

(No Model.)

E. M. DOIG.
LUBRICATOR FOR TROLLEYS.

No. 466,737.

Patented Jan. 5, 1892.

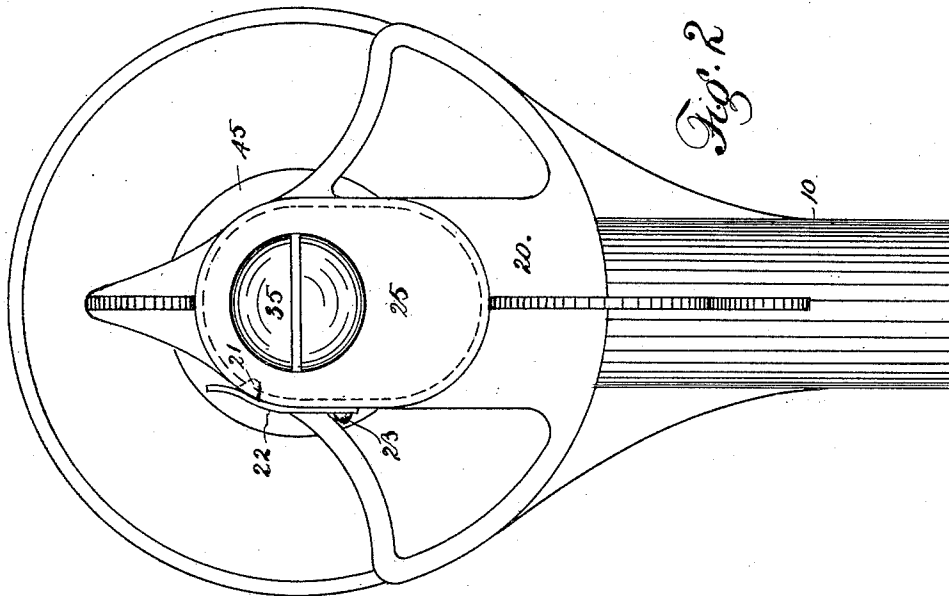


Fig. 2

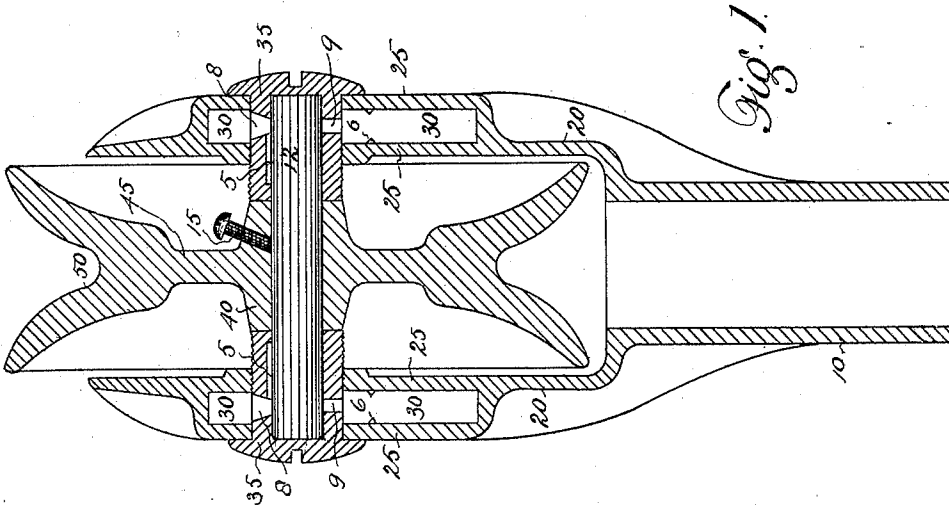


Fig. 1

Witnesses
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UNITED STATES PATENT OFFICE.

EDWIN M. DOIG, OF DENVER, COLORADO, ASSIGNOR OF ONE-FOURTH TO
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LUBRICATOR FOR TROLLEYS.

SPECIFICATION forming part of Letters Patent No. 466,737, dated January 5, 1892.

Application filed August 17, 1891. Serial No. 402,933. (No model.)

To all whom it may concern:

Be it known that I, EDWIN M. DOIG, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Self-Oiling Trolleys; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in trolleys for use in electric overhead railway systems; and the object of the invention is to automatically lubricate the trolley-bearings, and thus add to their efficiency and durability.

