(No Model.)

J. W. NEWHOUSE.

TROLLEY FOR ELECTRIC RAILWAYS.

No. 475,467. Patented May 24, 1892.

FIG. 1.

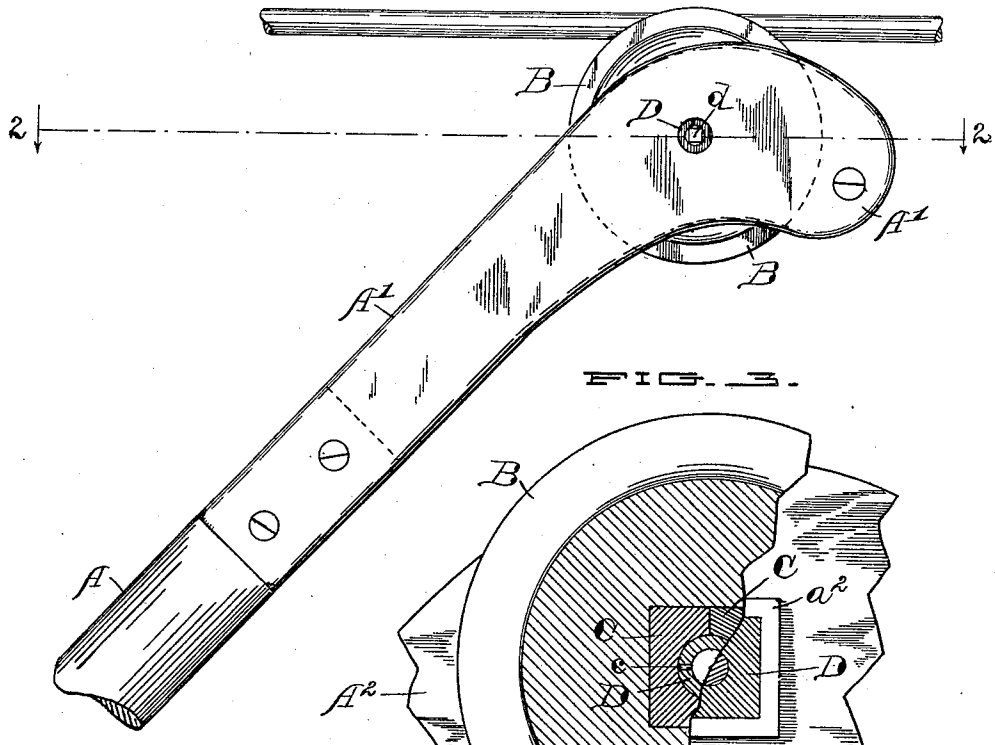
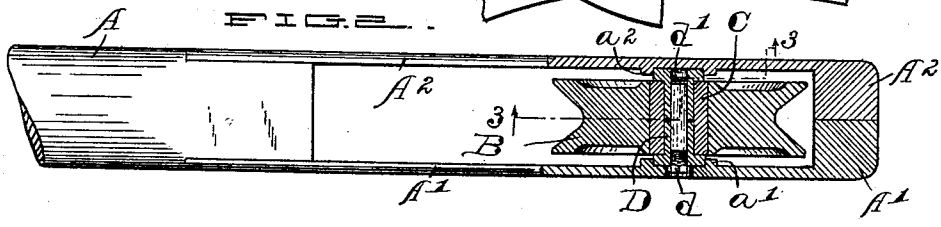


FIG. 3.

FIG. 2.



WITNESSES.

F. H. Hamor.

J. A. Walsh.

INVENTOR.

John W. Newhouse,

per Edw. W. Bradford,

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN W. NEWHOUSE, OF INDIANAPOLIS, INDIANA.

TROLLEY FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 475,467, dated May 24, 1892.

Application filed November 14, 1891. Serial No. 411,854. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. NEWHOUSE, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Trolleys for Electric Railways, of which the following is a specification.

My said invention relates to the construction of the upper portion of trolleys for electric railways; and it consists in certain details of construction whereby simplicity, durability, security, and ease of operation are secured, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar letters of reference indicate similar parts, Figure 1 is a side elevation of the upper end of a trolley-arm, including the trolley-wheel embodying my said invention; Fig. 2, a horizontal sectional view looking downwardly from the dotted line 2 2 in Fig. 1; and Fig. 3, a detail sectional view, on an enlarged scale, looking upwardly from the dotted line 3 3 in Fig. 2.

