

No. 793,965.

PATENTED JULY 4, 1905.

W. F. THOMPSON.
TROLLEY.

APPLICATION FILED DEC. 28, 1904.

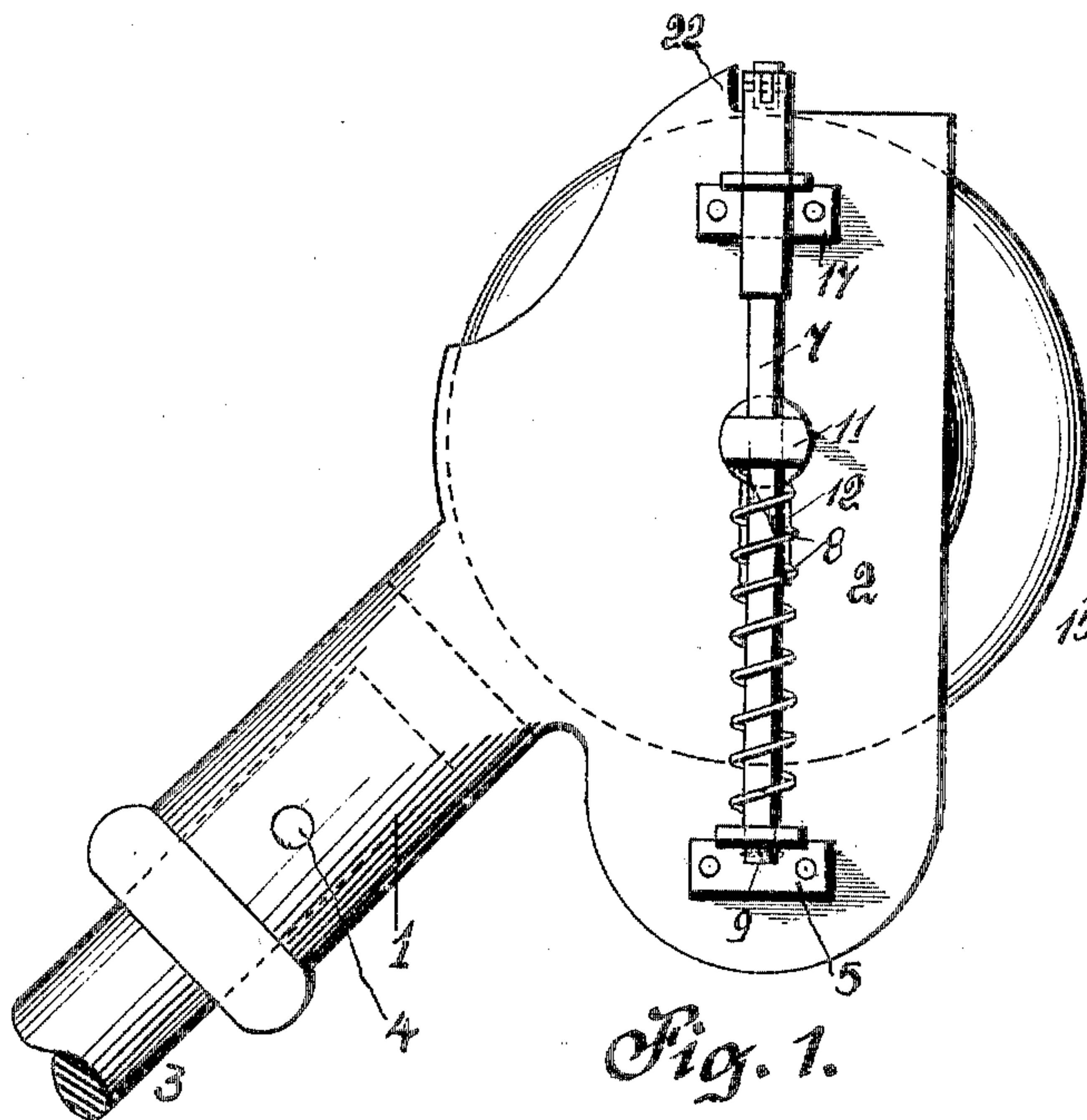


Fig. 1.

