(No Model.)

W. LE R. EMMET.

TROLLEY.

No. 417,998. Patented Dec. 24, 1889.

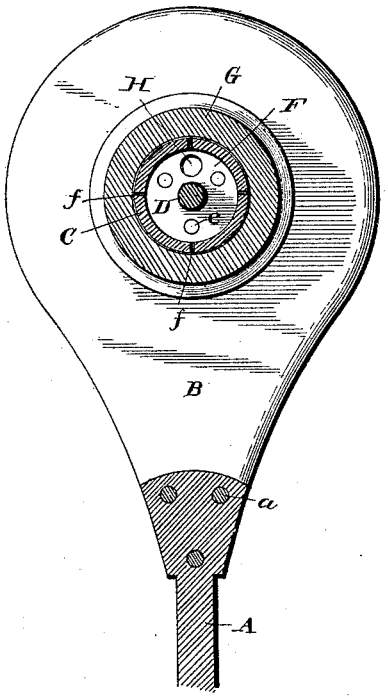

Fig. 1.

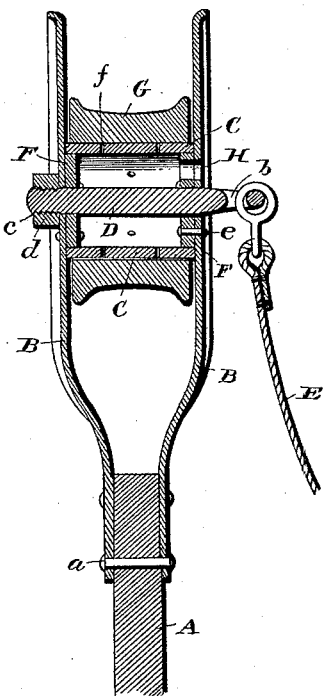

Fig. 2.

Witnesses
Albert Speidel.
B. W. Sommers.

Inventor
William Le Roy Emmet
By his Attorney.
Wm. Hunter Myers.

UNITED STATES PATENT OFFICE.

WILLIAM LE ROY EMMET, OF WICHITA, KANSAS.

TROLLEY.

SPECIFICATION forming part of Letters Patent No. 417,998, dated December 24, 1889.

Application filed September 12, 1889. Serial No. 323,743. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LE ROY EMMET, a citizen of the United States of America, residing at Wichita, in the county of Sedgwick and State of Kansas, 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 for electric cars for making contact with an overhead wire.

The invention has for its object to provide an improved trolley which shall be strong and efficient, capable of production at a minimum cost, and providing for the automatic lubrication and the ready assemblage or disconnection of the parts.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a vertical section through a trolley constructed in accordance with my invention. Fig. 2 is a vertical section through the same at a right angle to the plane upon which the section in Fig. 1 is taken.

The novelty in the present instance resides in the peculiarities of construction and the novel combination, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the appended claims.

Referring to the details of the drawings by letter, A designates the pole or stem, which is designed to be secured in any well-known manner to the pole or rod which extends from the top of the car in the usual manner.

B B are plates of metal secured at their lower ends to the upper end of the stem A in any suitable manner, preferably by means of rivets *a*, which may serve as a connection for the wire which might connect with the car to complete the circuit.

C is a tube of suitable size, clamped or otherwise secured between the plates B, as shown in Fig. 2, by means of the transverse bolt D, provided at one end with an eye *b*, to receive the end of a rope E, and at the other end screw-threaded, as shown at *c*, for the reception of a nut *d*.

F are disks or circular plates arranged within the tube or sleeve C, and serving to close the ends thereof. They are provided with suitable holes for the passage of the bolt D. These disks or plates are secured to the plates B by means of bolts or rivets *e*, as shown clearly in Fig. 2.

G is a sheave surrounding the sleeve or tube C, and of slightly less length than the space between the plates, so as to allow of free movement of the sheave. This feature is clearly illustrated in Fig. 2.

H is an opening through one end of the tube-head or disk, said opening also extending through the adjacent plate, as shown in Fig. 2, to provide communication with the interior of the tube, which tube, with its heads, forms an oil-receptacle, for a purpose hereinafter described.

In the wall of the tube or sleeve C are small openings *f*, through which the lubricant within the oil-receptacle passes to the inside bearing-surface of the roller or sheave.

The tube or sleeve C forms the axis on which the roller or sheave revolves. The axle or axis thus being large, the motion of the roller is not necessarily very free, but will be found sufficient to distribute the wear of the wire evenly over the whole periphery of the roller. The outer periphery of the roller is preferably grooved, as shown in Fig. 2, the said external grooved surface making contact with the wire on which it is designed to travel, and causing the roller to turn as the car advances.

The upper ends of the plates B extend beyond the periphery of the roller or sheave, and serve as guides to prevent the wire from running off the roller, the said plates at their edges being rounded or flared, as shown in Fig. 2, to avoid catching on or scraping the wire.

A trolley constructed as above described can be made very light, yet strong; the parts which are exposed to wear can be easily replaced; it requires little or no care; the lubrication is always sure and perfect; the flaring of the flanges prevents them from catching on excrescences on the wire; the guides, being sta-

tionary in relation to the roller instead of being a part thereof, serve very efficiently, and the whole device allows of any transverse wires with which it may come in contact to slip freely over without catching.

In practice I may place the lubricant directly within the chamber or receptacle formed by the tube or sleeve and heads; but it is preferable to place within the chamber some absorbent material—as cotton-waste or the like—to absorb the lubricant.

What I claim as new is—

1. The combination, with the fixed plates, of a tube held between said plates and a contact-roller on said tube independent of the plates and free to revolve on the tube, substantially as described.

2. The combination, with the fixed plates, of the tube held between said plates and having its wall provided with openings, as shown, and the roller on the tube free to revolve thereon independent of the plates, substantially as described.

3. The combination, with the tube and the roller thereon, of the fixed plates holding the said tube and extended upward above the roller independent thereof, as set forth.

4. The combination, with the fixed plates having their upper edges flaring, of the tube held between said plates and the roller on the tube independent of the plates, substantially as described.

5. The combination, with the fixed plates, the tube held between said plates and the disks within the tube at the ends thereof, of the transverse pin and the roller on the tube independent of the plates, substantially as described.

6. The combination, with the plates fixed to the stem, the tube held between said plates, and the disks secured to the plates, of the roller on the tube independent of the plates, and the transverse pin passed through the plates and disks and provided with a nut, substantially as described.

7. The combination, with the stem and the plates fixed thereto, of the tube held between the plates, the roller free to turn on the tube independent of the plates, the disks in the tube, the transverse pin and the nut thereon, the wall of the tube having perforations, and a filling-aperture through one disk, and the adjacent plate, substantially as and for the purpose specified.

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

WILLIAM LE ROY EMMET.

Witnesses:

O. E. WELLER,

A. E. HELM.