In said drawings, the portions marked A represent a fragment of a trolley-arm; B, the trolley-wheel; C, boxings in said wheel, and D the shaft or axle thereto.

The lower portion or trolley-arm A, of which only a fragment is shown, is or may be of the ordinary form or construction. To it are secured two side pieces A′ A^2, which form a housing for the wheel. The outer ends of these side pieces may be thickened sufficiently at this point to meet and fill the intervening space or a separate block may be used, as desired. On the inner surfaces of these side pieces, facing each other, are formed or attached flanges a' a^2, which surround recesses which receive and hold the ends of the shaft or axle of the wheel. Through one of them, central to the flange thereon, is formed a hole through which to insert a wrench or screw-driver to operate a screw-plug, for purposes which will be presently described. The outer edges of these side pieces are rounded off somewhat, and at the lower end they are formed to develop into the shape of the arm, while the bolts which hold them to the arm and those which hold the outer ends of the two together are countersunk, and thus the entire outer surface is left smooth and free from projections, thereby rendering it impossible for the trolley to catch on the conductor-wire and tear it from its fastenings, which not infrequently happens with trolleys of a common construction.

The trolley-wheel B is in itself generally formed of the ordinary and well-known construction. It has a central transverse perforation, which is preferably square, to receive the boxings C. Said boxings C are of a common form similar to car-axle boxings and fit within the opening in the center of the wheel.

The shaft or axle D is placed between the two halves of the boxing before the latter is inserted into the opening in the wheel. It has squared ends which fit into the cavities formed by the flanges a' a^2, and is thus supported firmly between the side pieces A′ A^2 and thus supports the trolley-wheel in place. This shaft or axle has a longitudinal perforation which forms a cavity for a lubricant. The ends of this perforation are closed, preferably, by screw-plugs d d', as shown, one of which is intended to be removable for the insertion of a new supply at pleasure. I have shown one of these screw-plugs as fitted to be driven to place by a screw-driver and as flush with or sunk below the surface of the end of the shaft. The other I have shown as squared and projecting somewhat above said surface, ready to be operated by a socket-wrench. The hole previously mentioned through the side piece A′ is for the purpose of reaching this screw-plug by means of the socket-wrench, screw-driver, or otherwise. Centrally radial perforations c are formed extending from the cavity within this shaft to its surface, so that the lubricant may reach and lubricate the surfaces which come together in the operation of the wheel.

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

1. The combination, in a trolley for electric railways, of two side pieces having recesses on the surfaces which face each other, adapted to receive and hold the ends of the shaft of the wheel, said wheel, and said shaft, substantially as shown and described.

2. The combination, in a trolley for electric railways, of a housing the sides whereof ap-

proach close to the sides of the trolley-wheel, thus excluding the wire, and provided with internal flanges a^2, which form supports for the trolley-wheel shaft, said shaft mounted therein and the trolley-wheel mounted on said shaft, said shaft being thus completely inclosed and protected from external contact, substantially as shown and described.

3. The combination, in a trolley for electric railways, of a trolley-wheel, boxes fitted therein, a hollow shaft within said boxings, the end of the perforation being closed by a screw-plug, thus forming a cavity for the lubricant, and a perforation through the housing over the end of the shaft where the screw-plug is located, whereby access is had to the screw-plug from the outside and whereby said screw-plug is also inclosed and protected, substantially as set forth.

4. The combination, in a trolley for electric railways, of two side pieces secured to the upper end of the trolley-arm and provided with recesses in the surfaces which face each other for receiving a trolley-wheel shaft, said trolley-wheel shaft, the trolley-wheel having boxings therein which fit on said shaft, said side pieces being secured together by countersunk bolts or rivets, the whole external surface being thereby rendered smooth and free from projections with the working parts all inclosed, substantially as shown and described, and for the purpose as specified.

5. The combination, in a trolley for electric railways, of a housing embodying internal supports for the trolley-wheel shaft and continued around and brought together in front of the trolley-wheel, said shaft and said wheel, and countersunk bolts securing the two sides of the housing together, substantially as set forth.

6. The combination, in a trolley for electric railways, with the trolley-wheel shaft and trolley, of side pieces inclosing and supporting the same, said side pieces having countersunk holes to receive the bolts, and said bolts sunk flush with the surfaces of said side pieces, whereby the whole external surface is rendered smooth and free from projections, substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 11th day of November, A. D. 1891.

JOHN W. NEWHOUSE. [L. S.]

Witnesses:

CHESTER BRADFORD,

JAMES A. WALSH.