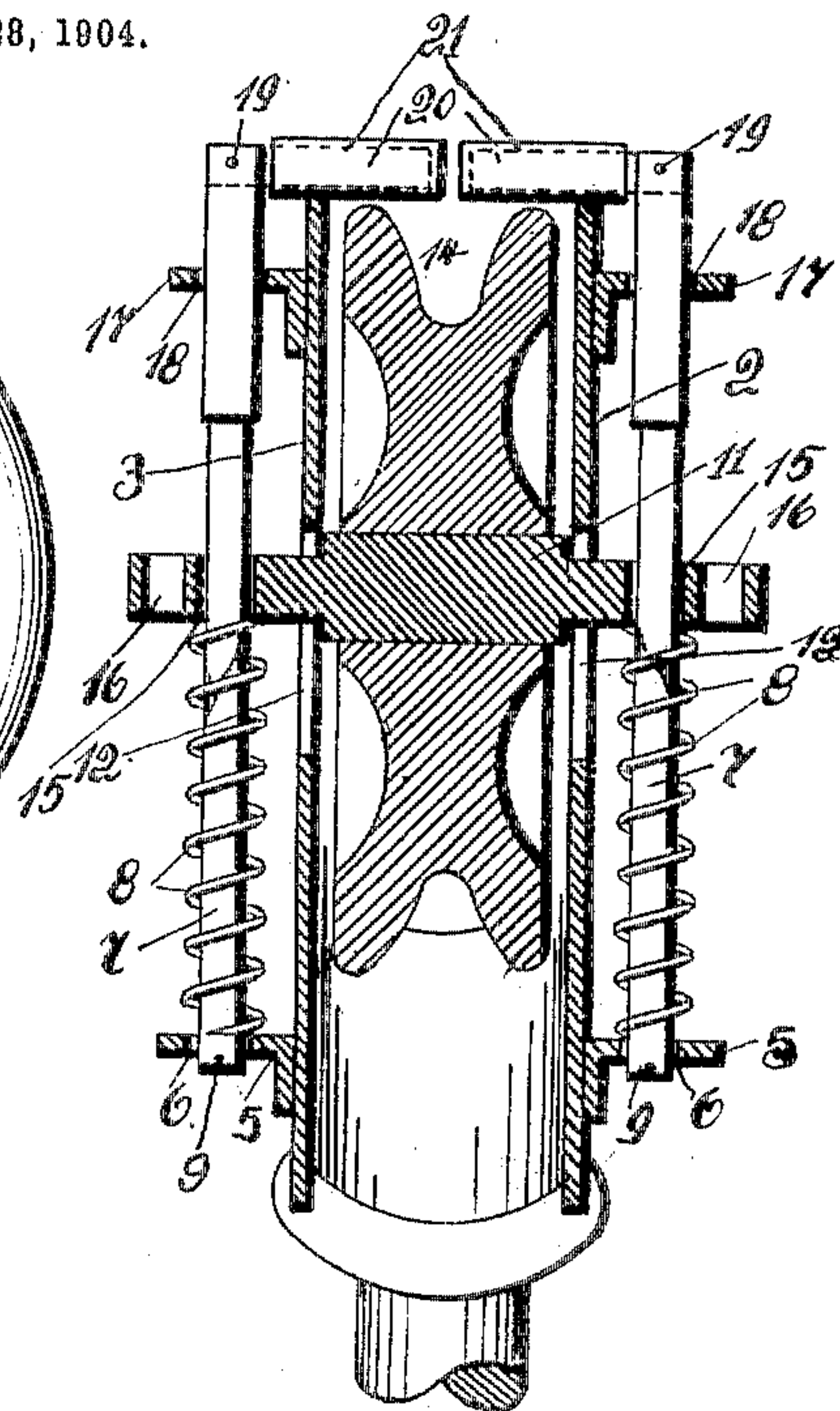


Fig. 2.

