

No. 744,463.

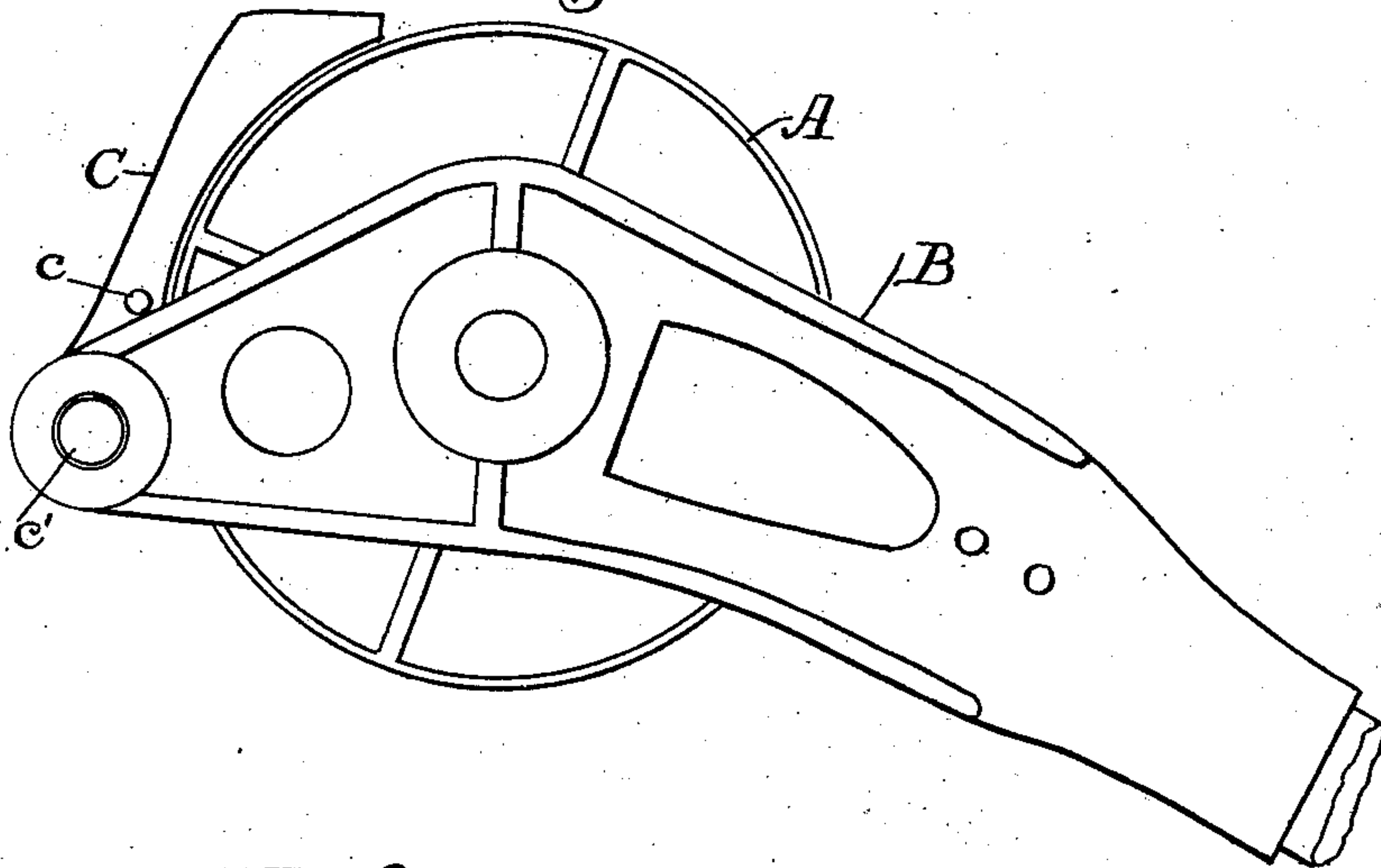
PATENTED NOV. 17, 1903.