In my improved construction the trolley wheel or pulley is made rigid on the spindle or axle, whose extremities pass through small chambers or reservoirs filled with some suitable lubricant. The improvement will be fully understood by reference to the accompanying drawings in connection with the description hereinafter given.

In the drawings, Figure 1 is a longitudinal vertical section taken through the trolley wheel and frame. Fig. 2 is a side elevation of the same.

In the views, similar reference-characters indicating corresponding parts or elements of the mechanism, let the numeral 10 designate the socket, adapted to receive the upper extremity of the arm, which forms the medium through which the current is carried to the car. This socket is formed of metal, preferably copper, and terminates at its upper extremity in a bifurcated frame of suitable general shape to receive the trolley and permit freedom of rotation. Within this frame is journaled the spindle, to which the trolley is rigidly secured, as by a set-screw 15 or in any other suitable manner. The sides 20 of the frame in which the bearings for the spindle are formed are double the greater part of their length and consist of two plates 25 25, inclosing a reservoir or chamber 30, closed at

the top and bottom and open only at the spindle-bearings. The bearing proper for each journal of the spindle consists of a removable casing 35, of cylindrical shape, screwed into the inner plate 25 of each side of the frame and fashioned to fit nicely over the end of the spindle, upon which it forms a cap, its outer extremity being formed into a screw-head provided with the usual groove and overlapping the surrounding outer plate of the frame.

The opening of the outer plate 25 on each side of the frame is smooth, as is also the outer portion of the bushing-cap, which is adapted to slip into said opening and through the oil-reservoir and screw through the inner plate to engagement with the hub 40 of the trolley 45.

Each bushing-cap 35 is provided with an opening 8, formed in its shell above the spindle-journal, and another opening 9, formed therein below said journal, as shown in the drawings. The oil or other lubricant passes from the chamber 30 through these openings to the journal. In order to better distribute the lubricant over the journals of the spindle, the shell of each bushing-cap 35 is provided with an interiorly-formed groove 5, leading from opening 8 toward the hub of the trolley, but terminating before reaching the inner extremity of the bushing-sleeve. The lower portion of each oil-chamber is provided at a short distance from the bushing with short spines or projections 6, extending from the walls of the chamber and adapted to form a support for packing if it should at any time be thought necessary or desirable to use the same.

Each reservoir is supplied with lubricating material through a suitable aperture formed in the upper part of the shell and normally closed by a spring cork or plug, 21 being the stopper, 22 the spring, and 23 the screw or rivet holding the same in place.

It will be observed from the foregoing description that the oil-chambers are tightly closed, except where the apertures are formed leading to the spindle-journals; also, that after the lubricant reaches these journals it is so closely confined that there is little or no chance for it to escape therefrom.

The periphery of the trolley is grooved after the ordinary manner, as shown at 50, and adapted to engage the overhead wire carrying the current, which is transmitted through the trolley and its supporting-arm to the car.

5 The general formation of the trolley-frame is believed to be well adapted to subserve the requirements of a device of this class.

Having thus described my invention, what
10 I claim is—

1. The combination, with a trolley-wheel made fast to its spindle, of a frame in which the spindle rotates, said frame being provided with oil-chambers on each side, one surrounding each spindle-journal, removable bushings surrounding the journals and screwed
15 into openings in the frame and passing through the oil-chambers, and openings in the bushing permitting the passage of oil from the chambers to the journals, substantially as described.

2. The combination, with a trolley-wheel, of a frame provided with oil-chambers, a spindle to which the trolley is made fast, bearings
25 for the spindle-journals, consisting of bushing-caps fitting thereover and passing through the oil-chambers, and apertures leading from

said chambers to the journals, substantially as described.

3. The combination, with a trolley-wheel made fast to its spindle and provided with a shouldered hub, of a frame provided with oil-reservoirs, bearings for the spindle-journals, consisting of bushing-caps fitting thereover, passing through the oil-chambers, and engaging the shouldered hub of the trolley, and openings leading from the oil-chambers through the bushing to the journals, substantially as described.

4. The combination, with a trolley made fast on its spindle, of a frame provided with oil-chambers, bearings for the spindle-journals, consisting of bushing-sleeves passing through the oil-chambers and having openings leading therefrom to the journals, and also a groove extending from one or more of said openings along the journal toward the hub of the trolley, substantially as described.

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

EDWIN M. DOIG.

Witnesses:

WM. MCCONNELL,
G. J. ROLLANDET.