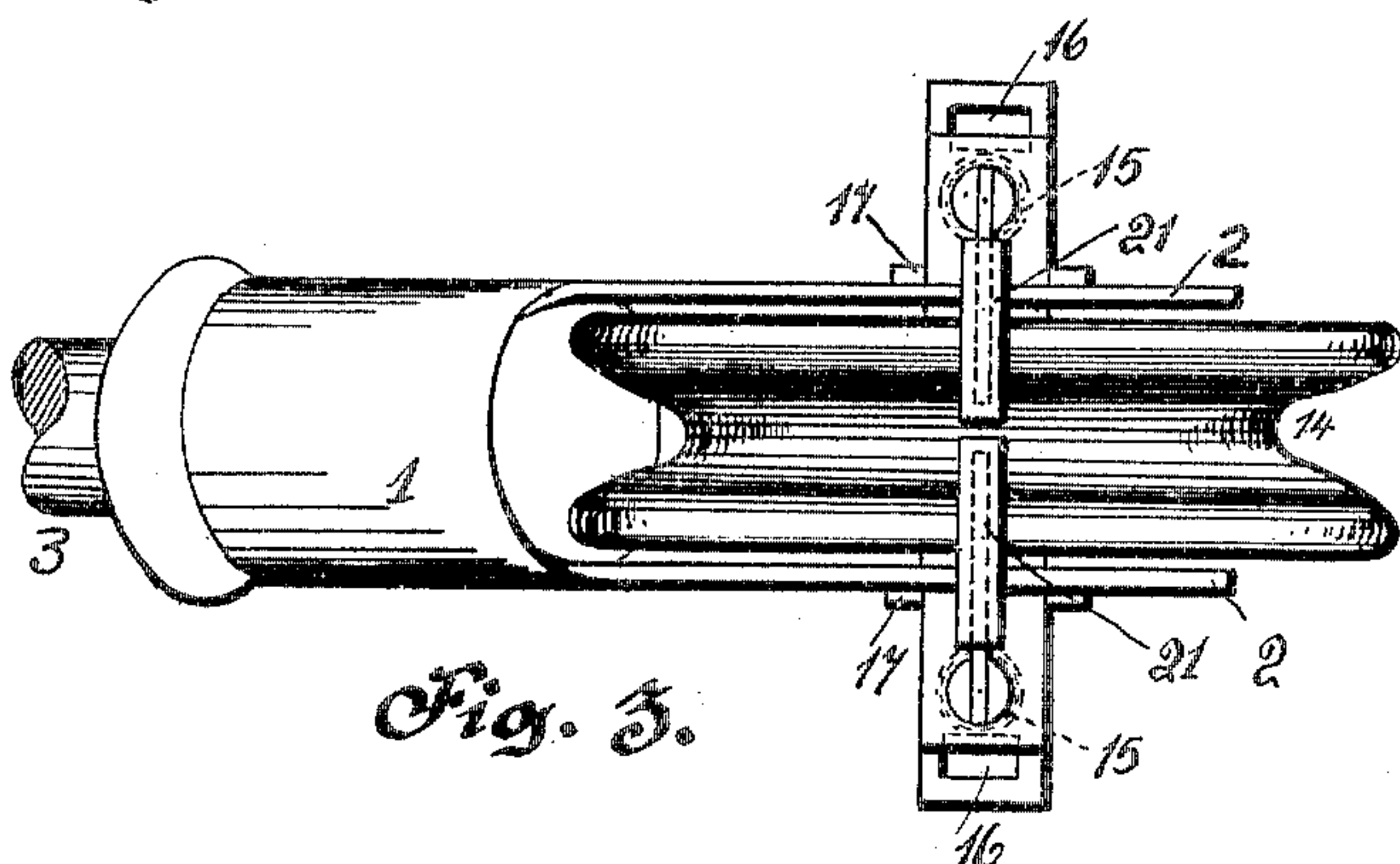


Fig. 3.

