

(No Model.)

A. W. GABRIO.
OILING DEVICE FOR TROLLEY WHEELS.

No. 567,783.

Patented Sept. 15, 1896.

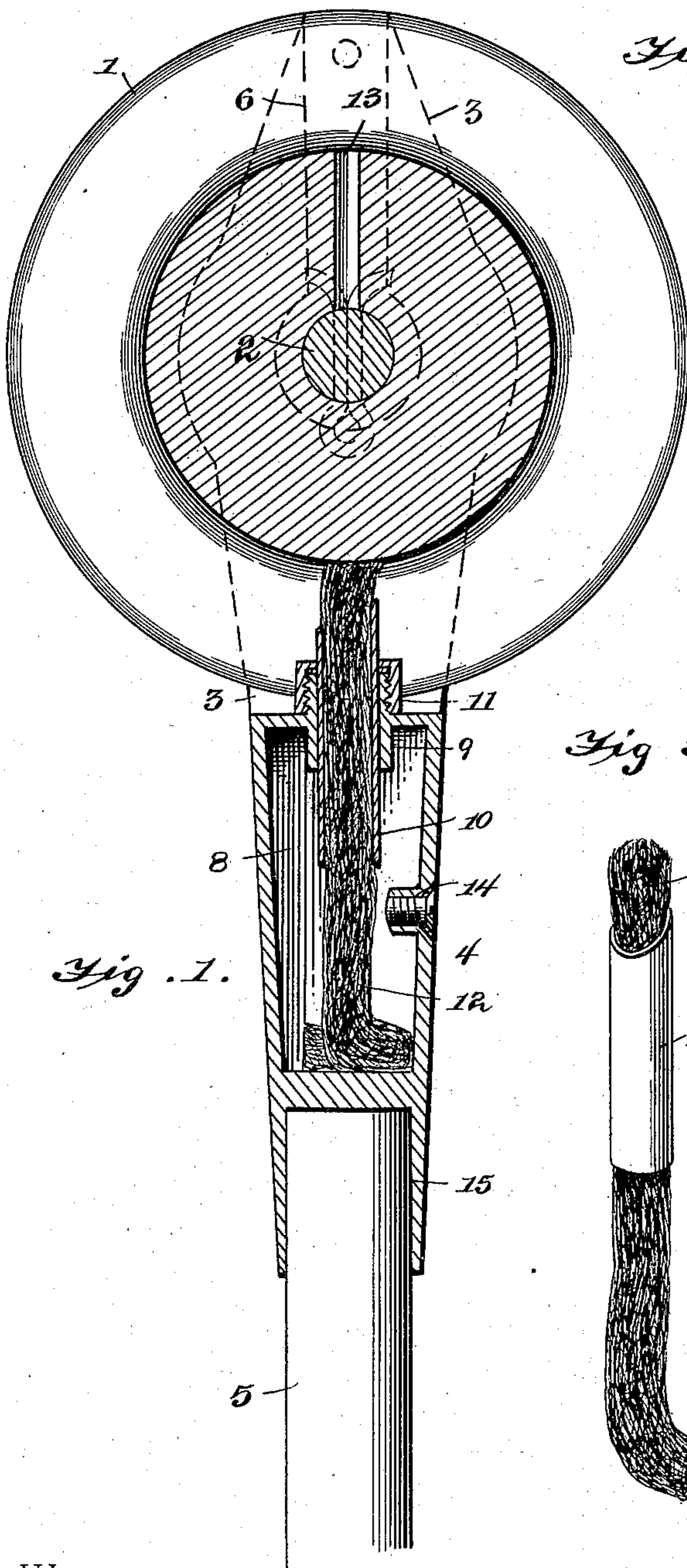


Fig. 1.

