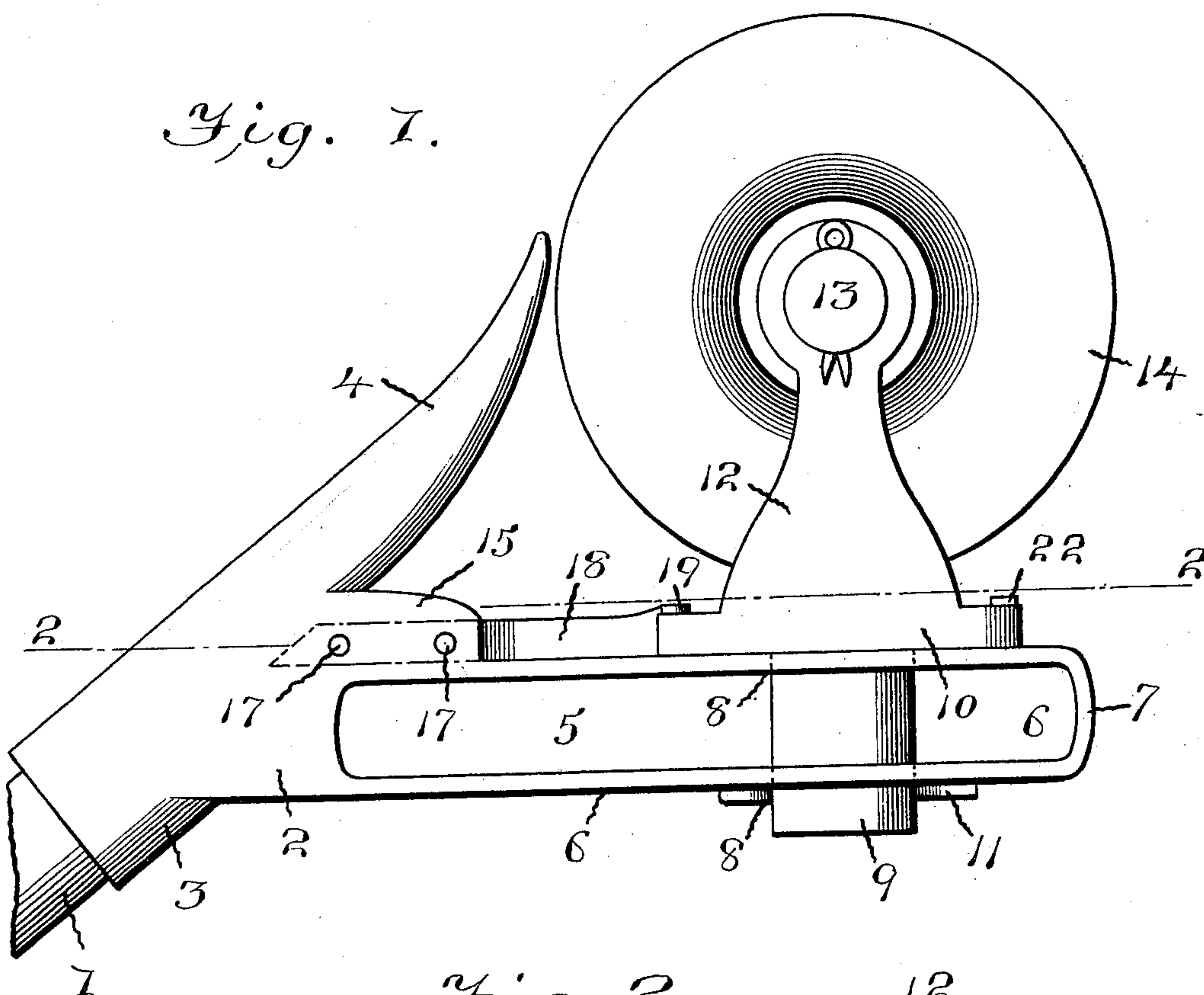
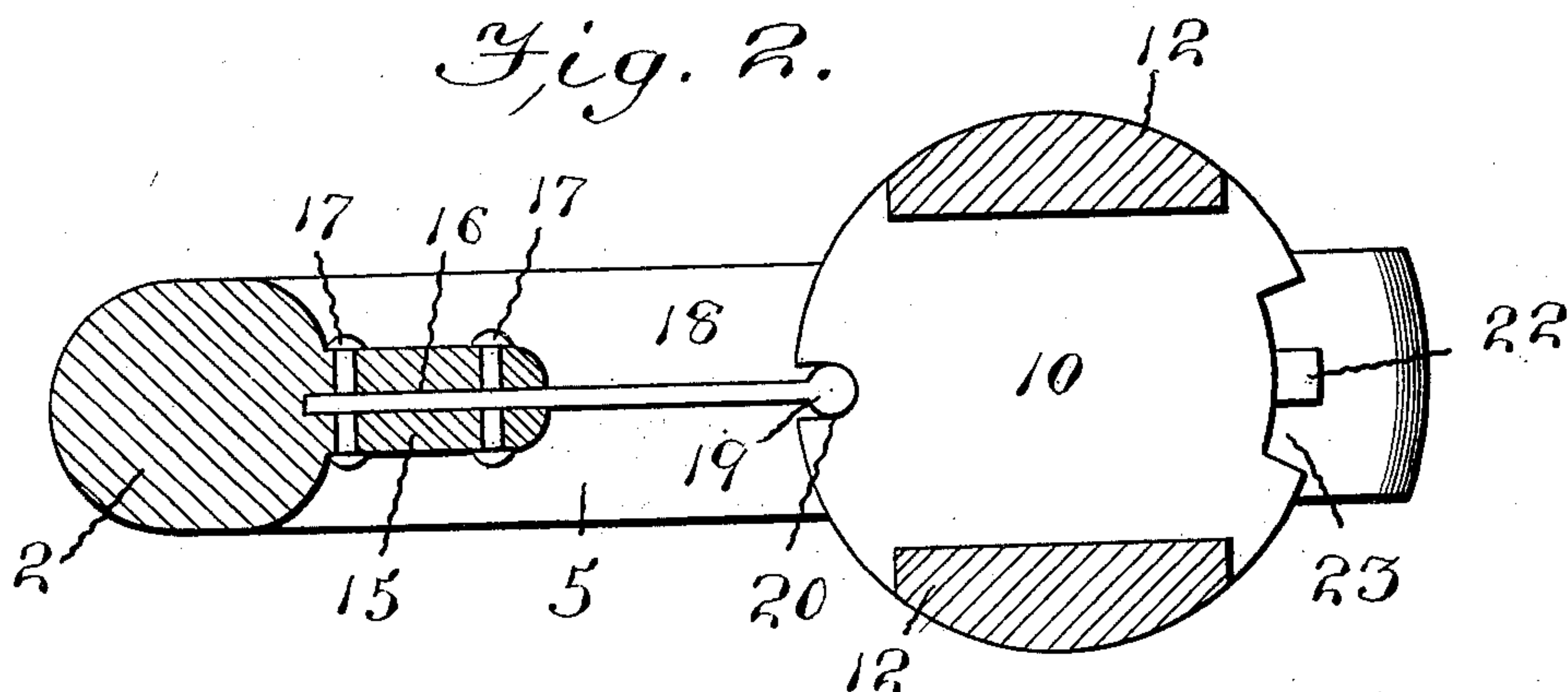