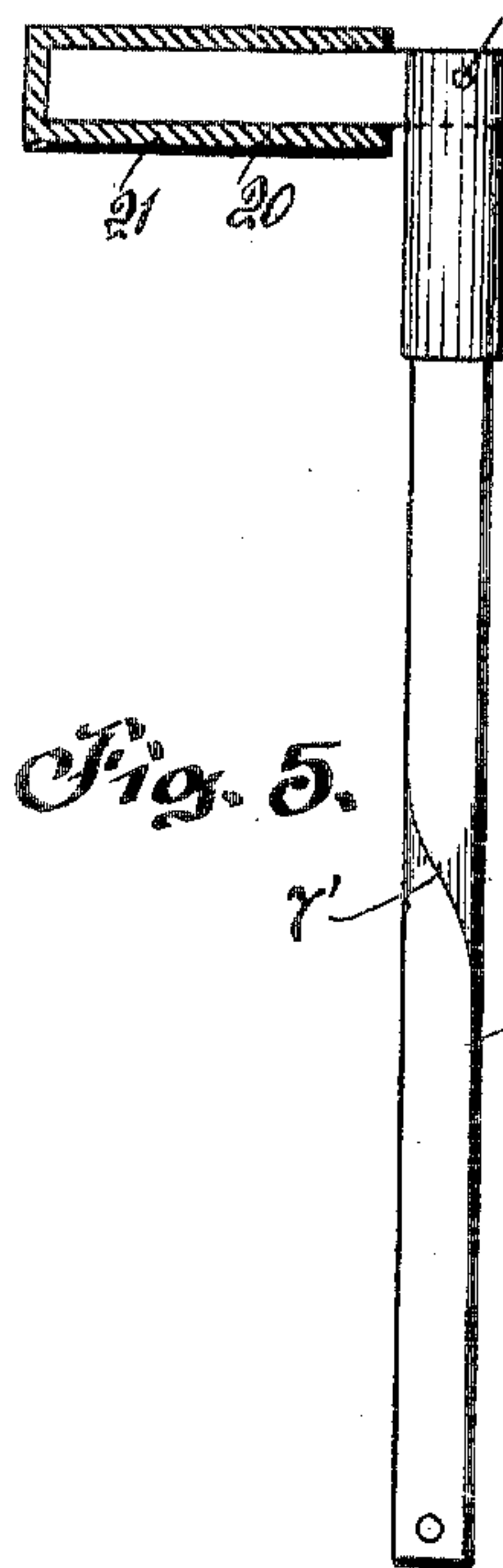


Fig. 5.