J. BISHOP.  
TROLLEY HEAD.

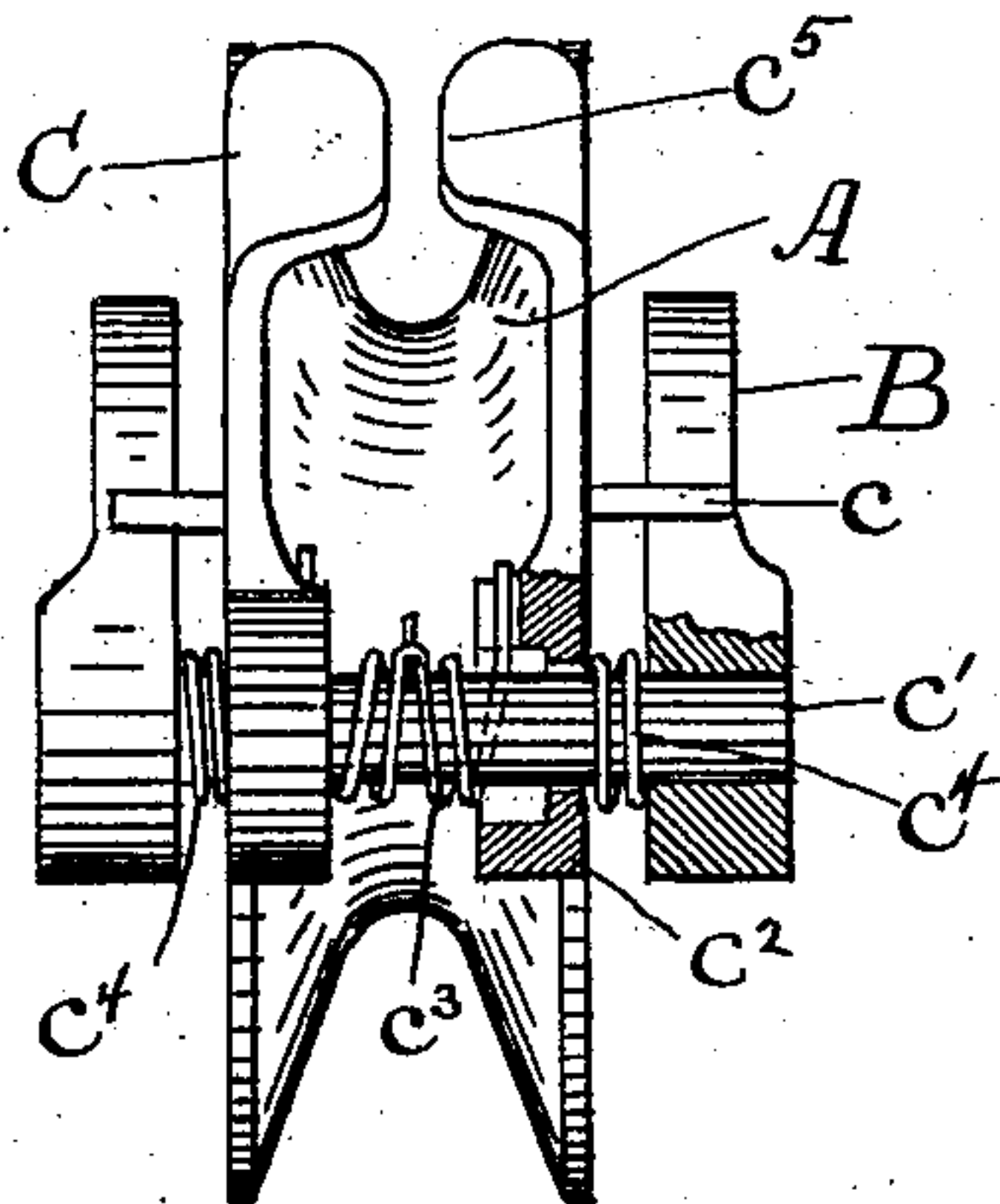
APPLICATION FILED MAR. 26, 1903.