Fig. 2.



WITNESSES:

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EDGAR A. ROOT AND CHARLES M. WALLACE, OF HUNTINGTON, WEST VIRGINIA.

SELF-ADJUSTING WHEEL.

SPECIFICATION forming part of Letters Patent No. 754,894, dated March 15, 1904.

Application filed May 23, 1903. Serial No. 158,516. (No model.)

To all whom it may concern:

Be it known that we, EDGAR A. ROOT and CHARLES M. WALLACE, citizens of the United States, residing at Huntington, in the county of Cabell and State of West Virginia, have invented new and useful Improvements in Self-Adjusting Wheels, of which the following is a specification.

Our invention has relation to new and useful improvements in trolleys for overhead electric railways; and the object of the invention is to provide a trolley of the character mentioned which is so constructed as to follow the wire under all conditions and which will not be thrown out of contact therewith when passing around curves.

The invention consists in providing the usual form of pole with a head upon which is a rotatably-mounted harp in which the wheel is journaled and in providing means for normally holding the wheel in the same vertical plane as the pole and a means for limiting the rotary movement of the harp.

We attain the objects above stated by the structure and arrangement of the elements, to be more fully described hereinafter and the novelty of which will be particularly pointed out and distinctly claimed.

The invention is fully and clearly illustrated in the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a view in side elevation of the complete invention, and Fig. 2 is a horizontal section taken on the line 2 2 of Fig. 1.