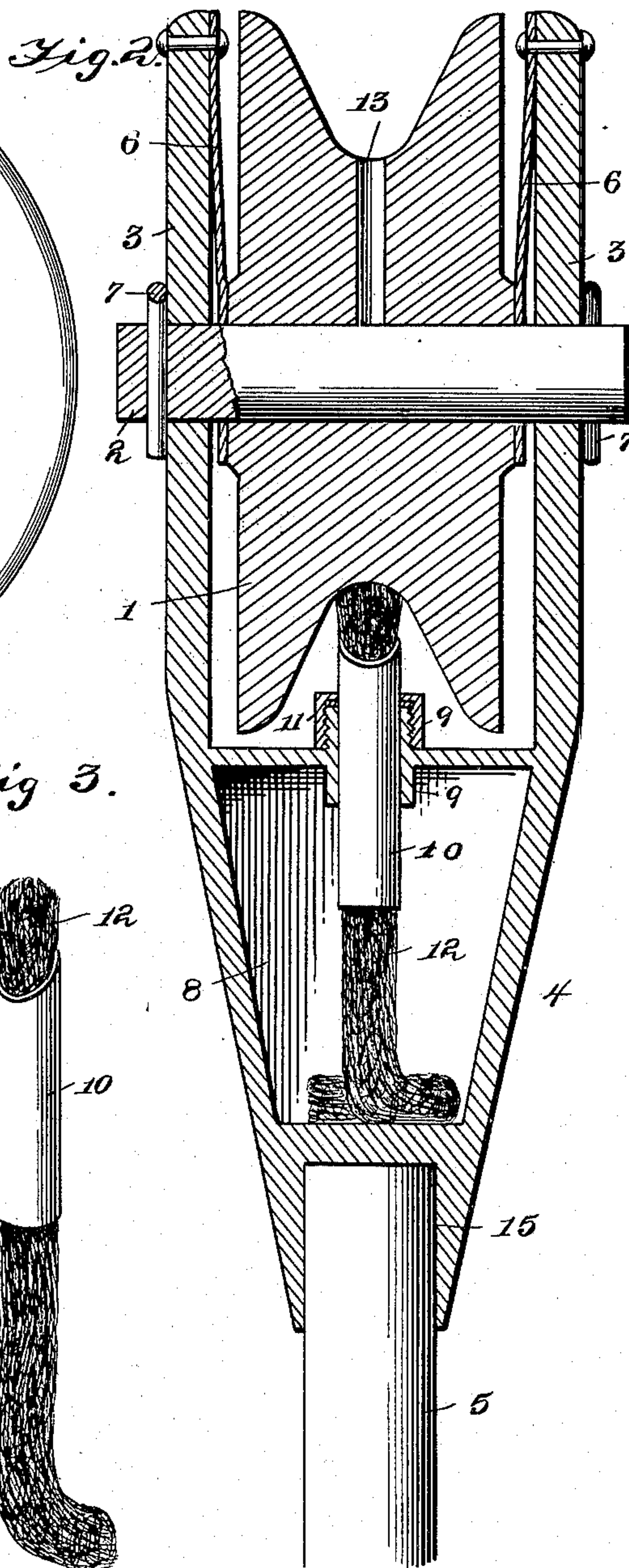


Fig. 2.

