No. 703,134. Patented June 24, 1902.

P. F. KING.

TROLLEY.

(Application filed July 22, 1901.)

(No Model.)

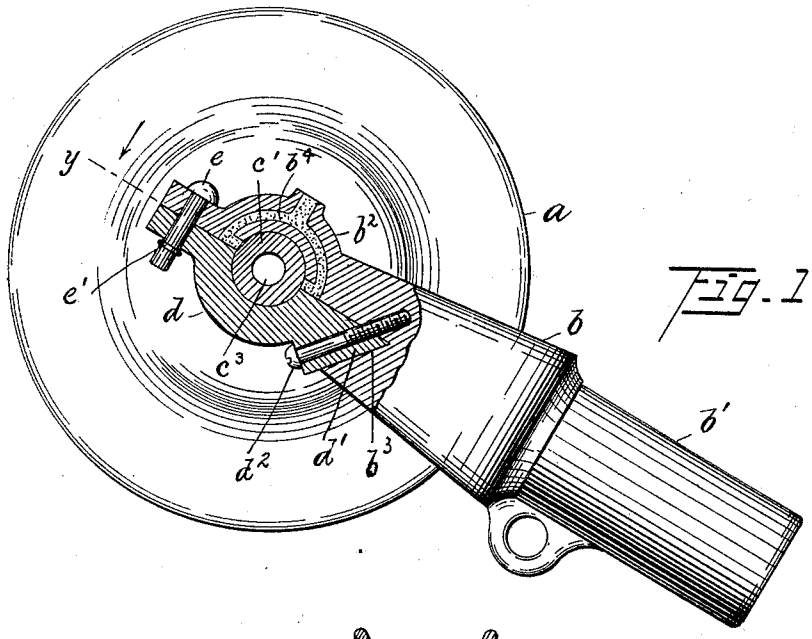


Fig. 1

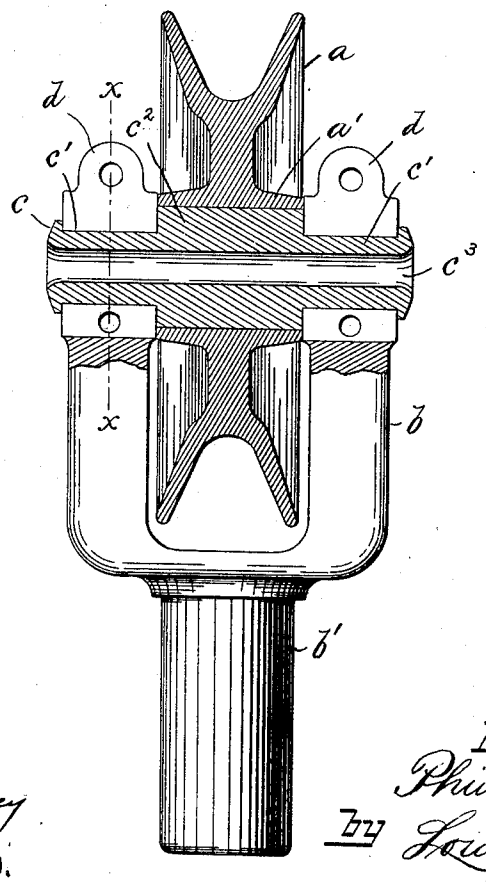


Fig. 2

Witnesses:
George Kidney
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Inventor.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

PHINEAS F. KING, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO CHARLES H. TUCKER, OF CLEVELAND, OHIO.

TROLLEY.

SPECIFICATION forming part of Letters Patent No. 703,134, dated June 24, 1902.

Application filed July 22, 1901. Serial No. 69,206. (No model.)

To all whom it may concern:

Be it known that I, PHINEAS F. KING, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Trolleys, of which the following is a full, clear, and complete specification.

The invention relates to trolleys used on electric railways; and the object of the invention is to provide a durable and serviceable trolley in which the wear on the journals is reduced to a minimum and one in which the journal-boxes are so constructed that when they become worn they may be readily removed and other ones substituted at comparatively small expense.

With these objects in view the invention consists of the construction and combination of the parts hereinafter described, and pointed out definitely in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the improved trolley with the upper part of the fork in section on line $x\,x$ of Fig. 2. Fig. 2 is a plan view with the wheel and spindle in section in direction of arrow on line y of Fig. 1 and the upper part of the journal-boxes broken away.

Similar characters of reference designate similar parts in the drawings and specification.

a represents the trolley-wheel, and b the fork, which is provided with the usual hollow stem b' to receive the upper end of the trolley-pole. The wheel a is preferably made of brass, and the hub a' is shrunk or otherwise tightly fitted onto the enlarged portion c^2 of an iron spindle c, the reduced ends $c'\,c'$ of which are journaled in the fork b. An essential feature of the invention, the purpose of which will presently be explained, is the elimination of the central portion of the spindle c, forming an opening c^3 throughout the entire length of said spindle. The upper halves b^2 of the journal-boxes are made integral with the fork b, and the lower halves d are detachable, being provided with the tapered projection d', which is adapted to fit into a tapered slot b^3 in the fork and held rigidly there by the screw d^2. The outer ends of the boxes are held together either by bolts or, preferably, by pins e, provided with an eye through which a cotter-pin e' is passed. The upper journal-boxes b^2 are cored out, as shown at b^4 in Fig. 1, and the chamber thus formed is packed with paraffin or other suitable lubricant.

In the operation of the improved trolley the current from the trolley-wire passes through the wheel a into the spindle c around the opening c^3 into the fork b and from thence through the stem b' to the trolley-pole. The opening c^3 through the spindle c admits of a constant current of air through the center of said spindle and allows the trolley-wheel to be revolved at a very high speed without heating, and consequently expanding, said spindle. This, as hereinbefore stated, is an important feature of the invention, for if the core of the spindle is not removed, but said spindle is left solid, the current of electricity will pass through the entire spindle, and if the same is rapidly revolved it will become hot and expand and become inoperative.

It will readily be seen that as the trolley-wheel in active service is kept under pressure in contact with the trolley-wire the direction of pressure on the spindle is downward and slightly backward. Consequently the greatest wear on the bearings is in the lower half of the journal-boxes, or, in other words, on the parts d. In the improved trolley these parts d can be readily removed when they become worn and new ones substituted at a very small cost.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a trolley, the combination of a wheel rigidly mounted on a hollow spindle, the upper halves of the journal-bearings for said spindle integral with the trolley-fork, the lower halves detachable therefrom, a lubricant-chamber in the upper halves of the journal-boxes and openings from said chamber to the spindle, substantially as specified.

2. In a trolley the combination of the wheel rigidly mounted on a spindle having an opening extending entirely through the center thereof, the upper halves of the journal-bearing for said spindle integral with the trolley-fork, the lower halves provided with tapered projections which fit into tapered slots in the said fork, means for securing the two halves together and means for lubricating said spindle, substantially as specified.

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

PHINEAS F. KING.

Witnesses:
L. F. GRISWOLD,
CHARLES H. TUCKER.