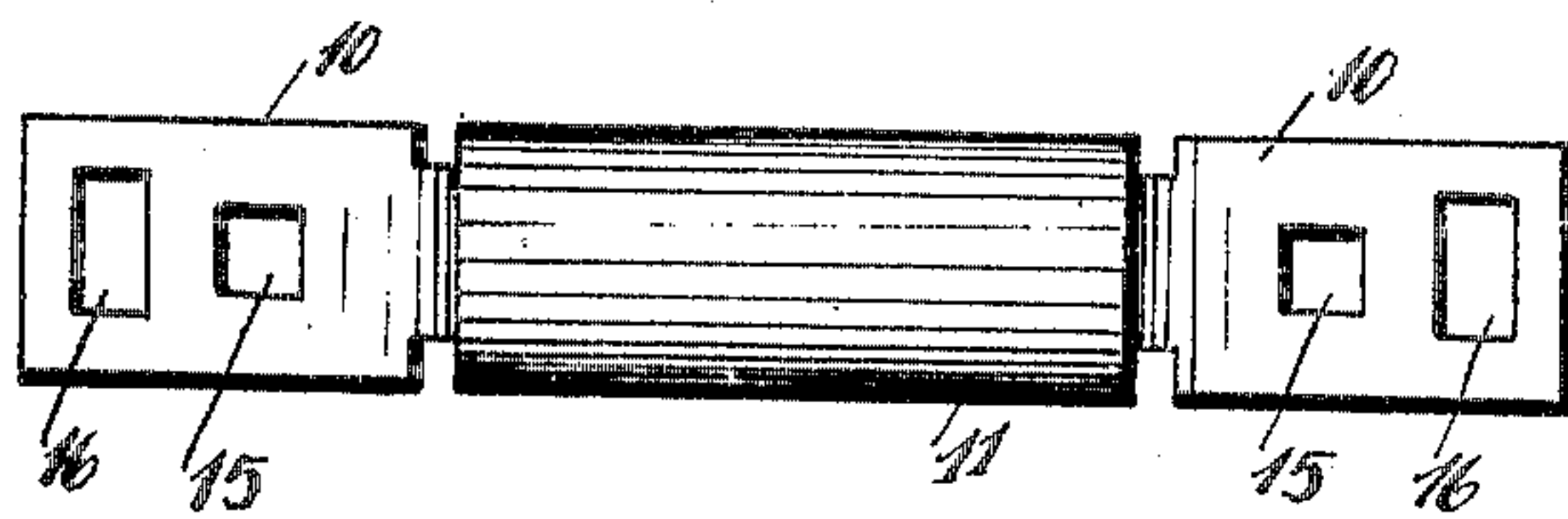


Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM FREMAN THOMPSON, OF CORAOPOLIS, PENNSYLVANIA.

TROLLEY.

SPECIFICATION forming part of Letters Patent No. 793,965, dated July 4, 1905.

Application filed December 28, 1904. Serial No. 238,641.

To all whom it may concern:

Be it known that I, WILLIAM FREMAN THOMPSON, a citizen of the United States of America, residing at Coraopolis, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Trolleys, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in trolleys, and more particularly to a novel form of harp and mechanism for retaining a trolley-wire in engagement with a trolley-wheel carried by said harp.

The primary object of this invention is to provide a novel form of harp in which a trolley-wheel is adjustably mounted and novel means in connection with said harp for normally holding said trolley-wheel in engagement with a trolley-wire over which the same travels.

A further object of this invention is to provide a novel form of mechanism carried by a trolley-harp for preventing the trolley-wire from becoming disengaged from a trolley-wheel journaled in said harp.

A still further object of this invention is to provide a novel form of harp in which a trolley-wheel can be adjustably journaled that can be readily used in connection with trolley-poles now in use, and I have constructed my improved trolley device whereby the same can be manufactured at a comparatively small cost and of such construction that the same will withstand the rough usage to which devices of this character are generally subjected.

The invention finally consists in the novel construction, combination, and arrangement of parts, which will be hereinafter more fully described and then specifically pointed out in the claims, and, referring to the drawings accompanying this application, like numerals of reference designate corresponding parts throughout the several views, in which—

Figure 1 is a side elevation of my improved trolley. Fig. 2 is a vertical sectional view of the same, partly in perspective. Fig. 3 is a top plan view of my improved trolley. Fig. 4 is a detail view of a spindle constructed in accordance with my invention, and Fig. 5 is

a detail view of an arm-supporting rod used in connection with my improved trolley.

To put my invention into practice, I have constructed a harp which comprises a sleeve 1, having integral side plates 2 2. The sleeve 1 is secured upon the end of a trolley-pole 3 by any desired means, preferably by a pin 4. The lower sides of the plates 2 2 are provided with outwardly-extending brackets 5 5, which are provided with apertures 6 6. In these apertures are mounted rods 7 7, which are retained therein by spiral springs 8 8, that surround the lower ends of said rods and rest upon said brackets. The lower ends of the spiral springs are secured to the ends of the rods 7, as indicated at 9, and the upper ends of said springs bear against the under faces of the substantially rectangular ends 10 10 of a spindle 11.