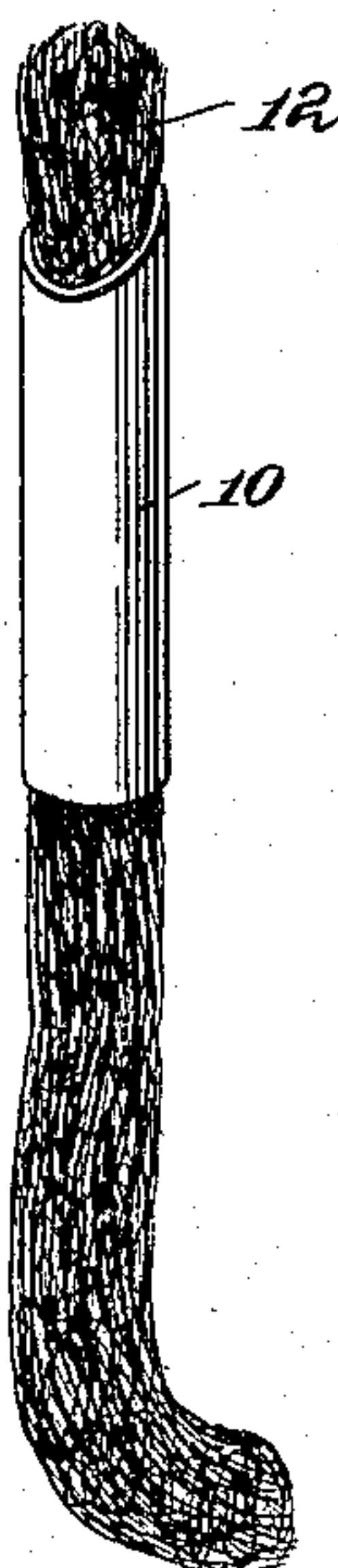


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

ALFRED W. GABRIO, OF HAZELTON, PENNSYLVANIA.

OILING DEVICE FOR TROLLEY-WHEELS.

SPECIFICATION forming part of Letters Patent No. 567,783, dated September 15, 1896.

Application filed March 12, 1896. Serial No. 582,918. (No model.)

To all whom it may concern:

Be it known that I, ALFRED W. GABRIO, a citizen of the United States, residing at Hazelton, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Oiling Device for Trolley-Wheels, Electrical Conductors, &c., of which the following is a specification.

This invention relates to oiling devices for the trolleys of electric cars and the electrical conductors with which the trolley-wheels move in contact.

The object of the present invention is to provide a fork or yoke of novel construction embodying an oil-reservoir and having provision whereby the lubricating material is fed or conducted to the grooved periphery of the trolley-wheel and at the same time to the axle or spindle of such wheel, the object being to reduce the friction of the wheel upon its journal and also the friction between the wheel and the electrical conductor, and, further, to apply a coating or film of oil to such electrical conductor for enabling the same to resist the adherence of ice, snow, and water, &c., thereto.

With the above general objects in view the invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and finally pointed out in the claims hereto appended.

In the accompanying drawings, Figure 1 is a vertical longitudinal section through the improved device, taken at right angles to the axis of the trolley-wheel. Fig. 2 is a similar view taken at right angles to Fig. 1, or in line with the trolley-wheel spindle. Fig. 3 is a detail perspective view of the wick-tube, wick, &c.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the accompanying drawings, 1 designates the trolley-wheel, which is provided with a grooved periphery forming a seat for the electrical conductor, the side walls of the groove constituting flanges which prevent the wheel from escaping from the wire. The wheel 1 is journaled upon a shaft or spindle 2, mounted at its ends in the opposing arms 3 of a fork or yoke 4, attached to the

upper swinging end of the trolley-pole 5, which may be connected with the car and given a normal pressure toward the overhead wire for holding the trolley-wheel in close electrical contact therewith. The trolley-wheel 1 is mounted loosely on the shaft or spindle 2 and space is left at either side of the wheel and between its sides and the inner surfaces of the fork-arms 3, whereby the wheel may have a predetermined amount of lateral play. The wheel is, however, held at a medial point between the fork-arms by means of leaf-springs 6, which are secured permanently at their outer ends to the corresponding ends of the fork-arms 3, the inner ends of the springs 6 being formed with openings whereby they embrace the spindle 2 and exert an inward pressure against the sides of the trolley-wheel. This construction maintains the trolley-wheel in a central position within the fork and at the same time allows it to yield to a limited extent laterally, in which yielding movement the tension of one or the other of the springs 6 is temporarily overcome. The spindle 2 is held in place by means of cotter-pins 7, arranged outside of the fork-arms and inserted through diametrical openings in the end of the spindle. By this construction, and owing to the particular arrangement of the springs 6, the trolley-wheel may be easily removed and replaced when necessary.

