

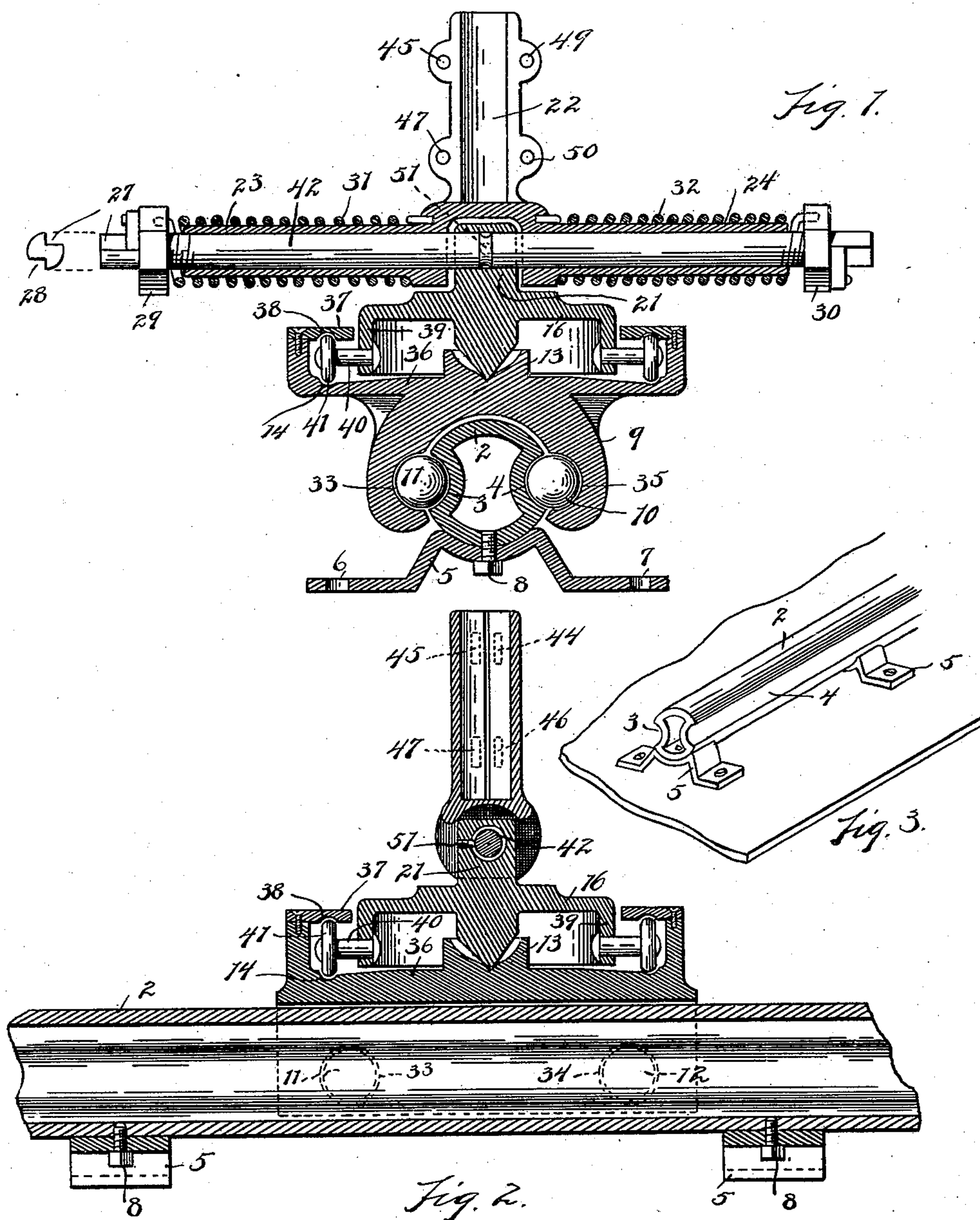
No. 692,790.

Patented Feb. 4, 1902.

O. F. LIDKE.  
TROLLEY STAND.

(Application filed Aug. 14, 1901.)

(No Model.)



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## TROLLEY-STAND.

SPECIFICATION forming part of Letters Patent No. 692,790, dated February 4, 1902.

Application filed August 14, 1901. Serial No. 72,002. (No model.)

*To all whom it may concern:*

Be it known that I, OTTO F. LIDKE, a citizen of the United States, residing at Ypsilanti, county of Washtenaw, State of Michigan, have invented a certain new and useful Improvement in Trolley-Stands; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to trolley-supports, and has for its object an improved support arranged to be movable along the top of the car, from one end thereof to the other, or from one end of the track on which it rides to the other end of the track, and by means of which the trolley-pole is carried under spring tension when in any position except a perfectly vertical position above the pivot on which it rests.