NO MODEL.

*Fig. 1.*



*Fig. 2.*



Witnesses  
L. M. Lydford  
J. H. Cheney

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# UNITED STATES PATENT OFFICE.

JOSEPH BISHOP, OF WESTBROOK, MAINE, ASSIGNOR OF ONE-HALF TO  
CALVIN R. PETERS, OF SOUTH PORTLAND, MAINE.

## TROLLEY-HEAD.

SPECIFICATION forming part of Letters Patent No. 744,463, dated November 17, 1903.

Application filed March 26, 1903. Serial No. 149,634. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH BISHOP, a citizen of the United States of America, and a resident of Westbrook, county of Cumberland, State of Maine, have invented certain new and useful Improvements in Trolley-Heads, of which the following is a specification.

My invention relates to a trolley-head having a safety device to prevent the wheel from leaving the wire.

The tendency of trolley-heads to jump the wire is a well-known and serious source of trouble to the operations of electric cars, and many devices have been tried for preventing this, but so far as I know none of them have come into general use.

My improvement consists of a pair of vertical arms directly in rear of the edges of the trolley-wheel pivoted or held so that they will yield laterally and each having at its upper end an inward-projecting flange or offset, which projects more or less over the wire to prevent it from coming out of the groove.

I illustrate my invention in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved trolley, shown as elevated somewhat above its normal position; and Fig. 2 is a rear elevation.

A represents the trolley-wheel, and B is the fork, these two parts being of any well-known construction.

For the purpose of holding the wire in the wheel I provide two vertical arms in rear of the flange of the wheel and directly behind the same. The upper ends of these arms C are somewhat below the top of the wheel when the pole is inclined in its normal position, and the upper end of each is provided with an inward-extending flange or projection  $c^5$ , which extends more or less over the wire in a position where it will be hit as the wire leaves or tends to leave the groove of the wheel. The arms are yieldingly held at their lower ends, so that they will give way laterally when the wire comes up and hits the flanges  $c^5$ , and, as here shown, they are also held so as to yield directly to the rear in case they should be struck by an obstruction overhead. For the purpose of supporting the arms I provide a shaft  $c'$ , which is secured in a rearward ex-

tension of the fork and extends across in rear of the wheel. The lower end of each of the arms C has a hub  $c^2$ , which fits loosely over the shaft, so that the upper end may swing laterally to a limited extent, and it is also held so as to yield rearward. For this purpose I provide a coiled spring  $c^3$  on the shaft between the arms, fastened centrally and having its ends terminate in recesses in the hubs  $c^2$ . This spring tends to force the arms forward against the wheel, and they are prevented from striking the wheel by pins  $c$ , which project laterally and bear against the fork. Springs  $c^4$  on the outside of each hub and inside of the fork hold the arms laterally in position on the shaft. When the wire tends to jump from the wheel and come out, it strikes one of the flanges  $c^5$ , and its movement is thereby checked. If the blow comes too hard against the flange, the arm will give way and let the wire off the wheel. When the trolley-head is lowered by pulling down on the rope, the wire separates the arms C, and the latter offer no obstruction.

This device is simple, there is little weight to it, and it adds but little expense to the head.

I claim—

1. The herein-described trolley consisting of a fork and a wheel journaled therein, a pair of vertical arms directly in rear of the edges of the wheel, the lower end of each arm being connected with the fork with a yielding connection and the upper end being provided with an inward-projecting flange or offset extending more or less over the wire to prevent the same from leaving the wheel.

2. The herein-described trolley consisting of a fork and a wheel journaled therein, a pair of vertical arms directly in rear of the edges of the wheel, a transverse shaft to which the lower end of each arm is pivoted, the upper end of each arm having an inward-projecting flange or offset extending more or less over the wire and springs for holding said arms in their normal position.

Signed at Portland, Maine, this 23d day of March, 1903.

JOSEPH BISHOP.

Witnesses:

L. M. GODFREY,  
S. W. BATES.