The crotch or base of the fork is made hollow to constitute an oil-reservoir 8, and it may be extended any desired distance longitudinally of the fork, according to the capacity which it is desired to impart to the reservoir. That end of the reservoir next to the trolley-wheel is formed with an opening in line with the center of the wheel, and this opening has formed around it inwardly and outwardly extending annular flanges 9, one of which projects into the reservoir 8 and the other outwardly from the reservoir toward the trolley-wheel. Between these flanges and through the opening is inserted a tubular wick-holder 10, which may be adjusted longitudinally and which may be clamped and held at the desired adjustment by means of a nut 11, which has a threaded engagement with the outwardly-projecting flange 9, and between which nut and the tubular wick-holder 10 is

interposed a leather or other flexible washer, whereby the holder is grasped and held when the nut is tightened. A wick 12 passes through the tubular wick-holder and presses against the base of the groove of the trolley-wheel 1 at one end, while its opposite or lower end rests in the oil in the reservoir 8.

For the purpose of conducting oil to the spindle 2 of the trolley-wheel a radial passage or opening 13 is formed in the trolley-wheel, the same extending from the base of the groove of said wheel inward to and communicating with the central opening in the said wheel, through which is received the spindle. At each revolution of the wheel 1 the mouth of the passage 13 passes the upper end of the wick 12, and by contact therewith a certain amount of oil is scraped from the wick and caused to enter the mouth of the passage 13, and in the further revolution of the wheel the oil finds its way through said passage and spreads over the spindle 2, thus keeping the same continually lubricated. Oil is supplied to the reservoir through an opening in the wall thereof, which opening is filled by means of a threaded plug 14, having a slotted head, by means of which it may be removed and replaced with the aid of a screw-driver, the closure of the opening being made tight by means of a leather or other soft flexible washer arranged under the head of the plug in a manner readily understood. The upper or outer end of the tubular wick-holder is beveled off, as shown, for the purpose of presenting the distributing end of the wick to the trolley-wheel in a more effective manner. The lower or inner end of the fork 4 is constructed in the form of a socket or thimble 15 for the reception of the upper or outer end of the trolley-pole.

From the foregoing description it will be apparent that the supply of lubricating material is contained and carried in a reservoir formed as an integral part of the fork; that the oil is conducted by capillary attraction from the reservoir to and distributed upon the grooved periphery of the trolley-wheel, and thence and thereby to the electrical conductor with which the wheel travels in contact. At the same time the requisite amount of lubricant is conveyed to the spindle of the trolley-wheel. This has the effect of reducing the friction between the trolley-wheel and

its spindle and between the trolley-wheel and the overhead conductor, and at the same time the conductor has applied thereto a coating of oil, which will prevent the adherence of water, snow, ice, &c., enabling a close electrical contact to be maintained between the trolley-wheel and conductor. It will also be apparent that as the wick wears away at its distributing end it may be adjusted to compensate for such wear or the wick-holder may be adjusted and held in the manner above described.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. The combination with a trolley-wheel having a passage extending from its periphery to its bore, of a carrying-fork in which the same is journaled, an oil-reservoir arranged in the base of the fork, and a distributing device for conducting the oil to the periphery of the wheel, substantially as described.

2. The combination with a trolley-wheel having an opening or passage extending from its periphery to its bore, of the carrying-fork in which said wheel is journaled, an oil-reservoir forming an integral part of the fork, and a distributing device extending from the reservoir to and resting in contact with the periphery of the wheel, substantially as and for the purpose described.

3. The combination with a trolley-wheel, of the fork in which the same is journaled, an oil-reservoir forming an integral part of said fork and provided with an opening through which the oil may pass to the wheel, a flange surrounding said opening for affording an extended bearing to the wick-holder, a wick-holder extending through said opening, and provision for adjusting and holding the wick-holder, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALFRED W. GABRIO.

Witnesses:

ADAM EIDAM,

JOSIAH T. BERRYMAN.