In the drawings, Figure 1 is a vertical cross-section of the support and the rail on which it runs. Fig. 2 is a vertical longitudinal section of the support and the rail on which it runs. Fig. 3 is a perspective showing the attachment of the support to the top of the car.

2 indicates a track-rail, preferably made tubular, with a groove at each side of the tube and arranged on the top of the car and running from the front to the rear of the car. The grooves 3 and 4 are deep, and in cross-section their contour is nearly semicircular. The track-piece 2 is held at intervals by a chair, like the chair 5, and the chair is secured by bolts through bolt-holes 6 and 7 to the top of the car. The rail is secured to the chair by bolts or screws 8.

A carriage is arranged to run on the rail 2, and this carriage consists of a saddle-like body 9, having sockets 33 34 35 for the reception of balls 10, 11, and 12. The sockets 33 34 35 are substantially hemispherical. A ball is dropped into each of the sockets, and the carriage-body 9 is run on the rail 2, and the ball engages in the grooves 3 or 4 in the rail, and these not only hold the carriage to the rail, but furnish a friction-bearing that enables the carriage to run easily along the rail. At the top of the saddle part 9 of the carriage

is a table surrounded by a vertical flange, and around the table 36, near the flange thereof, is a circular groove 14. The table itself is circular in outline. Above the table, bolted or otherwise secured thereto, is a guard 37, which is also provided with a circular groove 38 on its under side, and the circular groove 14 and the circular groove 38 are arranged to engage the upper and lower points of running wheels that are hung on horizontal bearings. Central to the groove 14 is a hollow conical pivot-bearing 13, and in this pivot-bearing rests a needle-pointed projecting hanger from a table 16. The table 16 is circular and has a flange 39 running around it, and from the flange are axles 40, projecting outward, and on the outer end of each of these axles is mounted a friction-wheel 41. The friction-wheel 41 is arranged to travel in a circular path, and the wheel bears sometimes in the groove 14 and sometimes in the groove 38. Normally, it is arranged to be nearly in contact with both grooves, although not necessarily in contact with either.

On the top side of the table 39 and central thereto is a stud 21, through which is a horizontal hole, and through the hole is passed a rod 42, screw-threaded at each end. At its middle point this rod 42 is provided with a circumferential groove, into which projects the end of a holding-screw 51. A pole-socket 22 is secured to the stud by passing a rod 42 through tubular arms 23 and 24 and through the hole in the stud. Springs 31 and 32 surround the arms 23 and 24, and each spring is made fast at one end to the socket-casting and at the other end to a nut, and the nuts are run onto the threaded ends of the rod 42.

The spring 31 is wound to be put in tension when the socket and the pole therein swing in one direction—for example, with a right-hand swing—and the spring 32 is wound to be put in tension when the socket and the pole therein are swung in the other direction. The tension is regulated by the nuts 29 30.

The screw-threaded end of the rod 42 is provided with notches 27 28, in which engages a pawl that is pivoted to the nut 29, and a similar construction is employed with the nut 30 and the end of the rod on which it engages.



The socket 22 is made in halves, secured together by bolts, which pass through the ears 44 45 46 47 49 50.

5 The trolley-support of this structure can be shifted from end to end of the car and has a considerable range to swing longitudinally of the car; but its swing longitudinally of the car is resisted in either direction by a spring, which tends to bring it to a perpendicular, and consequently tends to hold it strongly up against the wire under which it runs.

What I claim is—

1; 1. In combination with a rail adapted to be secured to the top of a car, a carriage movable along said rail, a trolley-arm, means intermediate said arm and said carriage arranged to allow the trolley-arm a universal swinging movement, substantially as described.

20 2. In combination with a track and a carriage shiftable thereon, means for holding the carriage to the track, a trolley-pole socket arranged to swing freely in the direction of the track with a limited movement across the track and to rotate on a central needle-point bearing, substantially as described.

3. In a trolley-support, a trolley-socket provided with a needle-pointed bearing, means whereby the bearing is capable of rotation 30 on the point of said bearing, and means whereby the trolley-pole socket is arranged to swing with respect to the needle-point bearing, substantially as described.

4. The combination of a track provided with 35 running-grooves a carriage provided with sockets, and balls arranged to hold the carriage to the track and to furnish bearings on which the carriage runs, substantially as described.

40 5. The combination of a trolley-arm provided with cross-arms and supported on a needle-point bearing a pair of springs arranged to lift the arm when the arm is in either position, and means for adjusting the 45 tension of the springs, substantially as described.

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

OTTO F. LIDKE.

Witnesses:

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