The side plates 2 2 of the harp are provided with slots 12 12, through which the spindle 11 extends, and upon this spindle is journaled the ordinary type of trolley-wheel 14. The outer ends of the spindle are provided with substantially rectangular apertures 15 15, through which the upper ends of the rods 7 pass. The upper ends of the rods are formed substantially rectangular in cross-section, whereby they may pass through the apertures 15 15, and the rods at a point just below the spindle are twisted a quarter of a turn, so that the corners of the rods will be spirally disposed, (as illustrated in the drawings and indicated at 7',) and this formation of the rods will cause them when the spindle is depressed as hereinafter described to make a quarter-turn. The ends 10 of the spindle 11 are also provided with apertures 16 16, in which the ends of a suitable trolley-rope (not shown) may be secured. The side plates 2 2 near their upper edges are provided with brackets 17 17, having openings 18 18 formed therein, and through said openings pass the upper ends of the rods 7. These rods are made of a sufficient length whereby they will extend above the side plates 2 2, and in the upper ends of the rods 7 I secure by pins 19 inwardly-extending spring-arms 20. The inner ends of these arms are adapted to lie in close proximity to one another directly above the trolley-wheel 14.

ley-wheel, and the end of each arm is provided with a sleeve or tip 21, preferably constructed of rubber or the like resilient material. The upper edges of the side plates 2 2 are provided with shoulders 22, the object of which will be presently described.

The operation of my improved trolley device and the manner in which the same is manipulated is as follows: It is a well-known fact that as cars or vehicles exceed a prescribed rate of speed the rapidity of the car or vehicle causes the trolley-wheel to become displaced from the trolley-wire upon which it is traveling, and for this reason I have provided my improved device, which will retain the trolley-wire in close proximity to the trolley-wheel and should the same become displaced therefrom will return the wire to its normal position. On account of the elevation of the trolley-wire in respect to the road-bed over which it is mounted varying I have provided an adjustable and vertical reciprocating trolley-wheel. The spiral springs 8, surrounding the rods, normally hold the trolley-wheel 14 in engagement with the wire; but should an irregularity be encountered upon the wire or a lower elevation of the wire be encountered, such as passing under a bridge, the trolley-wheel will be permitted to recede from its normal position, but will at all times be held in engagement with the trolley-wire by the springs 8 8. I have provided the spring-arms 20 20, whereby should the trolley-wheel have a tendency to jump off the trolley-wire the arms will retain the wire thereon, and I have provided the spring-arms with tips whereby the hangers which generally support the trolley-wire will be protected when passing through said arms. Should it be desired to remove the trolley-wheel from the trolley-wire, the trolley-rope, (not shown,) which is connected to the outer ends of the spindle upon which the trolley-wheel is journaled, is pulled downwardly, which will compress the springs 8, and the downward movement of the spindle will by reason of the spiral form of the rods 7 cause the rods 7 to rotate and move the arms 20 outwardly to permit the trolley-wire to pass between said arms. The shoulders 22 22, formed on the upper edges

of the side plates 2, will prevent the arms 20 from being moved in a reverse direction to that in which the car or vehicle carrying the trolley is running.

It will be noted that various changes may be made in the details of construction without departing from the general spirit and scope of the invention.

What I claim, and desire to secure by Letters Patent, is—

1. The combination with a trolley-pole, and a trolley-wheel, of a harp, spring-arms carried by said harp and adapted to overlie said trolley-wheel, means for partially rotating said arms, means for vertically reciprocating said trolley-wheel within said harp, substantially as described.

2. The combination with a trolley-pole, of a harp, an adjustable spindle mounted in said harp, a wheel journaled upon said spindle, arms carried by said harp and adapted to overlie said wheel, means to partially rotate said arms, and means to adjust said wheel, substantially as described.

3. The combination with a trolley-pole, of a harp, a spindle mounted in said harp, a wheel journaled upon said spindle, means carried by said harp to automatically adjust said trolley-wheel, arms carried by said harp and adapted to overlie said trolley-wheel, and means to move said arms out of vertical alinement with said trolley-wheel, substantially as described.

4. The combination with a trolley-pole, and a trolley-wire, of a harp, a spindle adjustably mounted in said harp, a wheel journaled upon said spindle and adapted to engage said trolley-wire, arms overlying said trolley-wire, means to move said arms out of alinement with said trolley-wire, means to return said arms to their normal position, and means to normally hold said trolley-wheel in engagement with said trolley-wire, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM FREMAN THOMPSON.

Witnesses:

JAMES S. OBERREDER,
WESS H. CHARLTON.