Referring to the drawings, 1 designates a trolley-pole which may be of any of the well-known forms. 2 designates the pole-head, upon which is mounted the trolley harp and wheel and the other elements embodying our invention. This head 2 consists of a socket-piece 3, in which is seated and suitably secured the upper end of the pole 1, as shown in Fig. 1. Extending from the upper portion of the socket-piece is a projection or finger 4, constituting a shield a protector for the harp and trolley-wheel to prevent the same from being displaced or rendered incapable of operation by coming into contact with cross or guy wires during the progress of the

car. It will be seen that any wire against which the shield may strike will be guided over the top of the wheel without injury to the wheel. Extending laterally from the socket-piece 2 is a projection or arm 5, upon which is operatively arranged the harp and wheel and the devices for regulating their movements. This projection or arm consists of a substantially rectangular frame comprising upper and lower longitudinal members 6 6, projecting from the socket-piece and connected at their outer end by an end piece 7, substantially as shown in Fig. 1 of the drawings. The side or longitudinal members just mentioned are provided with alining openings 8 8, in which is journaled a spindle or stud 9, formed upon the base-plate 10 of the trolley-harp. The spindle is secured in position in its bearings by means of a pin 11, inserted through the lower terminal of the spindle below the projection or arm 5. 10 designates the base-plate of the trolley-harp, said plate being preferably, although not necessarily, circular and arranged to lie flat and bear upon the upper face of the arm 5. Rising from the base-plate at diametrically opposite points are vertical arms 12 12, the upper terminals of which form bearings for the axle 13 of the trolley-wheel 14, which wheel is of the usual well-known grooved form.

Upon the upper face of the arm 5 and at a point adjacent the base of the shield 4 the head has formed integrally therewith a projection 15, in which is formed an elongated recess 16, which extends in a line longitudinally of the arm 5, as shown in Fig. 2. Seated within the recess 16 and secured therein by rivets 17 or other suitable means is one end of a flat spring 18, which, as shown, is set upon its edge and is adapted to move in a plane transverse to the arm 5. At its free end this spring is formed with an enlarged portion or head 19, which is circular in cross-section and is seated in a circular recess 20, formed in the periphery of the base-plate 9 of the trolley-harp.

From the above description, taken in connection with the drawings, it will be seen that during the progress of the car the trolley-

wheel by virtue of the rotatability of its harp will adjust itself at various angles to suit the curves of the line-wire and will at all times remain in contact with the wire when the car is rounding curves or being switched from one track to another. It will also be seen that the force of the spring 18 will be to hold the harp and wheel normally in the same vertical plane as the pole and that by virtue of this spring the harp and wheel will be returned to their normal position as soon as the car passed from a curved to a straight track. In order that the harp may not be rotated such a distance as to throw the wheel across the wire, and consequently prevent its operative engagement therewith, and also to prevent the displacement of the spring from its seat in the base-plate of the harp, we provide upon the top of the arm 5 a vertically-projecting lug 22, which extends upwardly into a slot 23, formed in the periphery of the base-plate, the lug being arranged to abut against the ends of the slot to limit the movement of the harp.

The spring 18 above described is provided with a rounded head and the base-plate with a circular recess in order that there may be a turning movement of the plate on the end of the spring which will provide for an easy and free relative movement of the spring and plate without danger of breaking the spring, which would be liable were the plate and spring rigidly fastened together. By constructing the arm 5 of upper and lower side members it will be seen that the amount of

friction upon the spindle 9 will be considerably less than if said arm were a solid member contacting the spindle at all points and that the free movement of the harp will be greatly facilitated.

Having thus fully described the invention, what is claimed as new is—

In a trolley-head the combination with the pole of an arm and a finger thereon, said arm comprising upper and lower members formed with alining apertures, the upper member being provided with a lug, a projection arranged at the junction of the arm and the finger and having a longitudinal recess therein, a flat spring set upon edge and having one end rigidly secured within said longitudinal recess and formed at its other end with a rounded head, a spindle extending through the apertures in the upper and lower members of the arm, a harp carried by the spindle, said harp comprising a base-plate integral with the spindle, vertical arms integral with the plate, a wheel journaled in the arms, said plate being formed with a semicircular recess to receive the rounded head on the spring, and a peripheral slot into which the lug on the upper member of the arm projects.

In testimony whereof we affix our signatures in presence of two witnesses.

EDGAR A. ROOT.

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Witnesses:

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